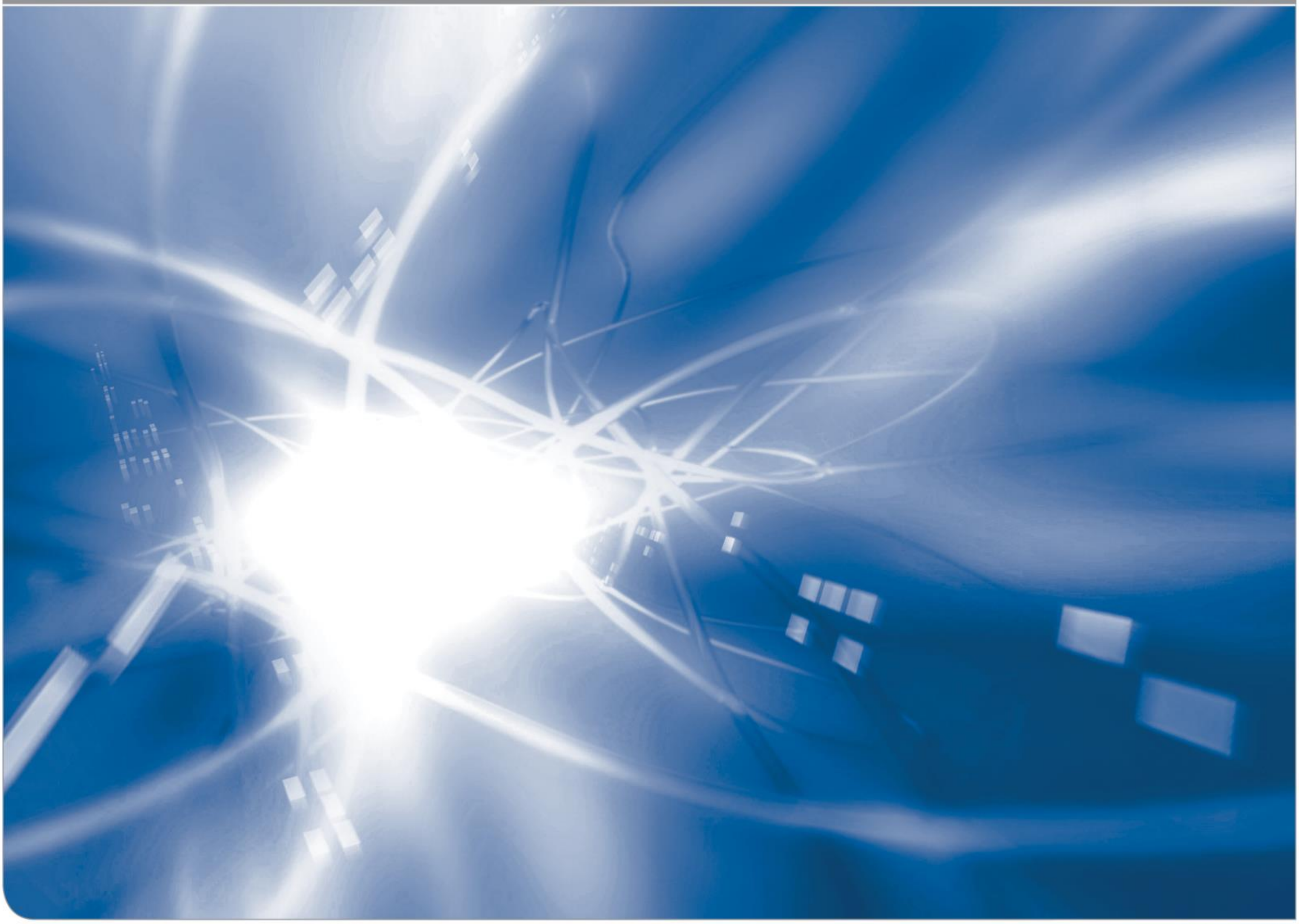
Karlsruhe Institute of Technology

Complete gas production data library for nuclides from Mg to Bi at neutron incident energies up to 200 MeV

by A.Yu. Konobeyev[1], U. Fischer[1]

KIT SCIENTIFIC WORKING PAPERS 36



[1] Institut für Neutronenphysik und Reaktortechnik,
Karlsruher Institut für Technologie (KIT)

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Abstract

An evaluation of proton-, deuteron-, triton-, ^{3}He-, and α-particles- production cross-sections was performed for 262 stable nuclides with atomic number from 12 to 83 at the energies of primary neutrons up to 200 MeV. The data were compiled in ENDF formatted data files.

CONTENTS

1. Introduction

A study of primary radiation effects in material of fusion units and neutron spallation sources implies the use of a set of reliable data for a calculation of gas production rates for a wide range of primary neutron energies and target materials. An obtaining such data is one of important challenges of applied nuclear physics. The solution concerns the use of advanced theoretical models, experimental data, and data of systematics [1].

The goal of this work is to obtain gas production cross-sections for stable targets with the atomic number from 12 to 83 at incident neutron energies up to 200 MeV. The work involves

- the analysis of available experimental data
- the estimation of atomic mass dependence of cross-sections, $\sigma(A)$ at primary neutron energy around hundred MeV to improve final evaluated curves, as described in Ref.[2]
- the analysis of evaluated data from ENDF/B-VII.1, JENDL-4, JEFF-3.2, and TENDL-2014, if available
- theoretical calculations
- the improvement of available evaluated data concerning an incorrect energy dependence, jumps, and other irregularities
- the cross-section evaluation involving measured data, values estimated using the $\sigma(A)$- dependence, systematics predictions, and results of model calculations.

In most cases, the evaluated data of JEFF-3.2 for (n,p), (n,t), (n,d), and (n,α) reactions below 20 MeV were found to be correct and not requiring improvement. For a number of reactions data at neutron incident energies below 20 MeV were taken from other libraries or corrected.

Section 2 describes briefly experimental data used for the evaluation of gas production cross-sections, a selection and eventual corrections. The evaluation of atomic mass dependence of cross-sections to be used for the correction of components of evaluated gas production cross-sections, is discussed in Section 3. Section 4 explains the details of the use of available nuclear data files and results of model calculations for the evaluation. Section 5 describes results of the evaluation.

Obtained proton-, deuteron, triton, and α-particle production cross-section are shown in Appendices A-D.

2. Experimental data

The experimental data used for the evaluation of gas production cross-sections were taken from Refs.[3-26] and relating EXFOR files. Available measured data refer to individual target isotopes, as for example, Ref.[25], natural mixtures of isotopes, sums of proton-, deuteron-, and triton- production cross-sections, ^{3}He and α-particle production cross-sections. A number of cross-sections were measured for a limited energy range of emitted charged particles and require corrections to get total gas production cross-sections.

In the last case the data measured were corrected as described below. For some targets corrections performed by authors of measurements using the GNASH code [27] and TALYS code [28] were adopted for further use. In the present work, particle energy distributions were calculated with the TALYS code [28] using different models for the calculation of the nuclear level density for excited nuclei. In the most cases the calculated part of cross-section σ above the experimental low cut-off energy E_{min} was normalized on the measured value; the obtained cross-section was added to the calculated part of σ below E_{min} multiplied by the obtained coefficient to get the production cross-section at all emission energies. The final value of cross-section for each incident neutron energy was obtained by the averaging of results obtained using different models for nuclear level density.

The proton and α-particle production cross-sections were extracted from the corresponding measured hydrogen and helium production cross-sections using available experimental information for neighbouring target nuclei and results of model calculations.

3. Evaluation of atomic mass dependence of gas production cross-sections

The method of the correction of calculated gas-production cross-sections using the evaluated A-dependence is discussed in Refs.[2].

An idea is the evaluation of the atomic mass dependence of cross-sections using available experimental information and results of model calculations for a fixed incident particle energy. The approach gives a possibility to obtain experimentally based values of cross-sections for targets, if the measured data are absent. The method is different from the use of global A-systematics, where predictions are made basing on a global parameterization of existing data and approximate formulas.

In analogy with the common evaluation of the energy dependence of cross-section for a certain target, here the atomic mass dependence is estimated for different target nuclei for fixed incident particle energy. It is assumed that the energy of primary particles is high enough to attribute the possible difference of calculations and experimental data to deficiency of global parameter systematics used for calculations, for example for the simulation of non-equilibrium particle emission making the contribution to the gas production cross-section. Another criterion for selecting the primary particle energy for evaluation of $\sigma(A)$ dependence is the number of available measurements.

The use of estimated A-dependence seems to be a natural way to apply available data for neighbouring target-nuclei for the evaluation of cross-sections [2].

After analysing the measured data, the neutron energy of 96 MeV was chosen for the evaluation of $\sigma(A)$ dependence.

Improved and corrected experimental cross-sections σ^{exp} at 96 MeV used for the evaluation of A-dependence of components of gas production cross-sections are shown in Tables 1-5. In some cases errors of particle production cross-sections $\Delta\sigma$ shown in Tables reflect performed corrections and improvements and are not original errors reported in corresponding experimental works.

The calculation of gas production cross-section components were performed for 278 stable nuclei from ^{7}Li to ^{209}Bi using nuclear models implemented in the ALICE/ASH [29] code and the TALYS [28] code. Different models describing the nuclear level density were applied for calculations. The details are discussed in Ref.[2].

Figures 1-5 shows examples of calculations using ALICE/ASH and TALYS codes.

Table 1. Cross-sections σ^{exp} adopted for the evaluation of proton production cross-section in neutron induced reactions (n,x)p at the incident neutron energy 96 MeV. Corrections of original data are discussed in the text.

Nucleus	Cross-section (mb)	Reference
^{nat}C	170 ± 17	[8]
^{nat}O	257.5 ± 14.4	[10]
^{nat}Si	494.8 ± 22.7	[18]
^{nat}Cr	639.6 ± 127.9	[21]
^{nat}Fe	697.9 ± 30.7	[19]
^{nat}Fe	588.4 ± 117.7	[21]
^{181}Ta	237.6 ± 47.5	[21]
^{nat}Pb	485 ± 24.3	[19]

Table 2. Cross-sections σ^{exp} adopted for the evaluation of deuteron production cross-section in neutron induced reactions (n,x)d at the incident neutron energy 96 MeV. Corrections of original data are discussed in the text.

Nucleus	Cross-section (mb)	Reference
^{nat}C	70 ± 4	[8]
^{nat}O	80.1 ± 4.1	[10]
^{nat}Si	84.3 ± 4.0	[18]
^{nat}Cr	146.3 ± 29.3	[21]
^{nat}Fe	133.1 ± 6.5	[19]
^{nat}Fe	112.2 ± 22.5	[21]
^{181}Ta	68.5 ± 13.7	[21]
^{nat}Pb	137.0 ± 6.9	[19]

Table 3. Cross-sections σ^{exp} adopted for the evaluation of triton production cross-section in neutron induced reactions (n,x)t at the incident neutron energy 96 MeV. Derivation of data and corrections are discussed in the text.

Nucleus	Cross-section (mb)	Reference
^{nat}C	32.0 ± 2.0	[8]
^{nat}O	24.20 ± 1.15	[10]
^{nat}Si	16.00 ± 0.82	[18]
^{nat}Cr	23.2 ± 5.1	[21]
^{nat}Fe	21.2 ± 1.1	[19]
^{nat}Fe	17.9 ± 3.6	[21]
^{181}Ta	24.9 ± 5.0	[21]
^{nat}Pb	53.0 ± 2.7	[19]

Table 4. Cross-sections σ^{exp} adopted for the evaluation of ^{3}He production cross-section in neutron induced reactions $(n,x)^{3}He$ at the incident neutron energy 96 MeV. Derivation of data and corrections are discussed in the text.

Nucleus	Cross-section (mb)	Reference
^{nat}C	16.0 ± 2.0	[8]
^{nat}O	11.2 ± 1.5	[10]
^{nat}Si	10.8 ± 1.0	[18]
^{nat}Cr	12.4 ± 2.5	[21]
^{nat}Fe	10.70 ± 0.52	[19]
^{nat}Fe	8.96 ± 1.79	[21]
^{181}Ta	6.47 ± 5.35	[21]
^{nat}Pb	5.12 ± 1.02	[19]

Table 5. Cross-sections σ^{exp} adopted for the evaluation of α-particle production cross-section in neutron induced reactions (n,x)α at the incident neutron energy 96 MeV. Corrections of original data are discussed in the text.

Nucleus	Cross-section (mb)	Reference
^{nat}C	207 ± 12	[8]
^{nat}O	168.7 ± 7.4	[10]
^{nat}Si	155.1 ± 7.1	[18]
^{nat}Cr	202.6 ± 40.5	[21]
^{nat}Fe	182.7 ± 8.4	[19]
^{nat}Fe	153.2 ± 30.6	[21]
^{181}Ta	38.3 ± 7.6	[21]
^{nat}Pb	45.0 ± 2.2	[19]

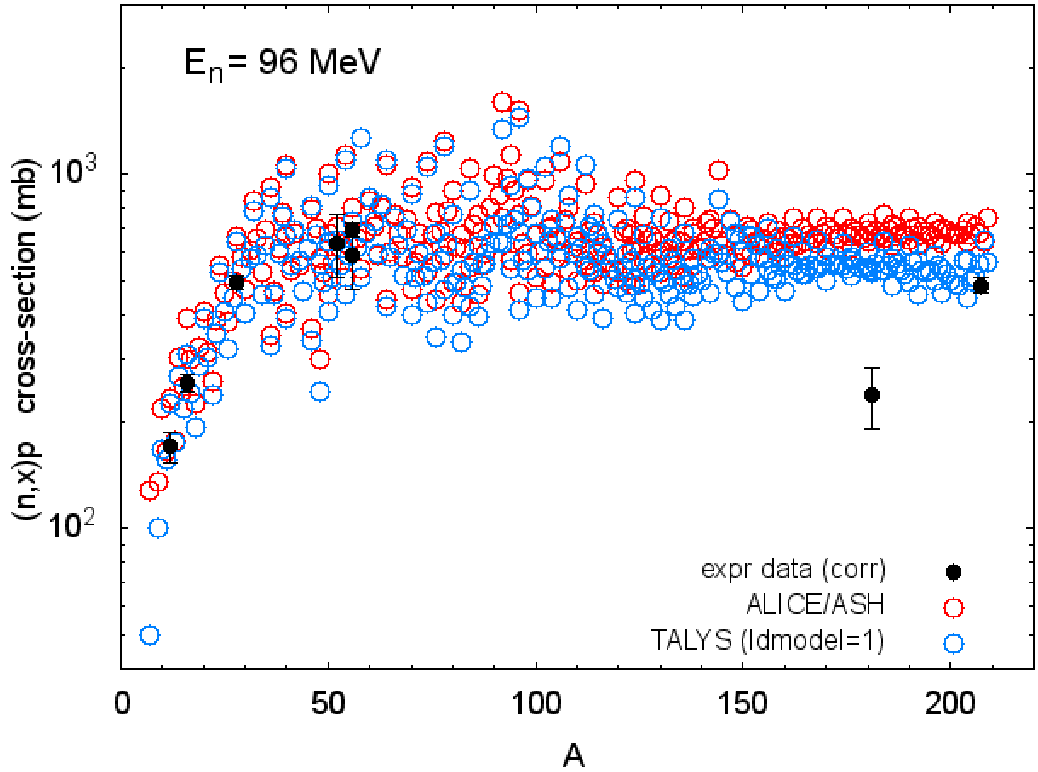

Fig.1 Proton production cross-sections for 278 stable target nuclei from ^{7}Li to ^{209}Bi at the incident neutron energy 96 MeV calculated using the ALICE/ASH code and the TALYS code applying the nuclear level density model corresponding to the input variable *ldmodel equal to one*. See explanations in the text.

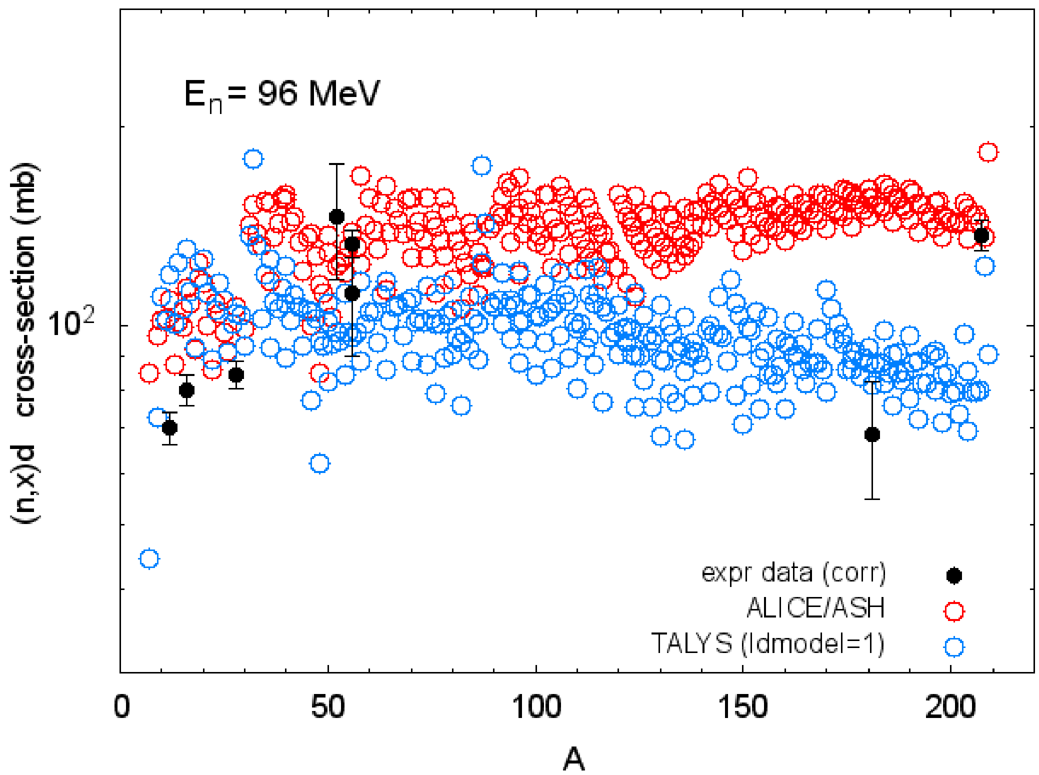

Fig.2 Deuteron production cross-sections for 278 stable target nuclei from ^{7}Li to ^{209}Bi at the incident neutron energy 96 MeV calculated using the ALICE/ASH code and the TALYS code with the input variable *ldmodel*=1. See explanations in the text.

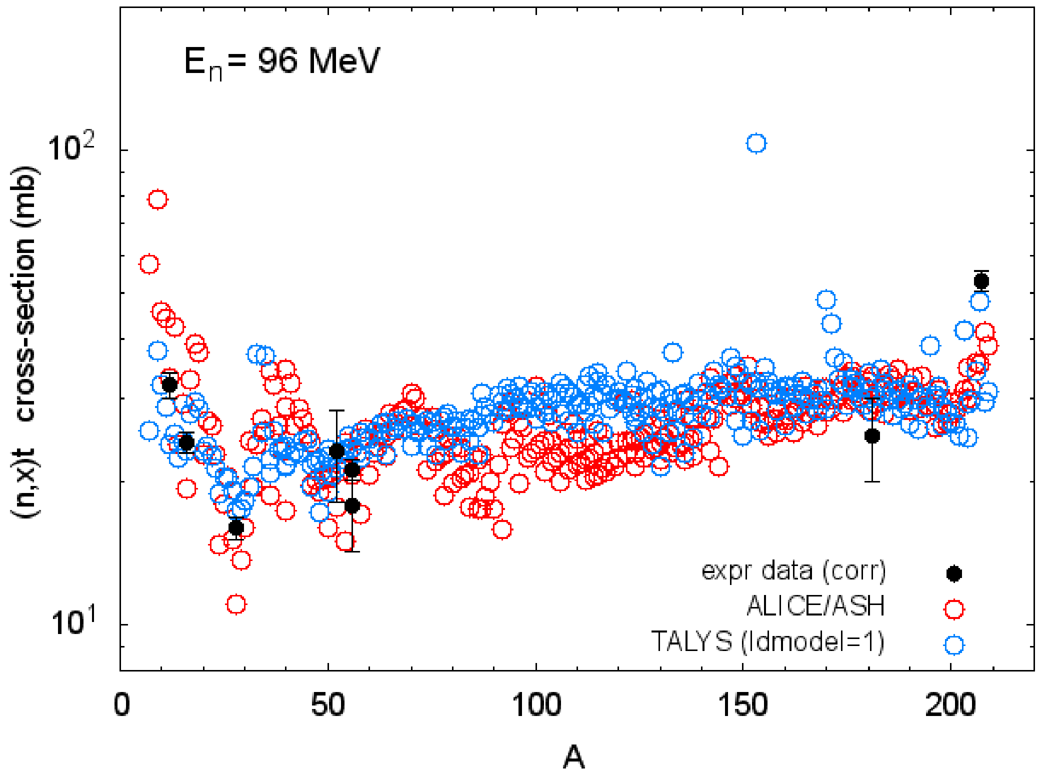

Fig.3 Triton production cross-sections for 278 stable target nuclei from ^{7}Li to ^{209}Bi at the incident neutron energy 96 MeV calculated using the ALICE/ASH code and the TALYS code with the input variable *ldmodel*=1. See explanations in the text.

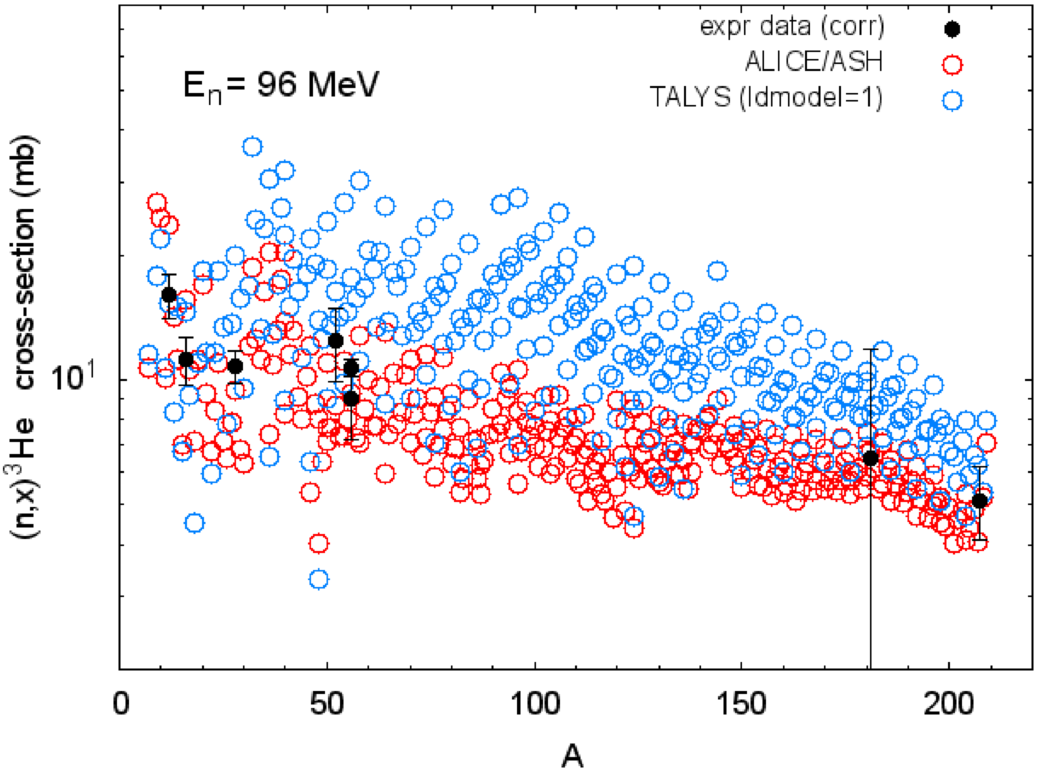

Fig.4 ^{3}He production cross-sections for 278 stable target nuclei from ^{7}Li to ^{209}Bi at the incident neutron energy 96 MeV calculated using the ALICE/ASH code and the TALYS code with the input variable *ldmodel*=1. See explanations in the text.

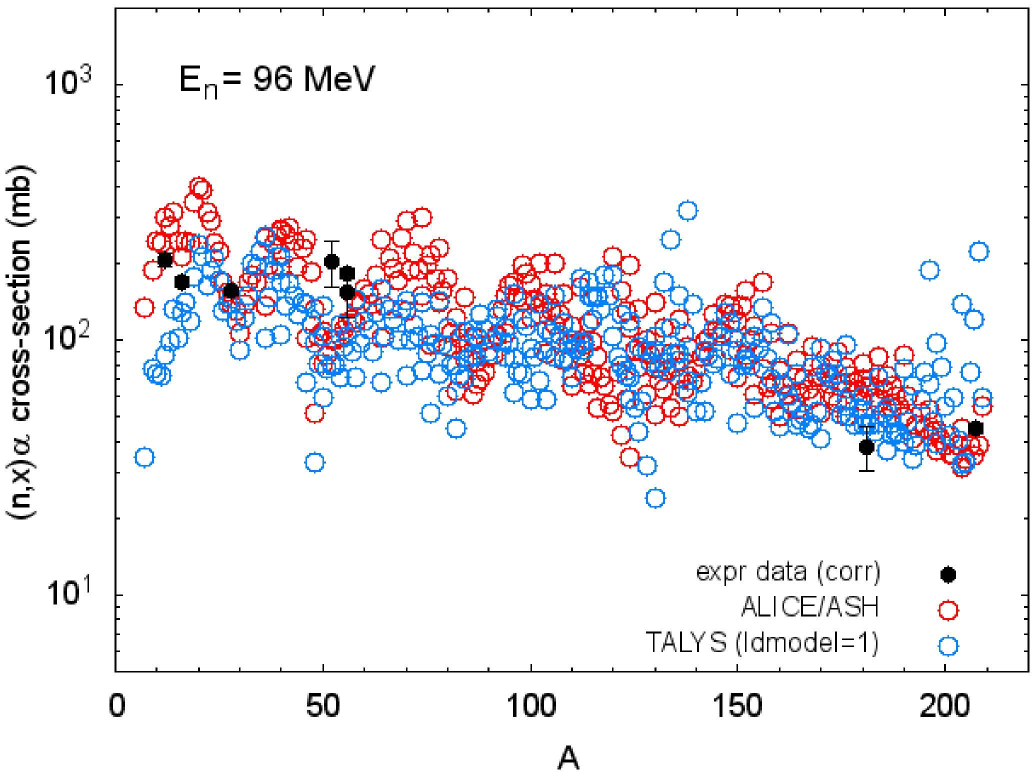

Fig.5 α-particle production cross-sections for 278 stable target nuclei from ^{7}Li to ^{209}Bi at the incident neutron energy 96 MeV calculated using the ALICE/ASH code and the TALYS code with the input variable *ldmodel*=1. See explanations in the text.

The evaluation of atomic mass dependence for proton-, deuteron-, triton-, 3He, and α-particle production cross-section was performed using results of model calculations and measured data, Table 1-5. The BEKED package [30] was applied for computations.

The deviation of calculated cross-sections from measured data was attributed to the global deficiency of models applied, particularly, to the sets of parameters of non-equilibrium models, which utilization can be improved by the redefinition of their general A-dependence. Estimated errors of evaluated production cross-sections result from the application of different nuclear models implemented in the ALICE/ASH code and in the TALYS code corresponding to input variable *ldmodel* from 1 to 3 and the procedure of the data improvement [2].

Evaluated proton-, deuteron-, triton-, ^{3}He-, and α-particle- production cross-sections were obtained for 278 stable target nuclei from ^{7}Li to ^{209}Bi at the incident neutron energy 96 MeV. The cross-sections are shown in Figs.6-10.

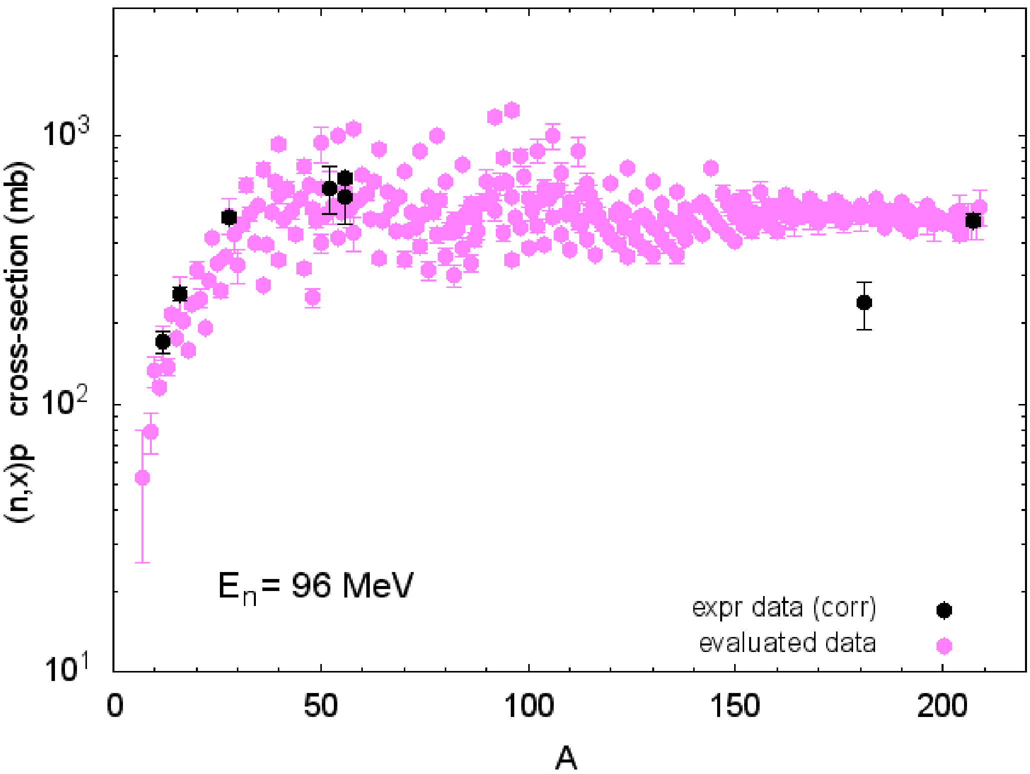

Fig.6 Evaluated proton production cross-sections for stable target nuclei from ^{7}Li to ^{209}Bi at the incident neutron energy 96 MeV

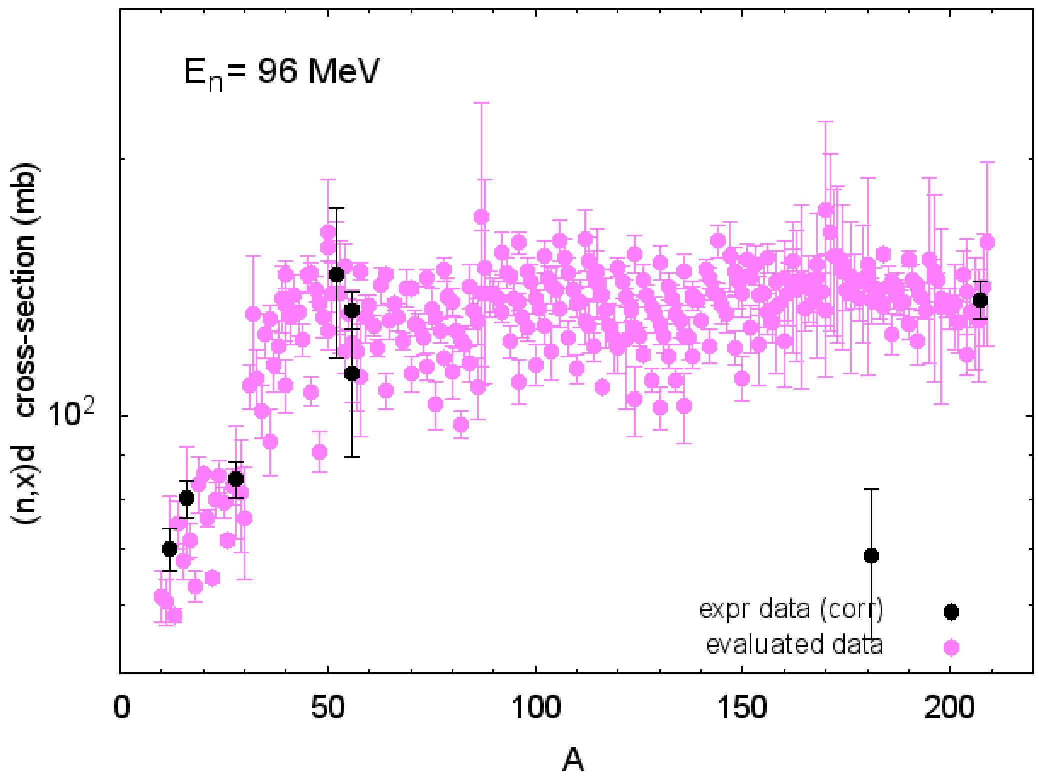

Fig.7 Evaluated deuteron production cross-sections for stable target nuclei from ^{7}Li to ^{209}Bi at the incident neutron energy 96 MeV

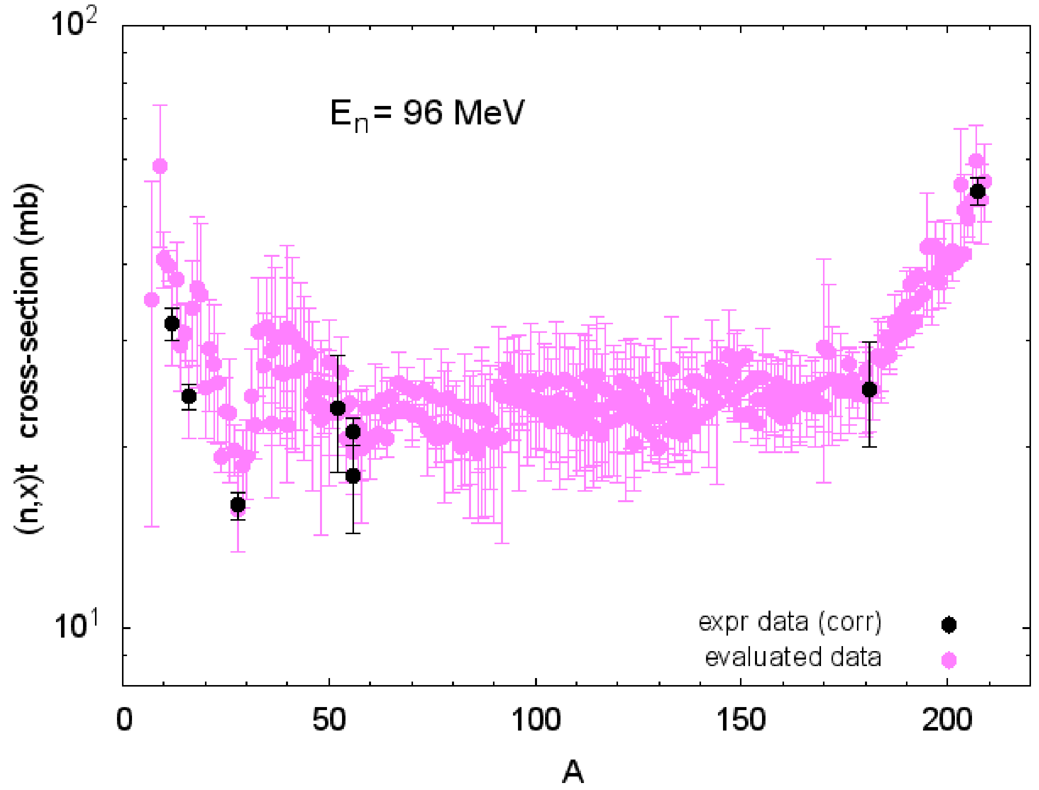

Fig.8 Evaluated triton production cross-sections for stable target nuclei from ^{7}Li to ^{209}Bi at the incident neutron energy 96 MeV

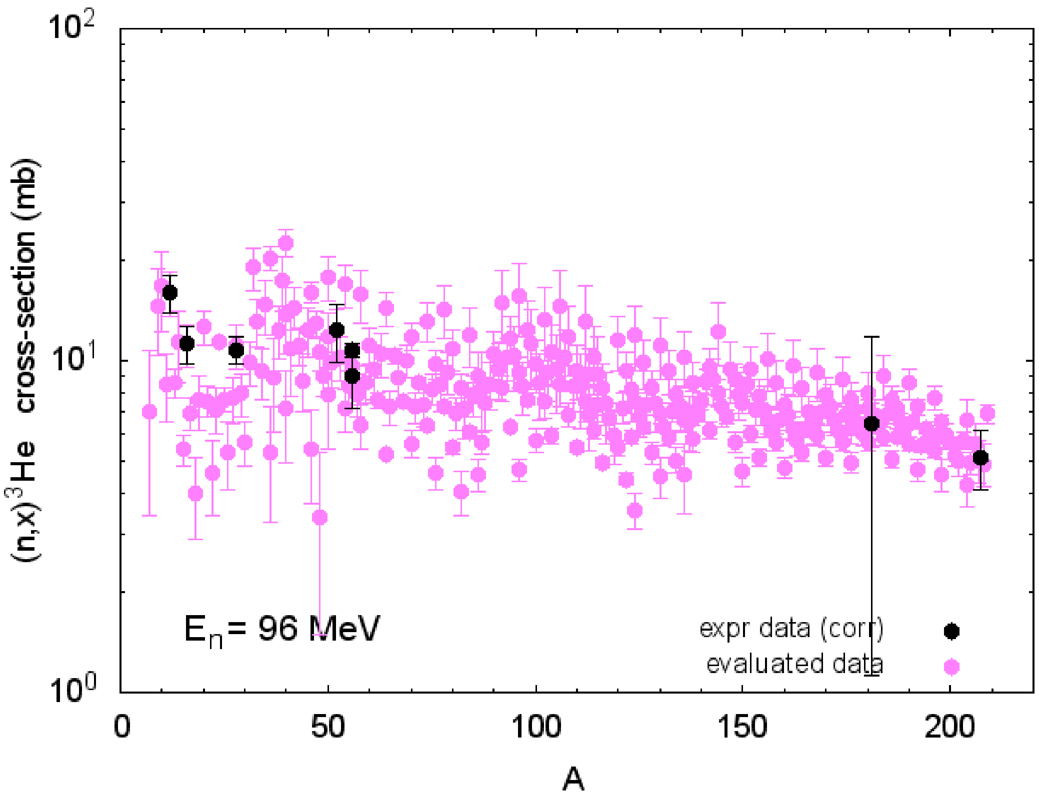

Fig.9 Evaluated ^{3}He production cross-sections for stable target nuclei from ^{7}Li to ^{209}Bi at the incident neutron energy 96 MeV

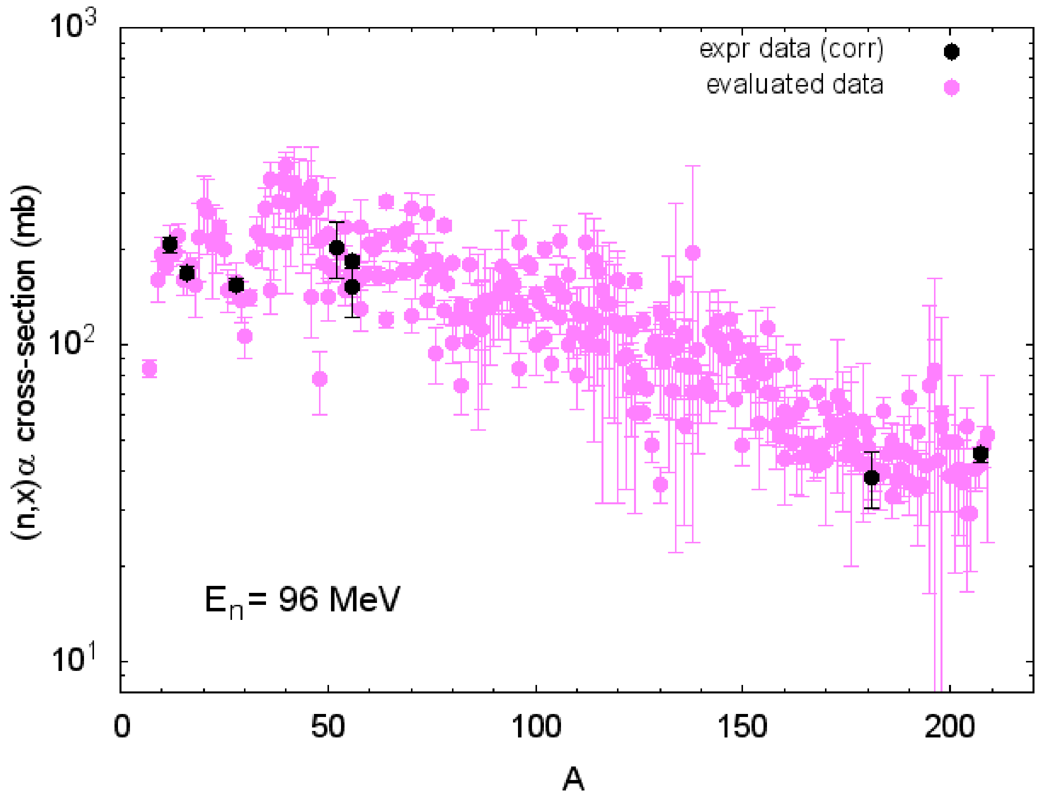

Fig.10 Evaluated α-particle production cross-sections for stable target nuclei from ^{7}Li to ^{209}Bi at the incident neutron energy 96 MeV

Obtained cross-sections were applied as the reference data for the evaluation of gas production cross-sections including the correction of theoretical curves at neutron energies up to 200 MeV.

Examples of the use of obtained cross-sections for improvement of the data are shown in Fig.11.

4. Use of nuclear data files and results of model calculations

4.1 Neutron energies above 20 MeV

Data from ENDF/B-VII.1, JEFF-3.2, and TENDL-2014 were applied for subsequent corrections using the estimated cross-sections described in Section 3. In the case of large differences between the shapes of energy dependence of cross-sections from different libraries, reference calculations were carried out using ALICE/ASH and TALYS codes. Calculations were also used to extrapolate the available data up to 200 MeV.

Similarly, data from libraries and results of calculations were used for evaluation of gas production cross sections together with the experimental data [3-26]. Examples are shown in the next Section.

4.2 Neutron energies below 20 MeV

In most cases, the JEFF-3.2 data for (n,p), (n,t), (n,d), and (n,α) reactions below 20 MeV were found to be correct and not requiring improvement. Some cross-sections were calculated, corrected or taken from other libraries. In the last case, the comparative analysis was performed for cross-sections from ENDF/B-VII.1, JENDL-4, JEFF-3.2, TENDL-2014, and EAF-2010 using available measured data [31].

5. Evaluated data

The improvement and correction of available evaluated data and new evaluations were performed using the BEKED package [30]. The details were discussed above.

Examples of evaluated components of gas production cross-sections are shown in Figs.12-42. Experimental values shown in Figures were corrected, if it was necessary for specific reactions. For example, data of Ref.[25] have been reduced by the estimated contribution of ^{3}He.

Obtained proton-, deuteron-, triton-, ^{3}He-, and α-particle- production cross-section are shown together with the data at 96 MeV (Section 3) and data from ENDF/B-VII.1, JEFF-3.2, and TENDL-2014 in Appendices A-D. The difference between evaluated data and estimated values at 96 MeV, observed in some cases, is due to the use of experimental data fro the evalaution, as for example for the reaction Fe(n,x)He, Fig.27 and for ^{56}Fe(n,x)α, Fig.28.

Obtained data are written in the ENDF format. Conventional MT-numbers 203, 204, 205, 206, and 207 were applied for the files with proton-, deuteron-, triton-, ^{3}He-, and α-particle production cross-sections, respectively.

6. Conclusion

Proton-, deuteron-, triton-, ^{3}He-, and α-particles- production cross-sections were obtained for 262 stable nuclides with atomic number from 12 to 83 at the energies of primary neutrons up to 200 MeV.

The data evaluation involved the analysis of available experimental data, the estimation of atomic mass dependence of cross-sections to improve final evaluated curves, the analysis of evaluated data from ENDF/B-VII.1, JENDL-4, JEFF-3.2, and TENDL-2014, nuclear model calculations, the improvement of existing evaluated data concerning the incorrect energy dependence, and statistical combination of experimental and theoretical data.

Final evaluated data were written in the ENDF format.

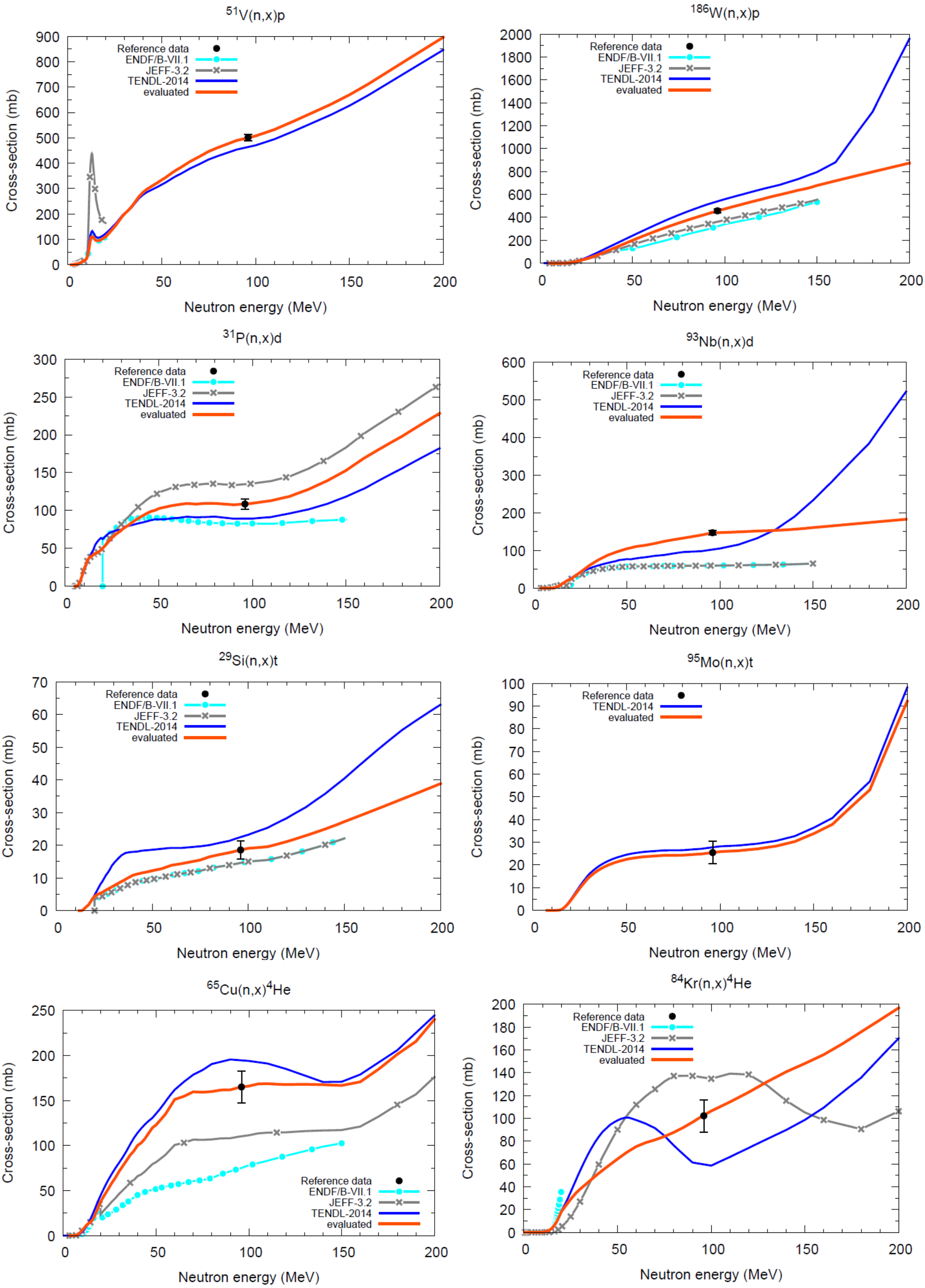

Fig.11 Examples of the use of evaluated data at 96 MeV (black circle) for the correction of components of gas production cross-sections.

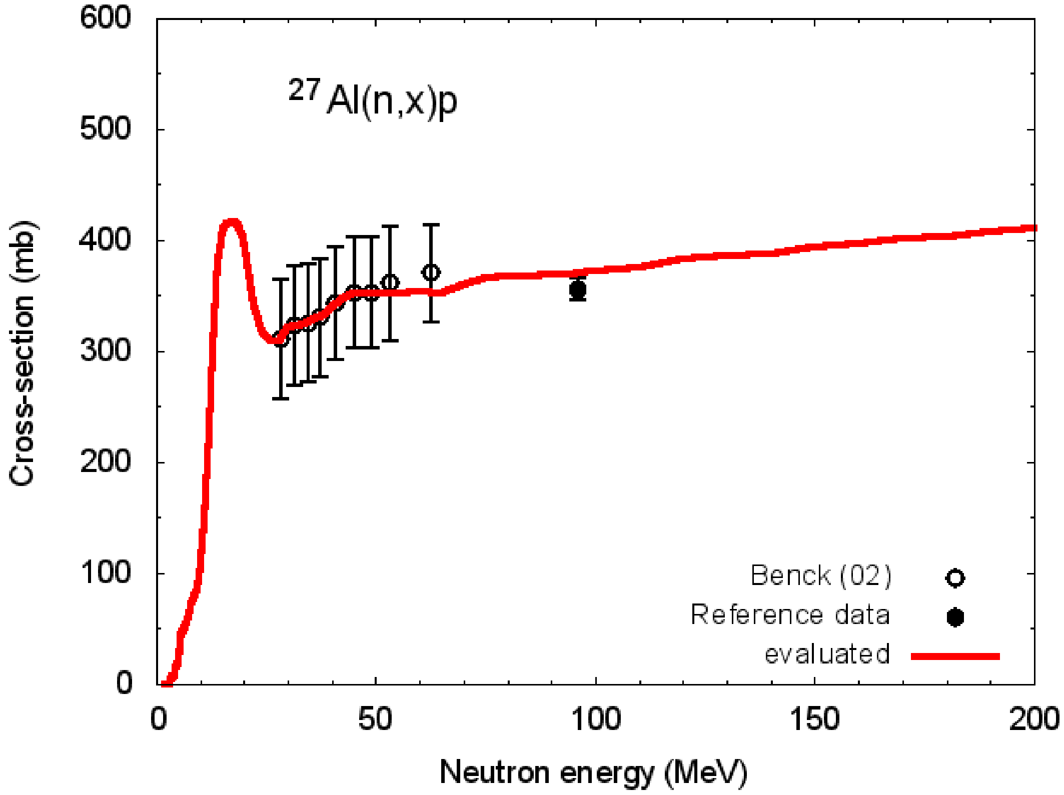

Fig.12 Evaluated proton production cross-section for ^{27}Al. Reference data are discussed in Section 3.

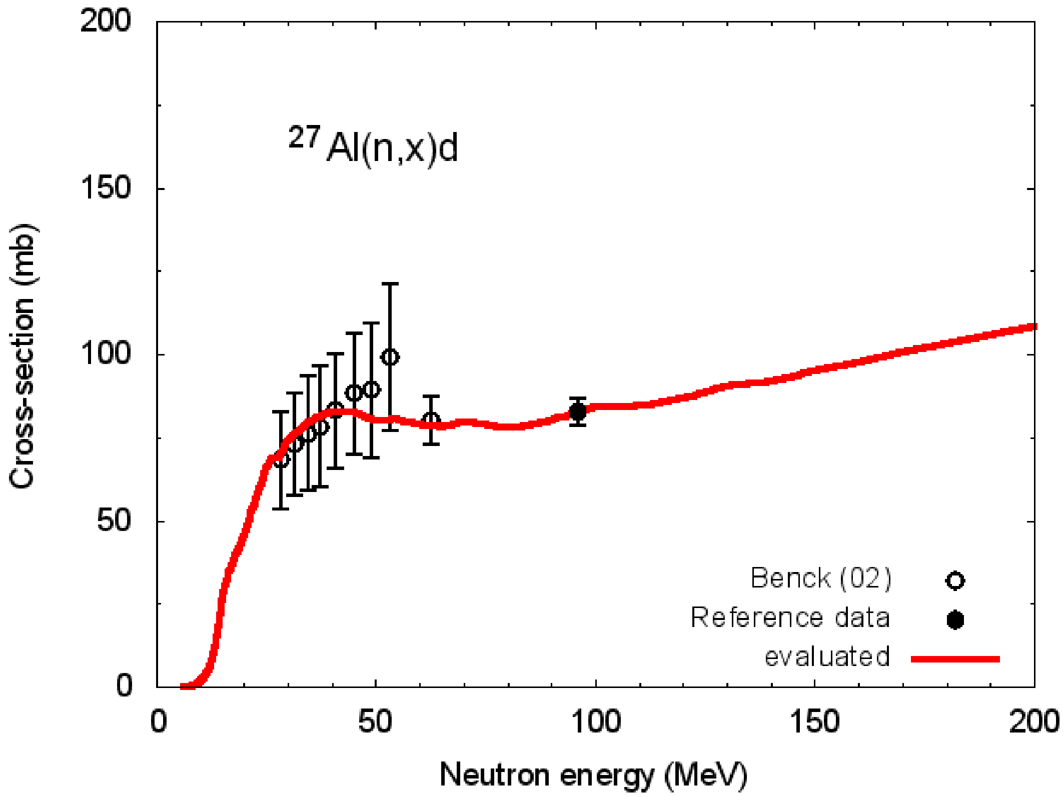

Fig.13 Evaluated deuteron production cross-section for ^{27}Al.

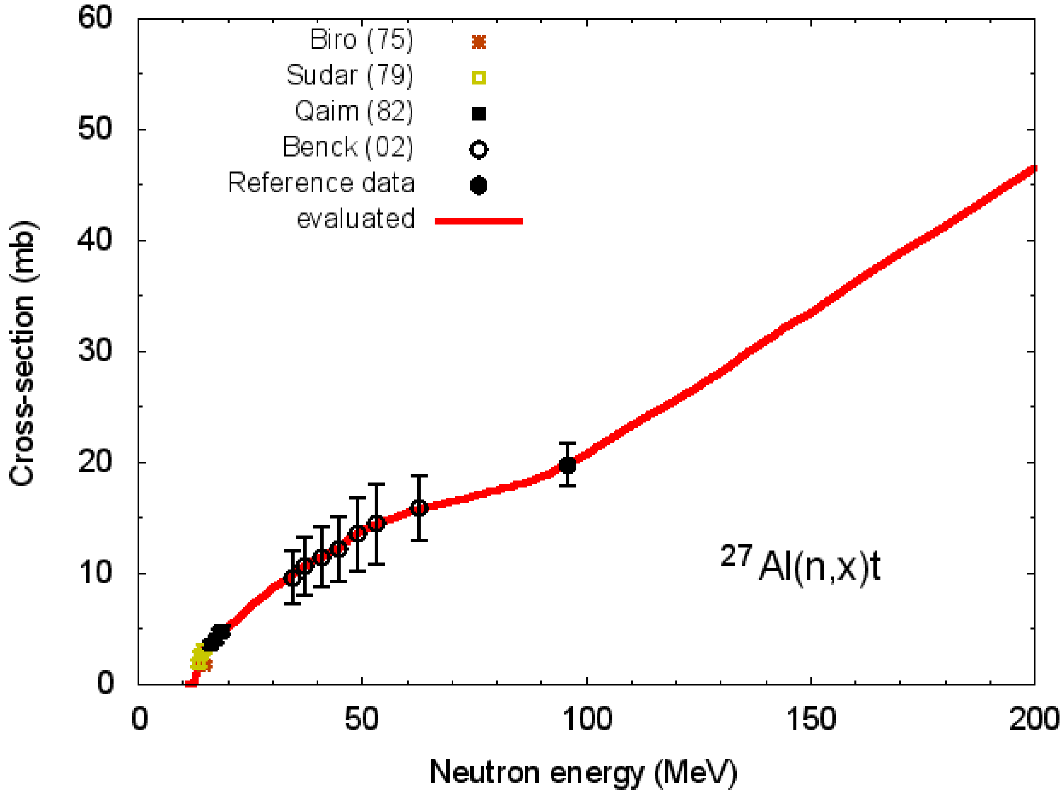

Fig.14 Evaluated triton production cross-section for ^{27}Al.

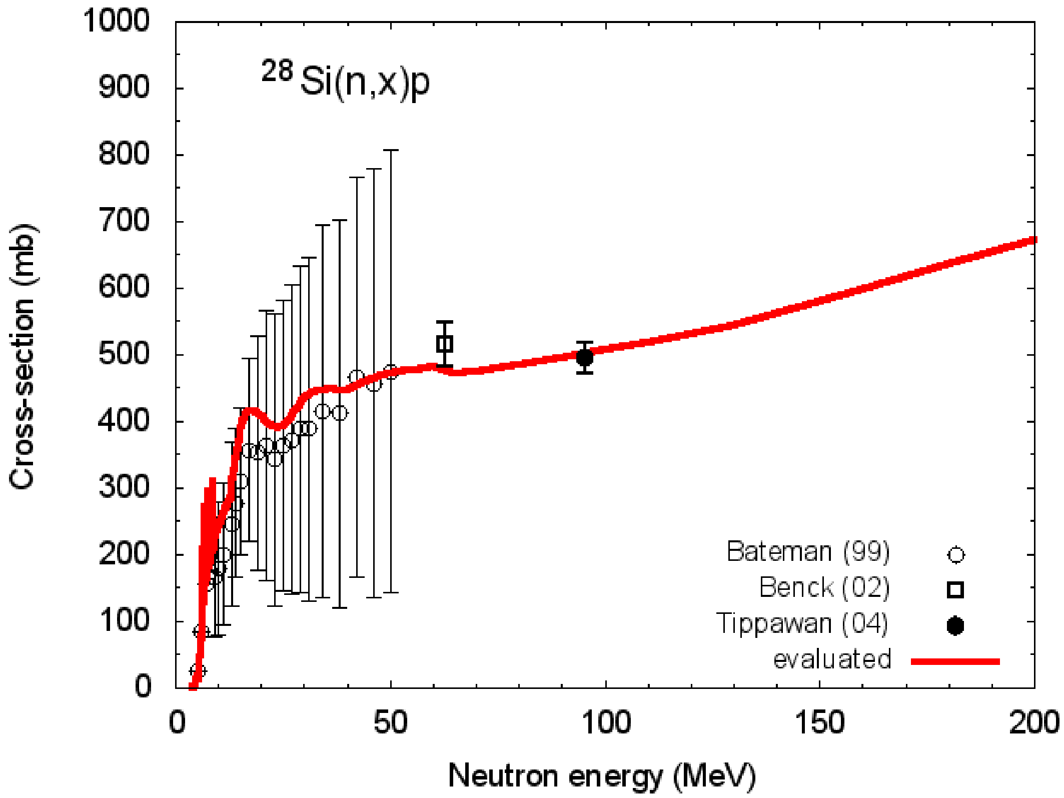

Fig.15 Evaluated proton production cross-section for ^{28}Si.

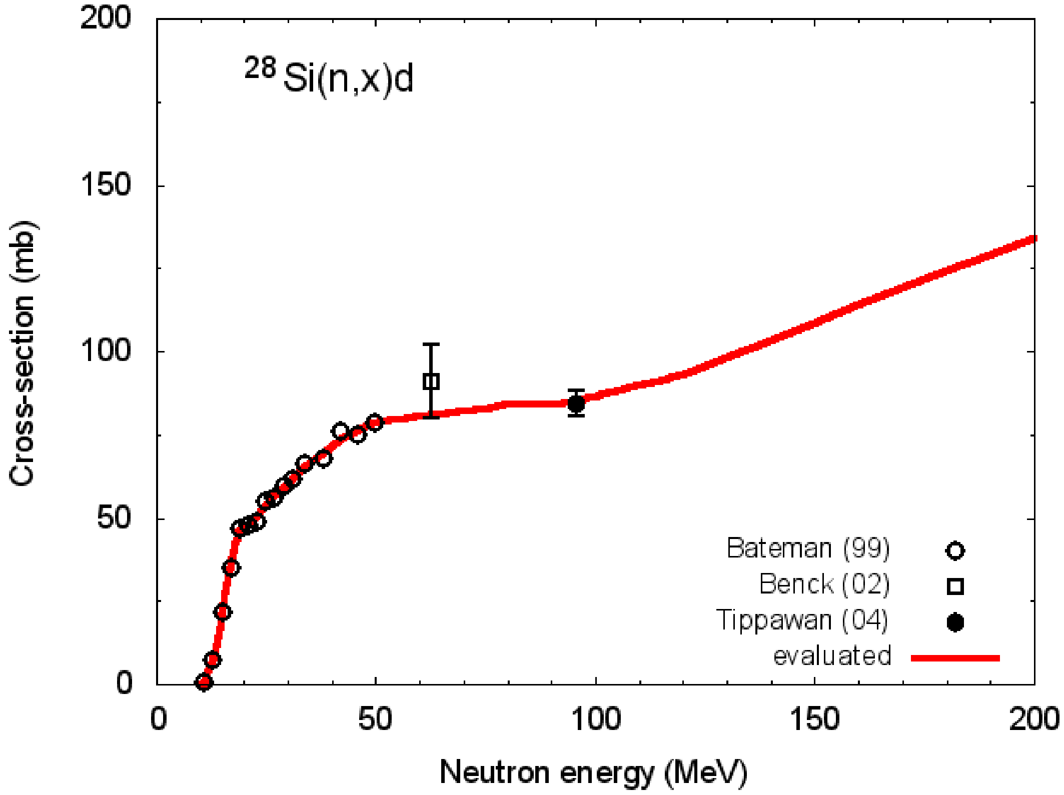

Fig.16 Evaluated deuteron production cross-section for ^{28}Si.

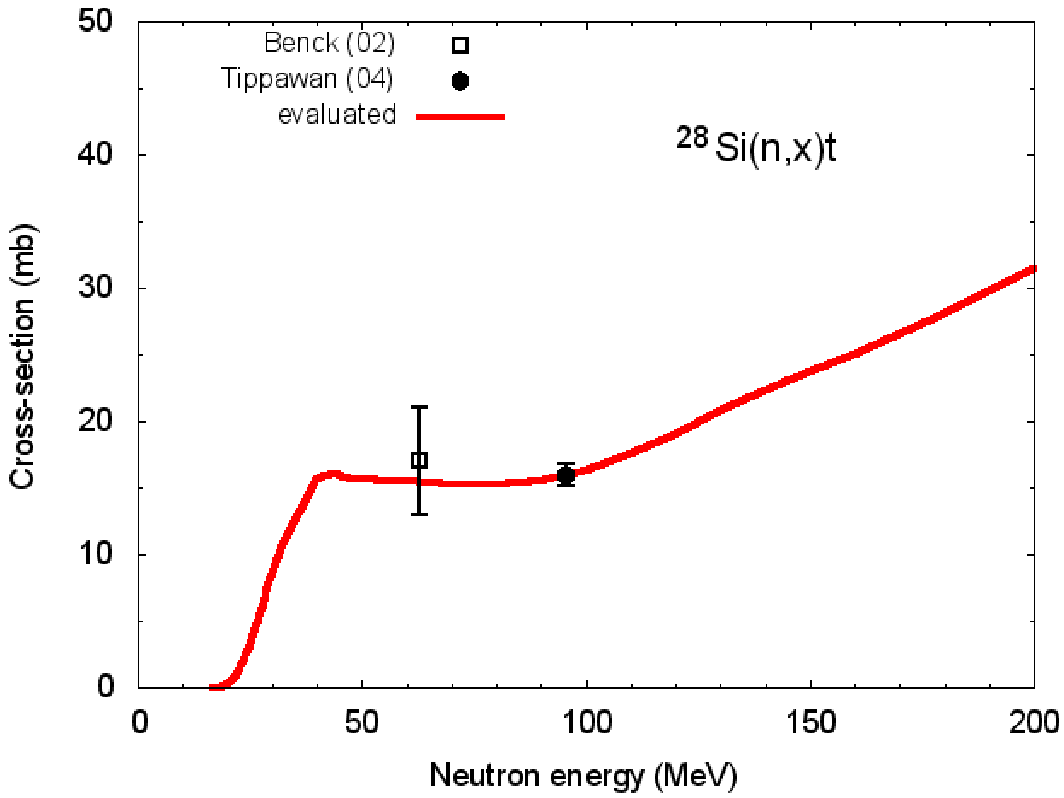

Fig.17 Evaluated triton production cross-section for ^{28}Si.

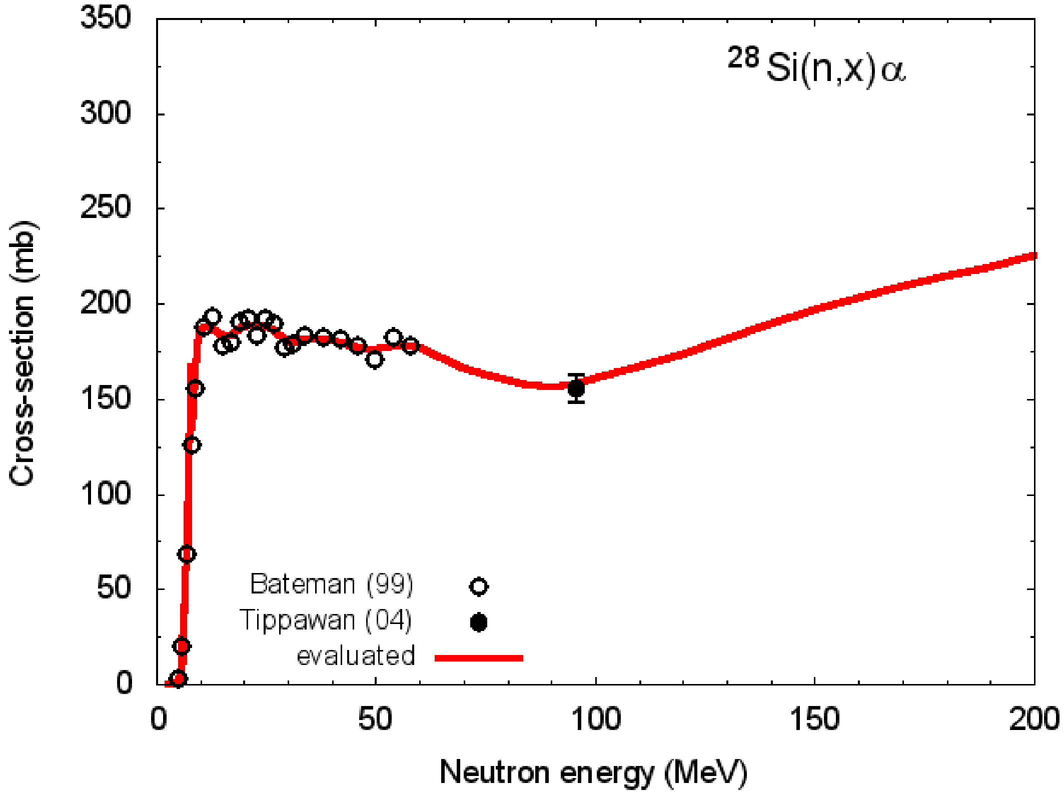

Fig.18 Evaluated α-particle production cross-section for ^{28}Si.

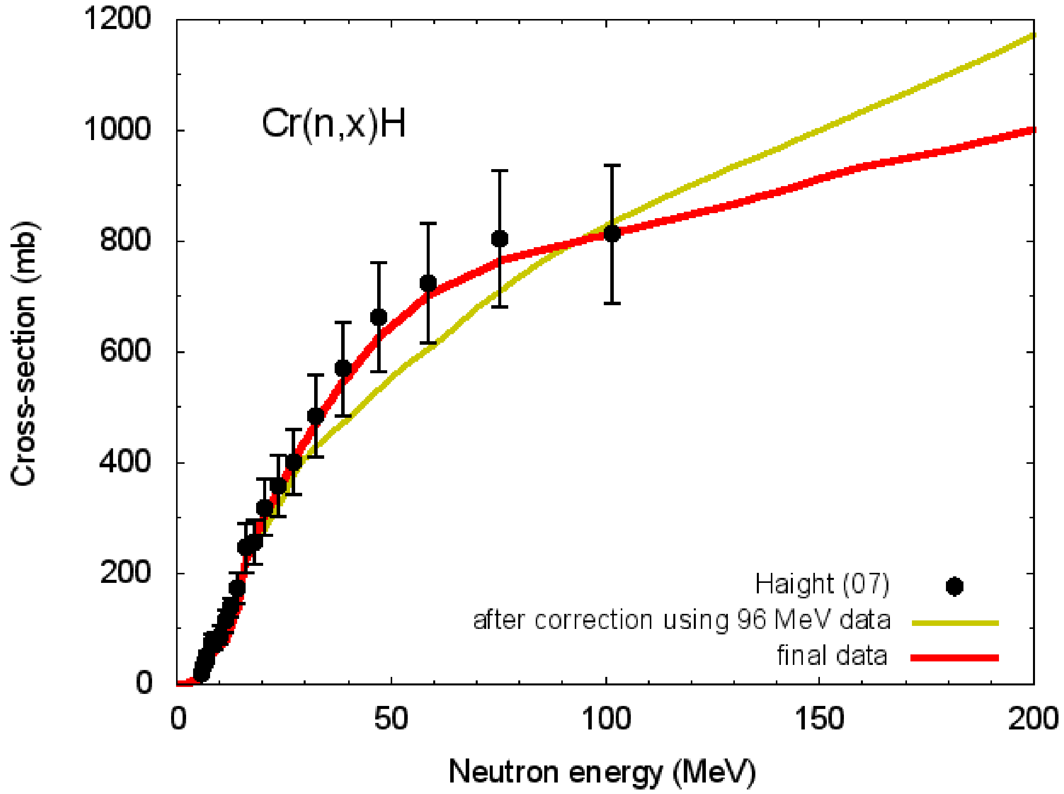

Fig.19 Evaluated hydrogen production cross-section (sum of proton-, deuteron-, and triton-production cross-sections) for chromium.

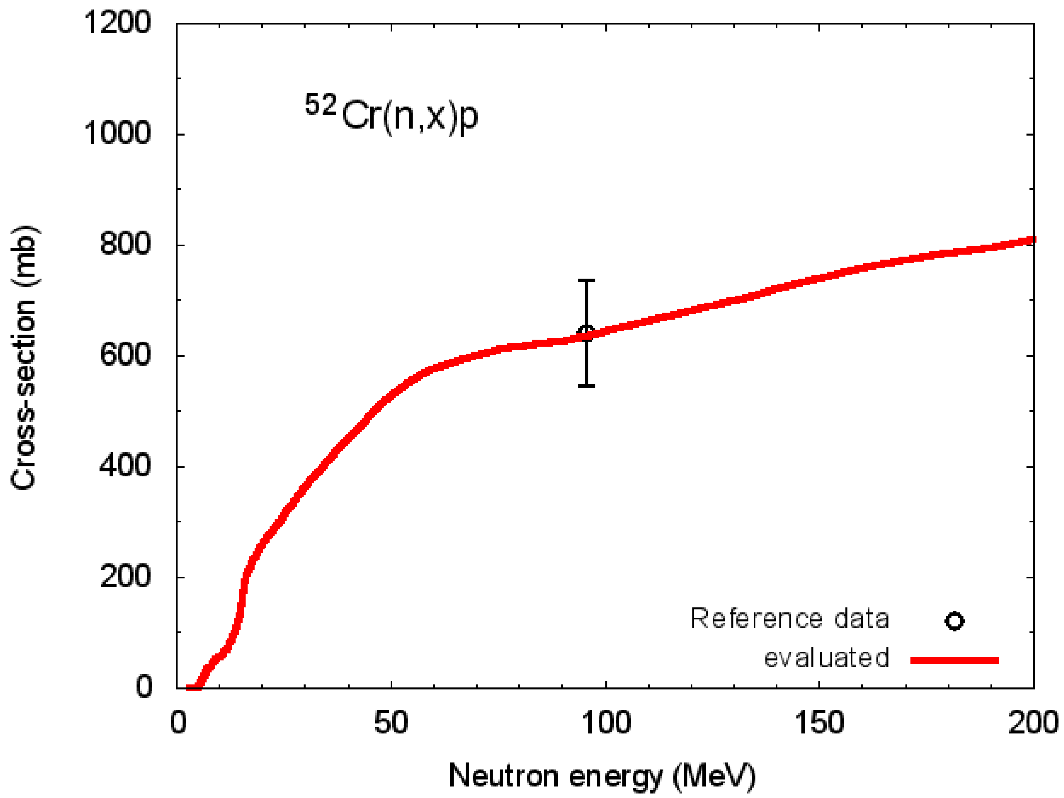

Fig.20 Evaluated proton production cross-section for ^{52}Cr.

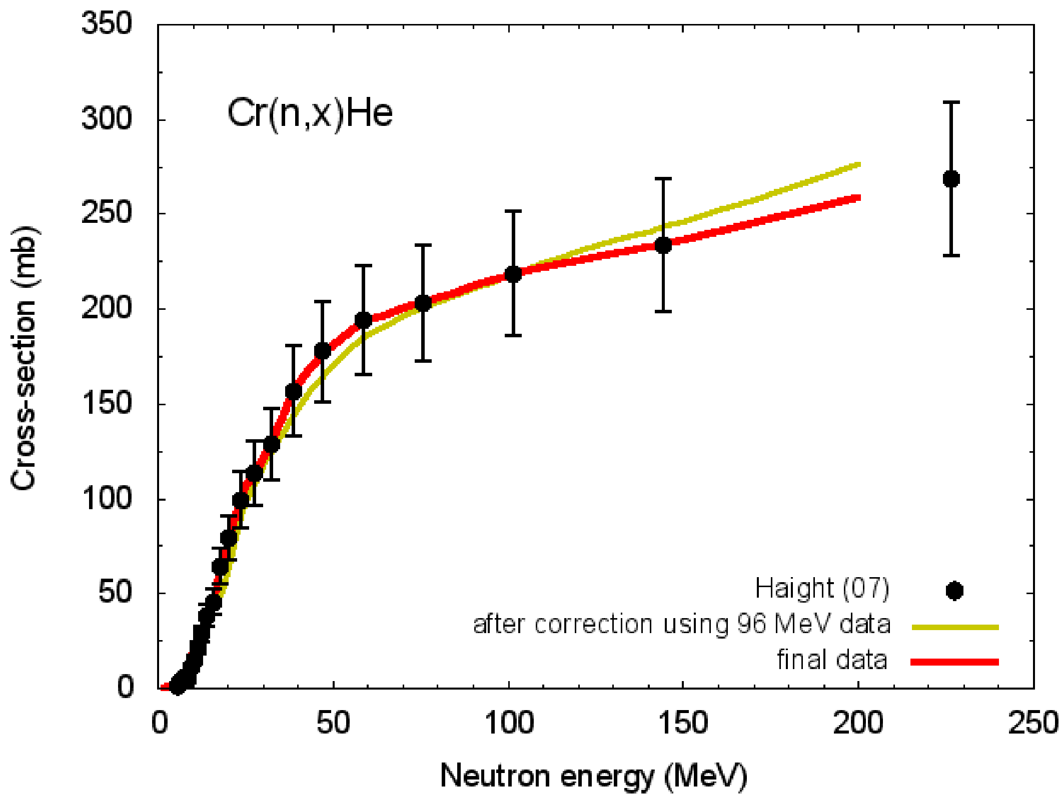

Fig.21 Evaluated helium production cross-section (sum of ^{3}He- and α-particle- production cross-sections) for chromium.

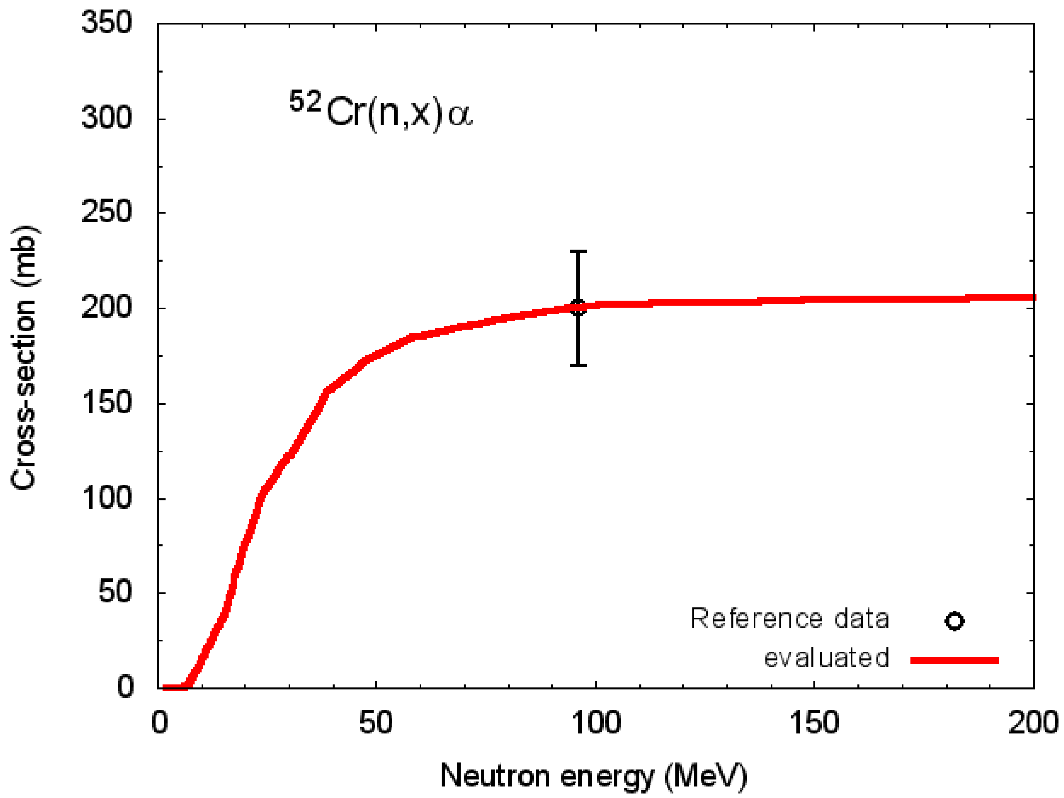

Fig.22 Evaluated α-particle production cross-section for ^{52}Cr.

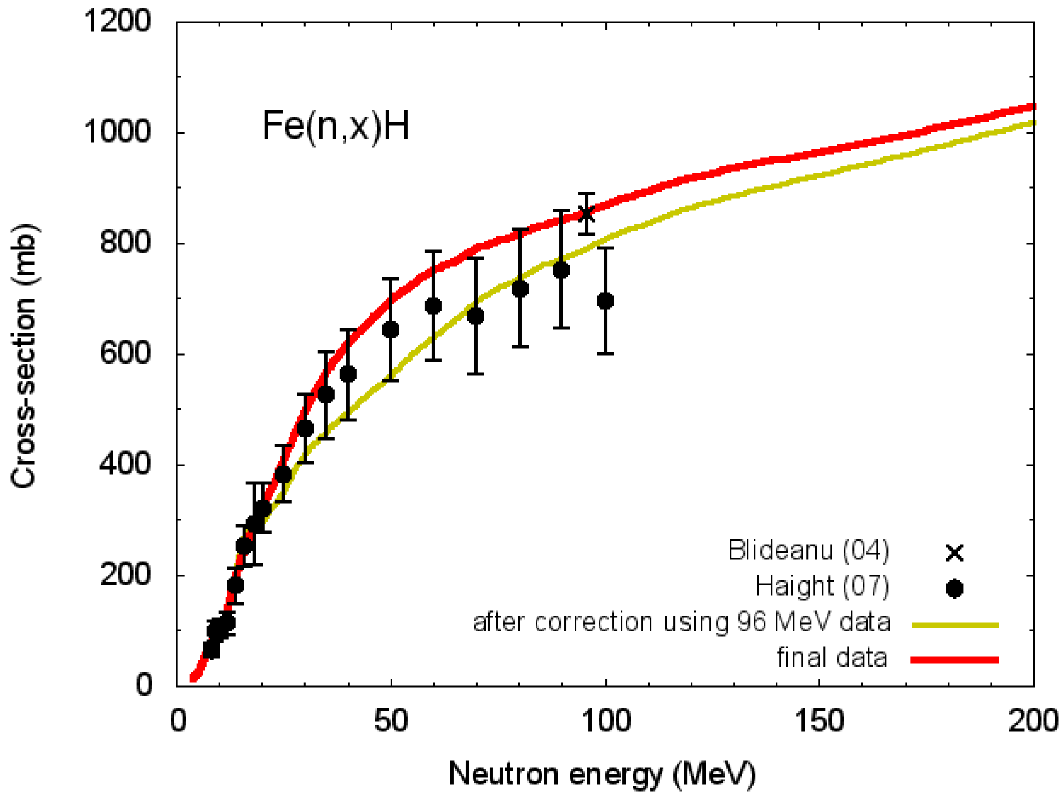

Fig.23 Evaluated hydrogen production cross-section (sum of proton-, deuteron-, and triton-production cross-sections) for iron.

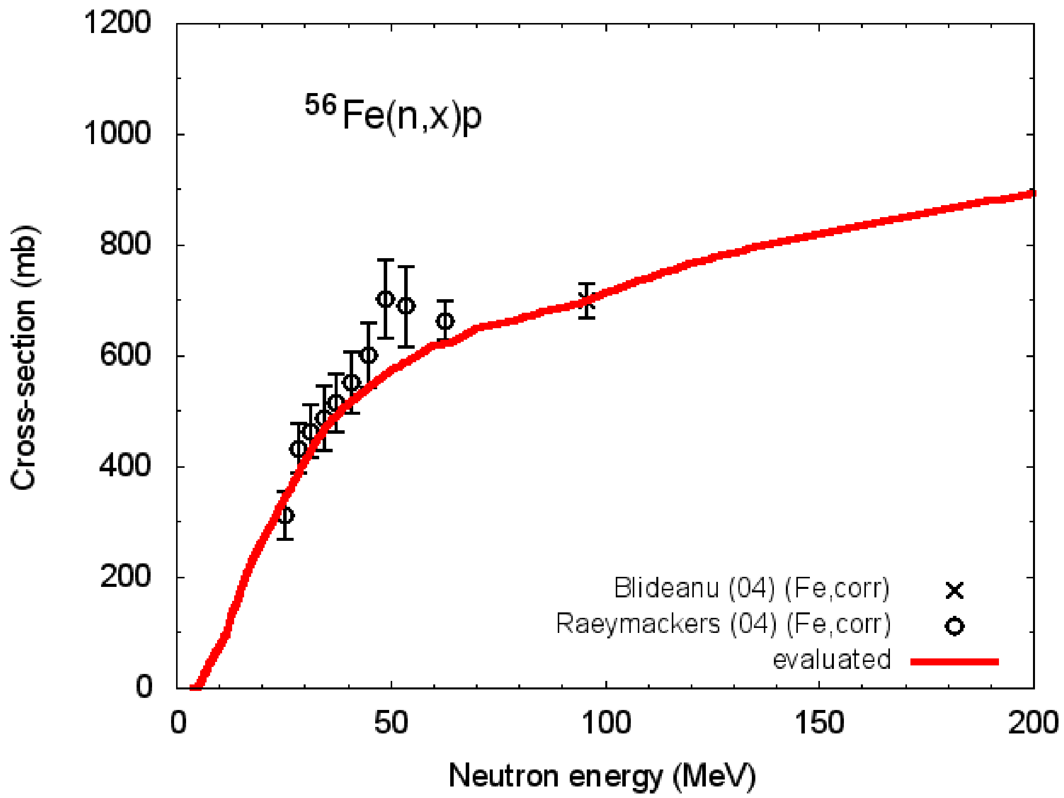

Fig.24 Evaluated proton production cross-section for ^{56}Fe.

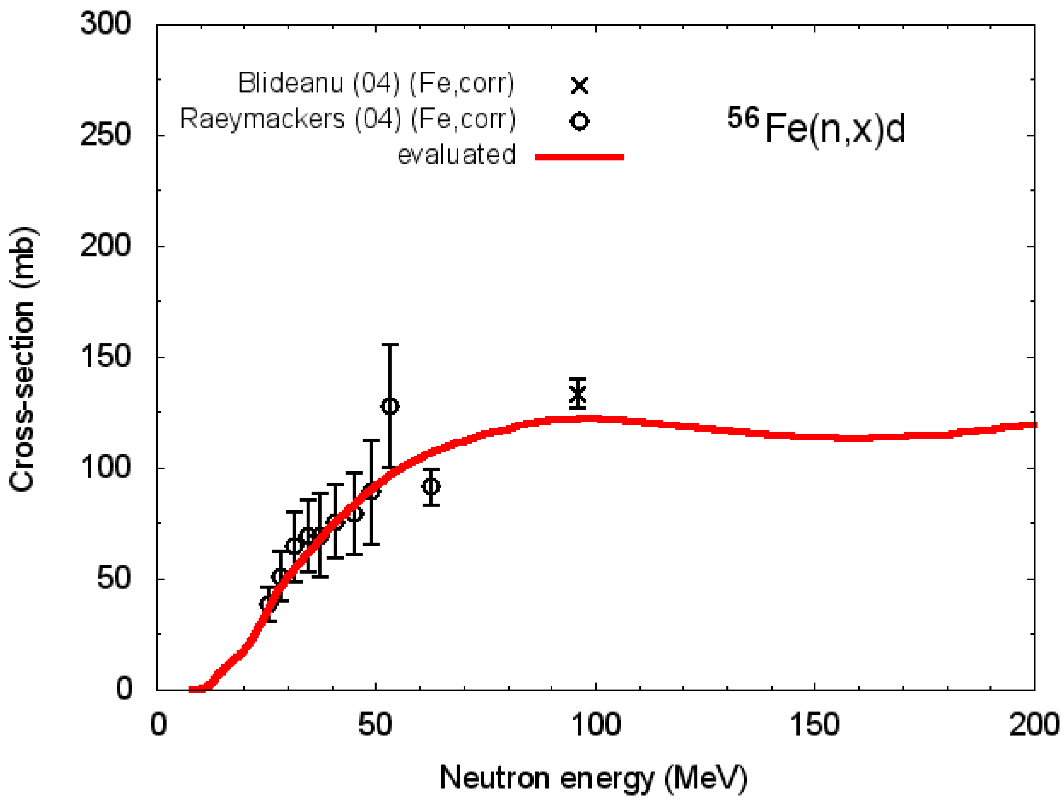

Fig.25 Evaluated deuteron production cross-section for ^{56}Fe.

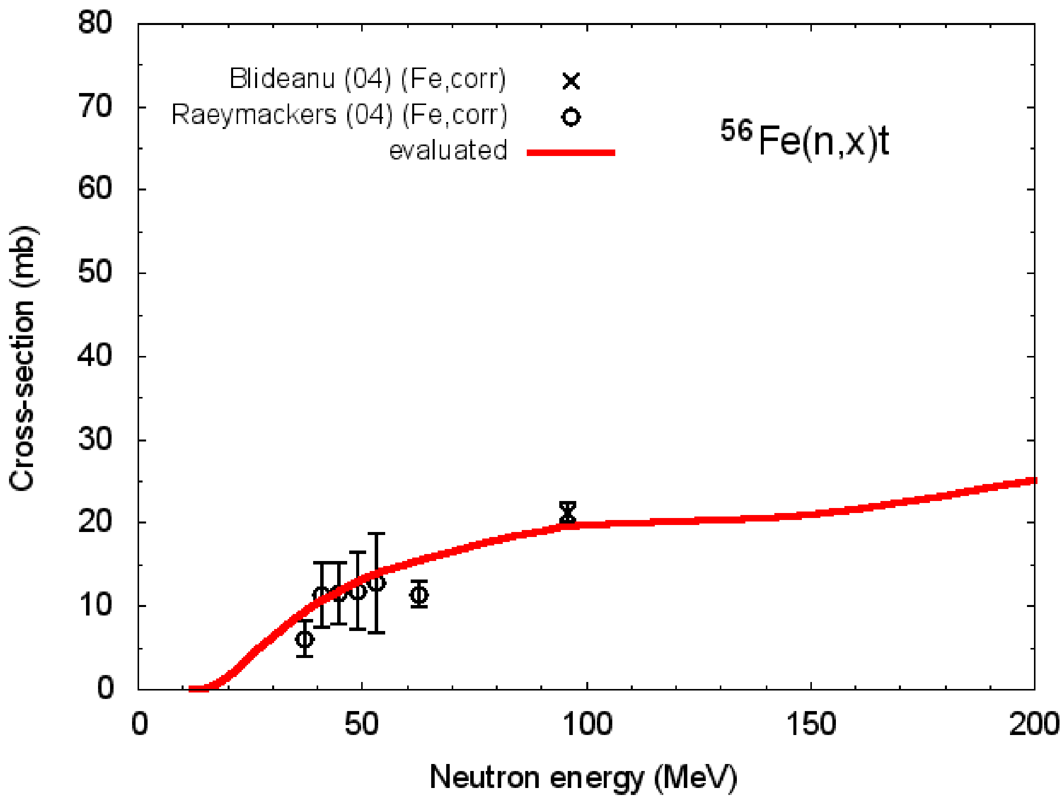

Fig.26 Evaluated triton production cross-section for ^{56}Fe.

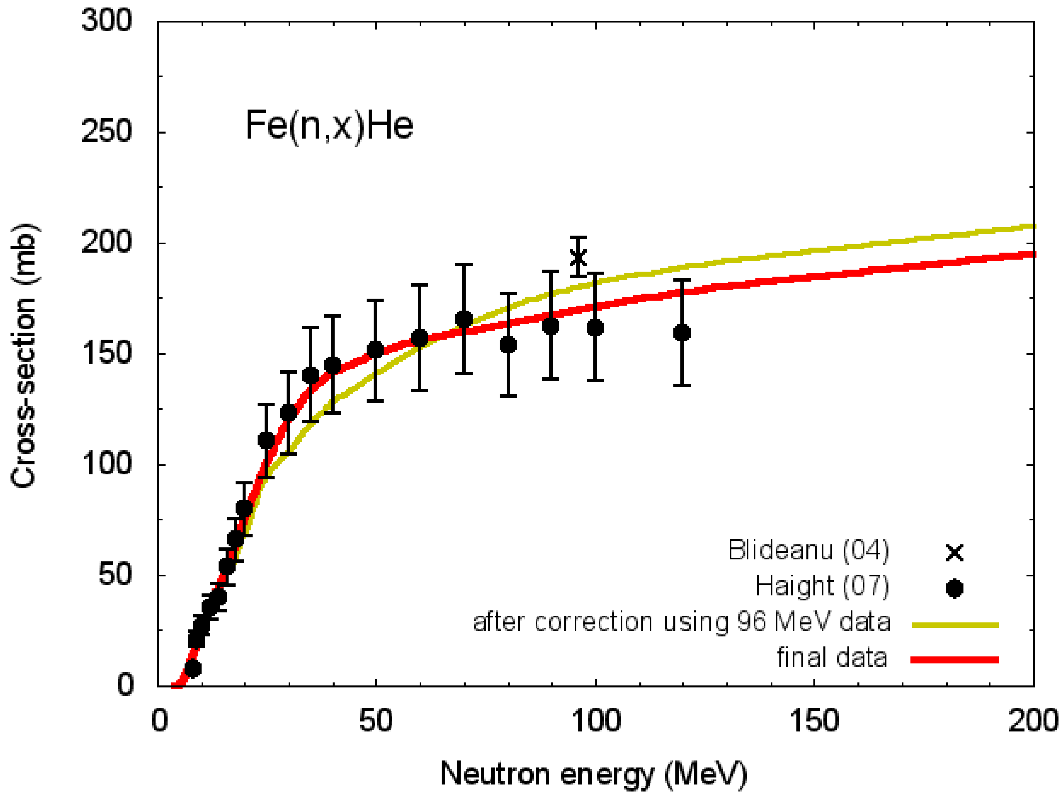

Fig.27 Evaluated helium production cross-section (sum of ^{3}He- and α-particle- production cross-sections) for iron.

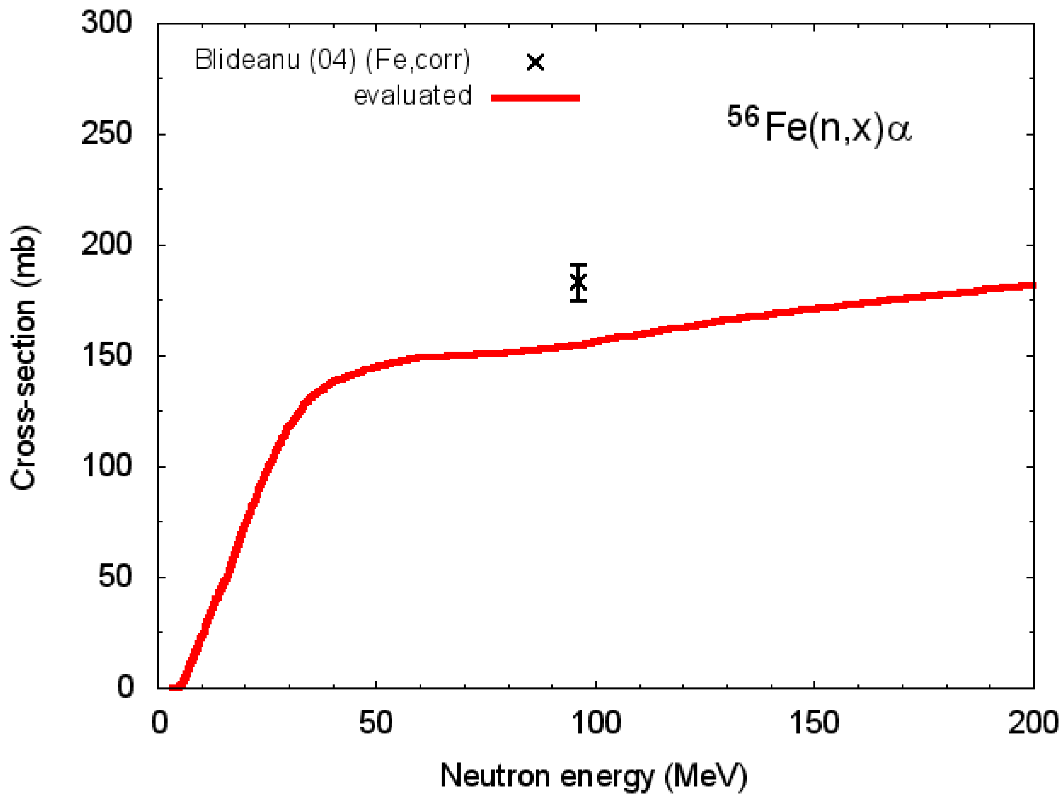

Fig.28 Evaluated α-particle production cross-section for ^{56}Fe.

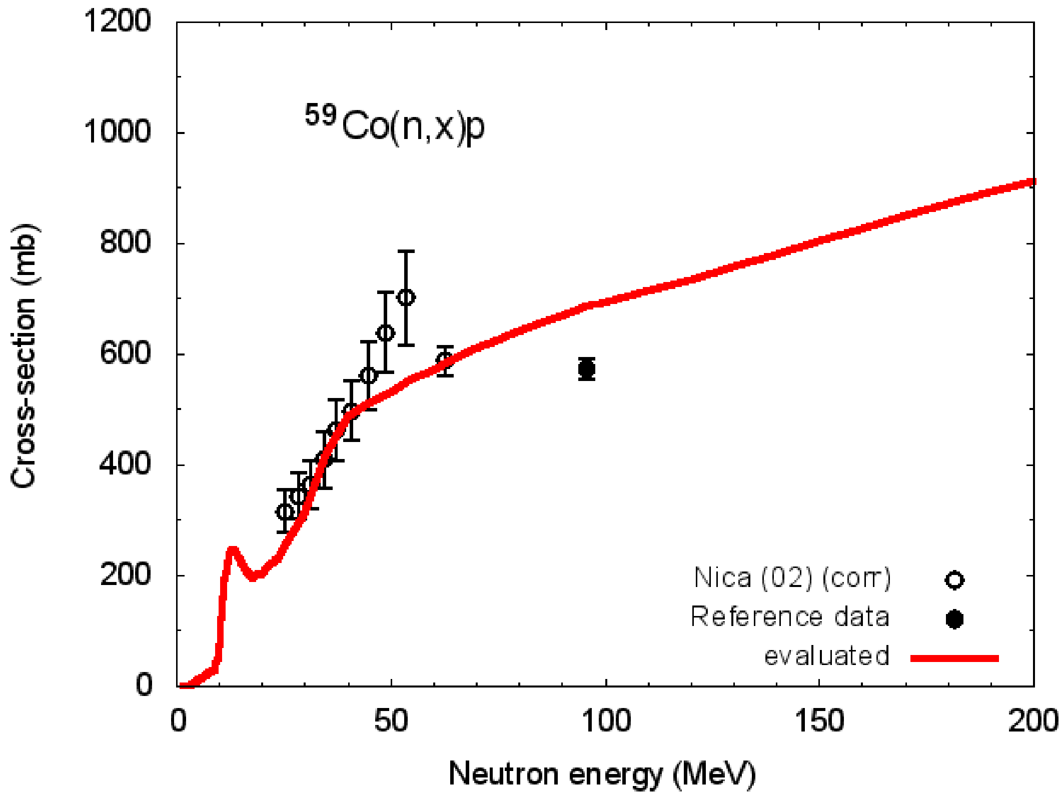

Fig.29 Evaluated proton production cross-section for ^{59}Co.

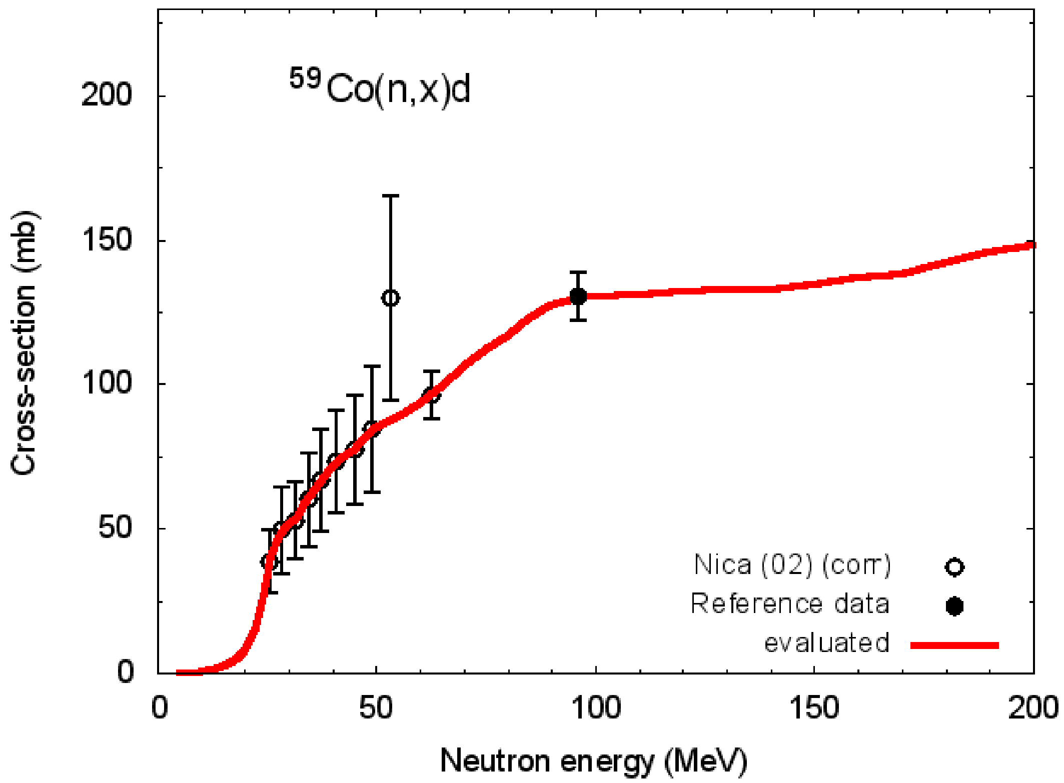

Fig.30 Evaluated deuteron production cross-section for ^{59}Co.

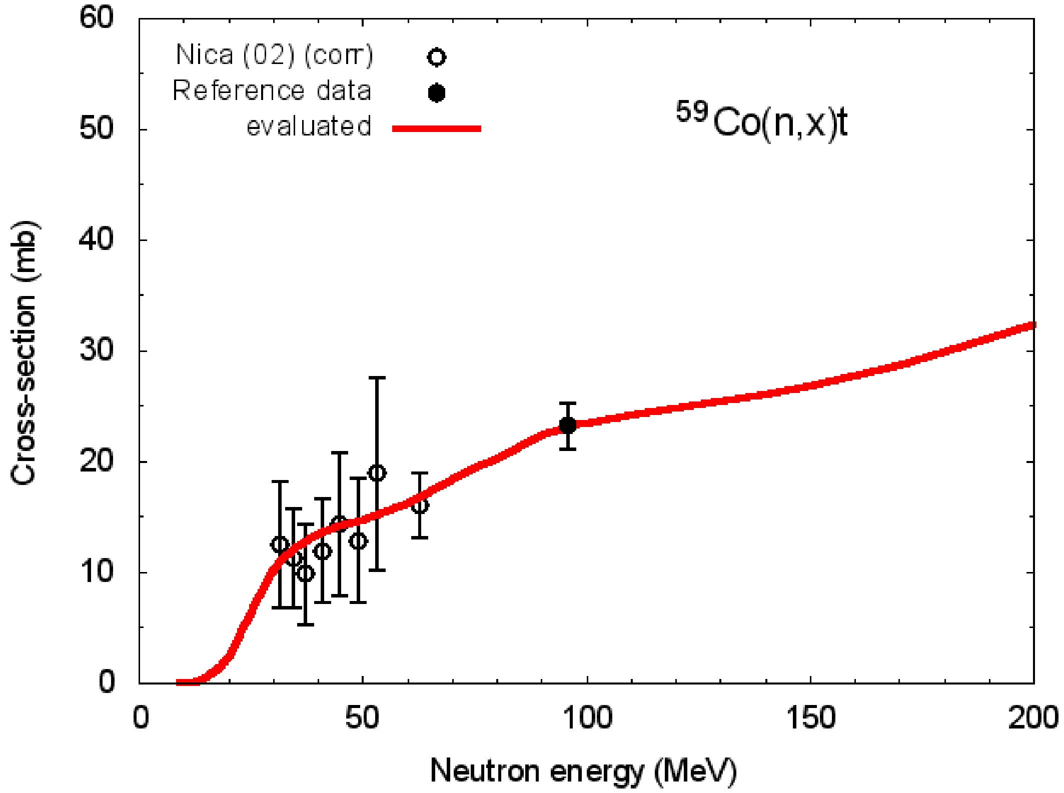

Fig.31 Evaluated triton production cross-section for ^{59}Co.

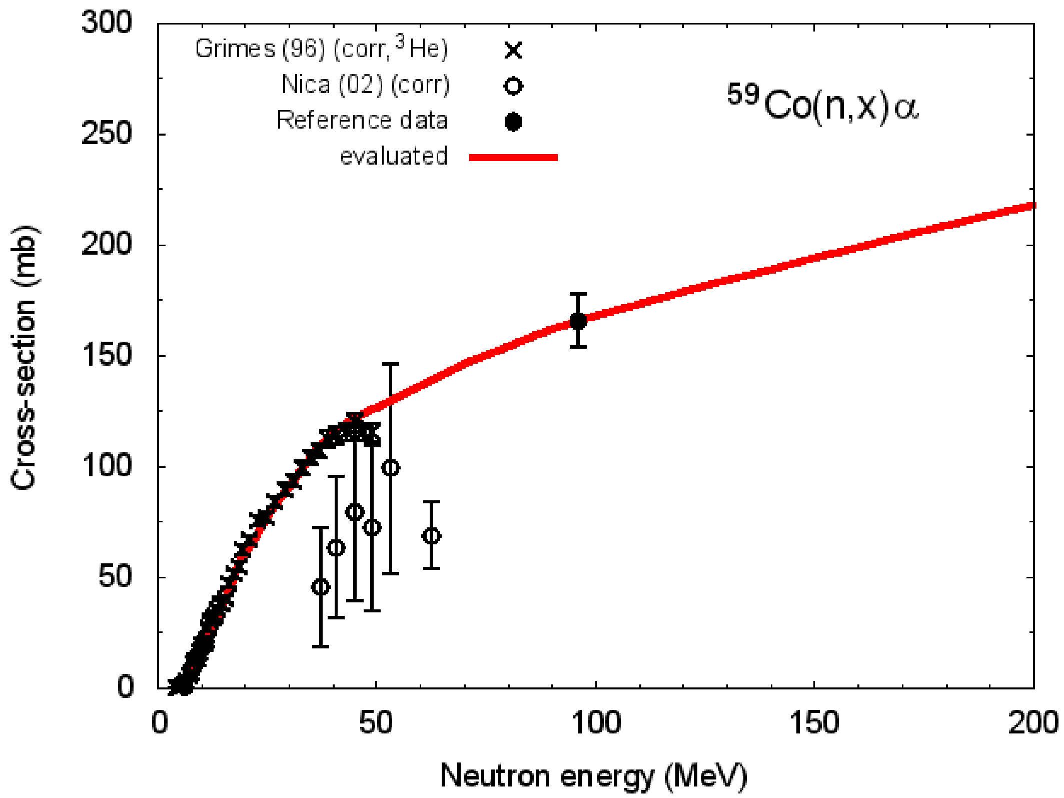

Fig.32 Evaluated α-particle production cross-section for ^{59}Co.

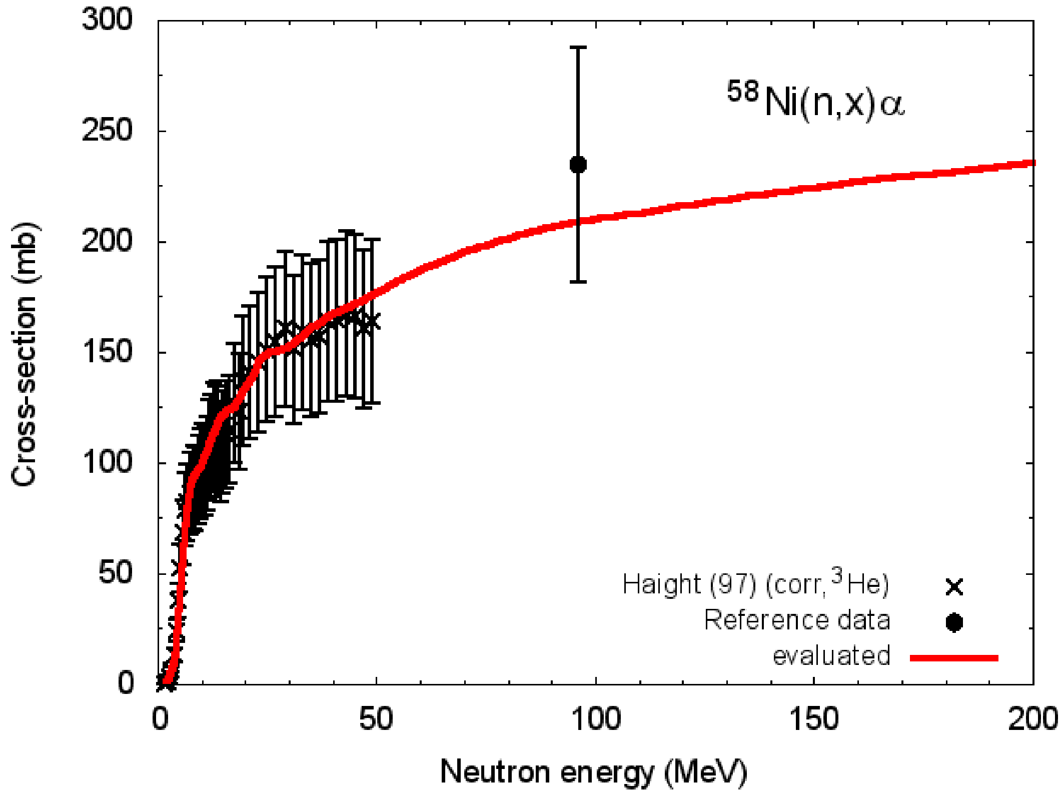

Fig.33 Evaluated α-particle production cross-section for ^{58}Ni.

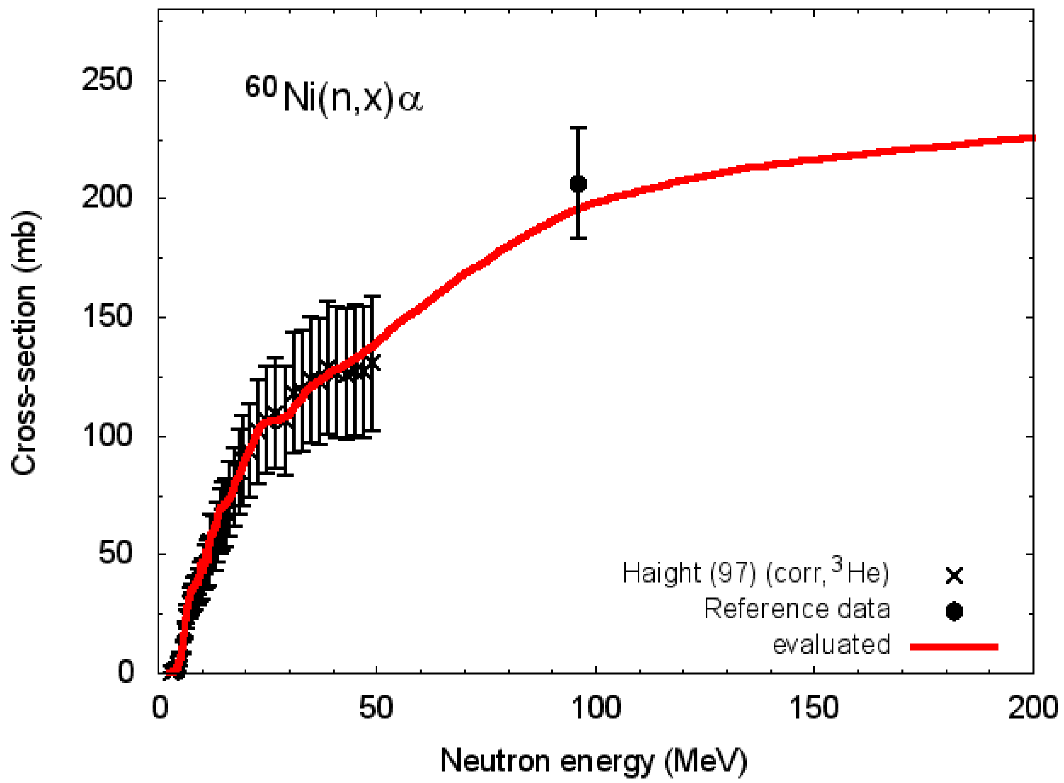

Fig.34 Evaluated α-particle production cross-section for ^{60}Ni.

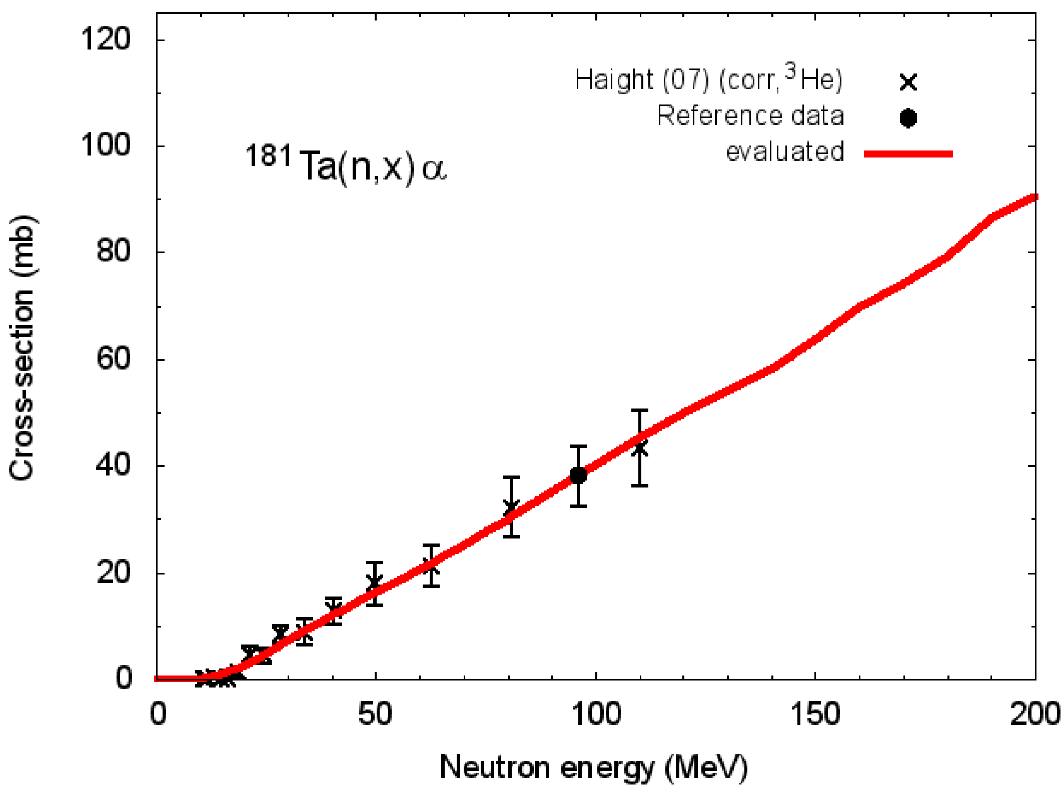

Fig.35 Evaluated α-particle production cross-section for ^{181}Ta.

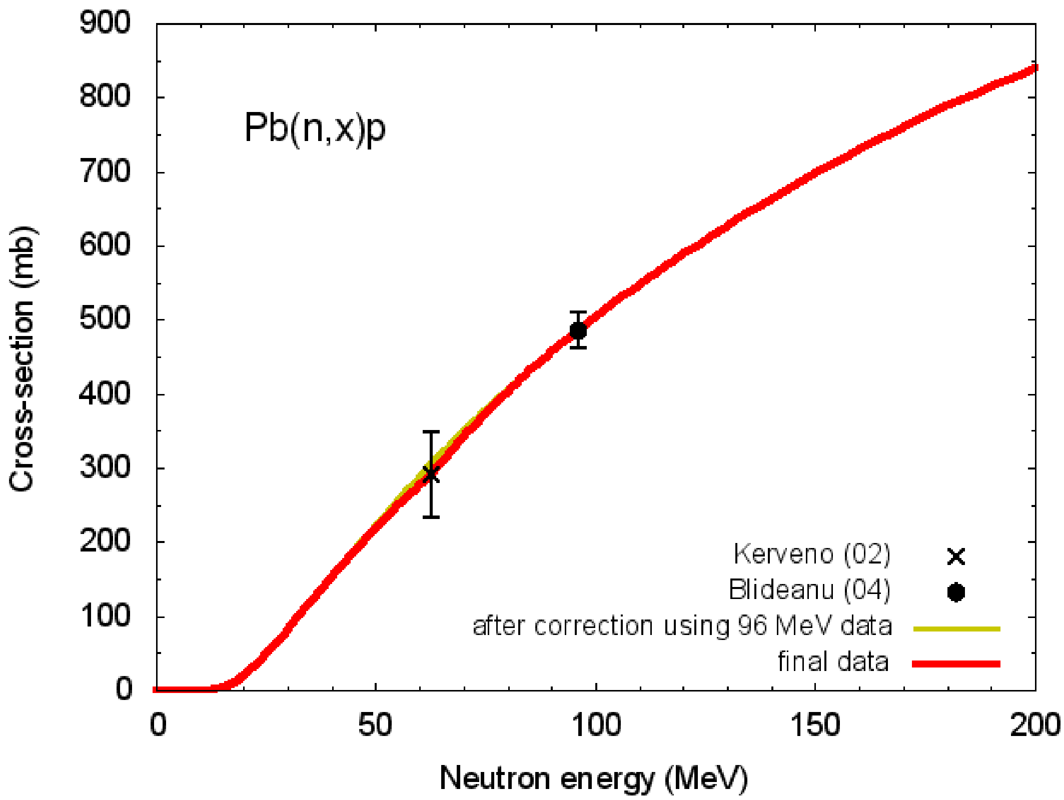

Fig.36 Evaluated proton production cross-section for lead.

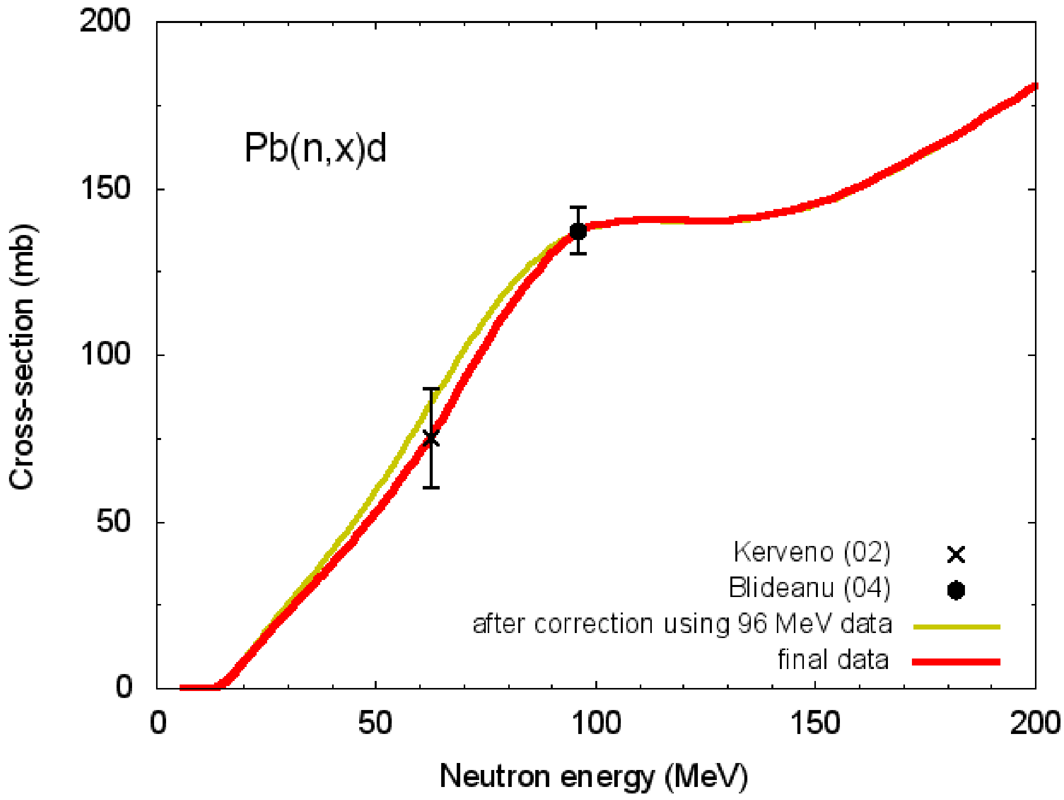

Fig.37 Evaluated deuteron production cross-section for lead.

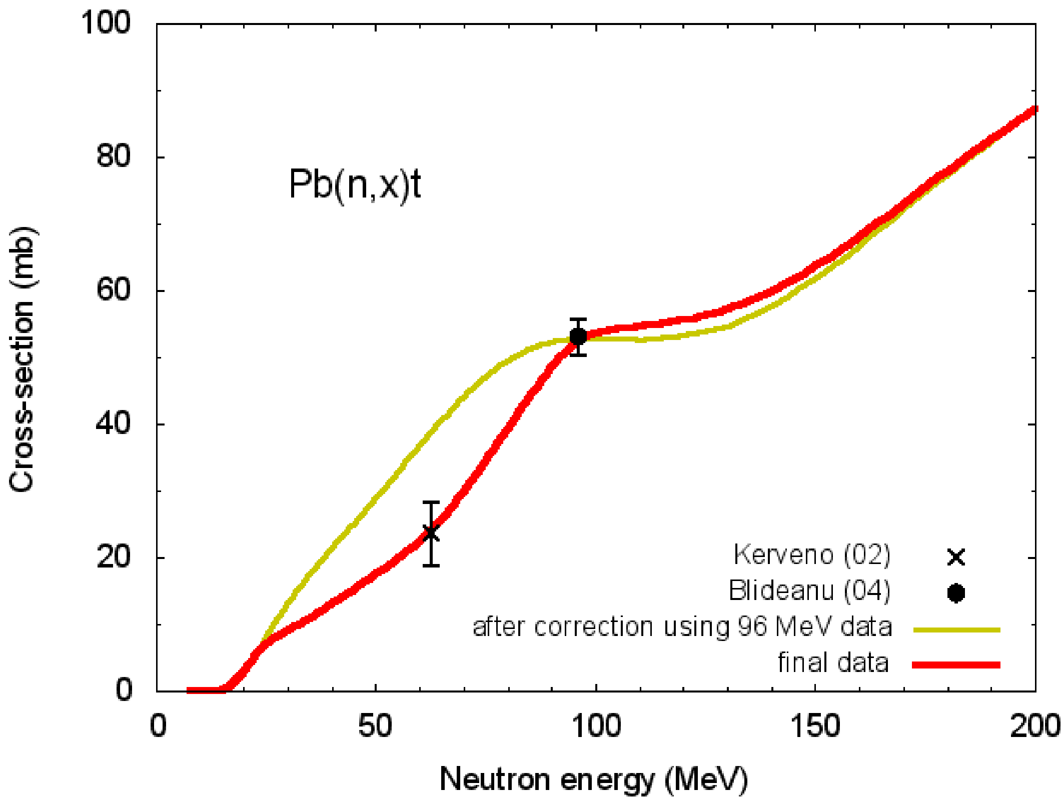

Fig.38 Evaluated triton production cross-section for lead.

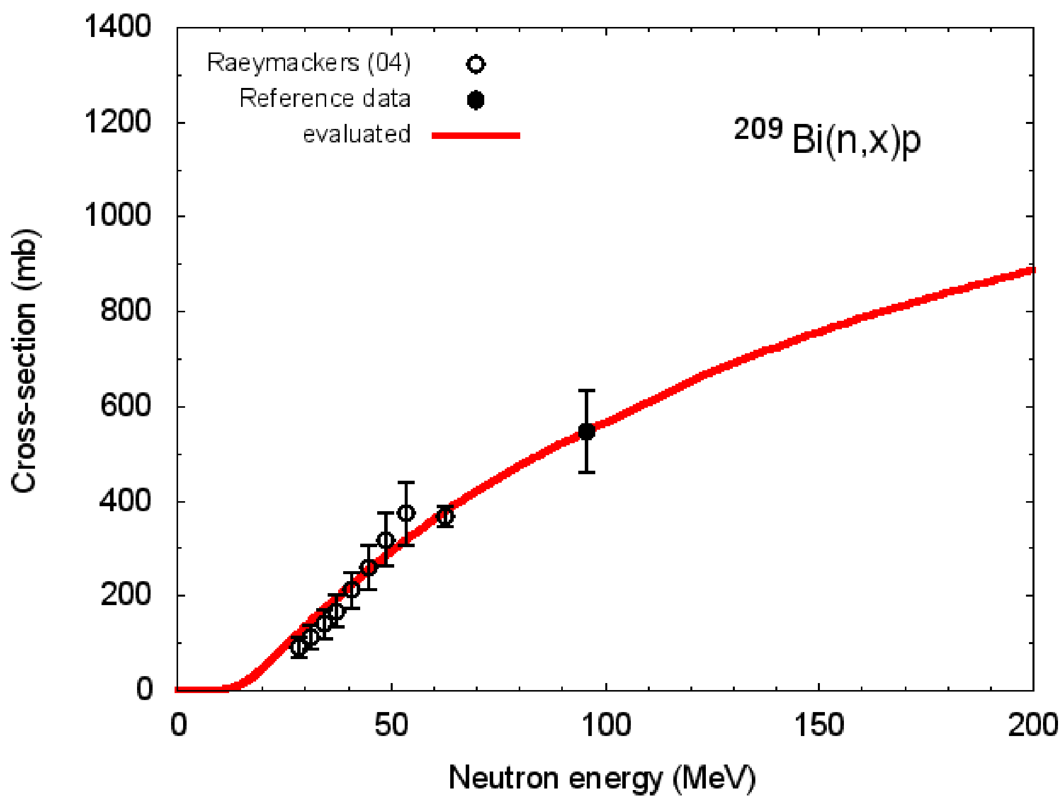

Fig.39 Evaluated proton production cross-section for ^{209}Bi.

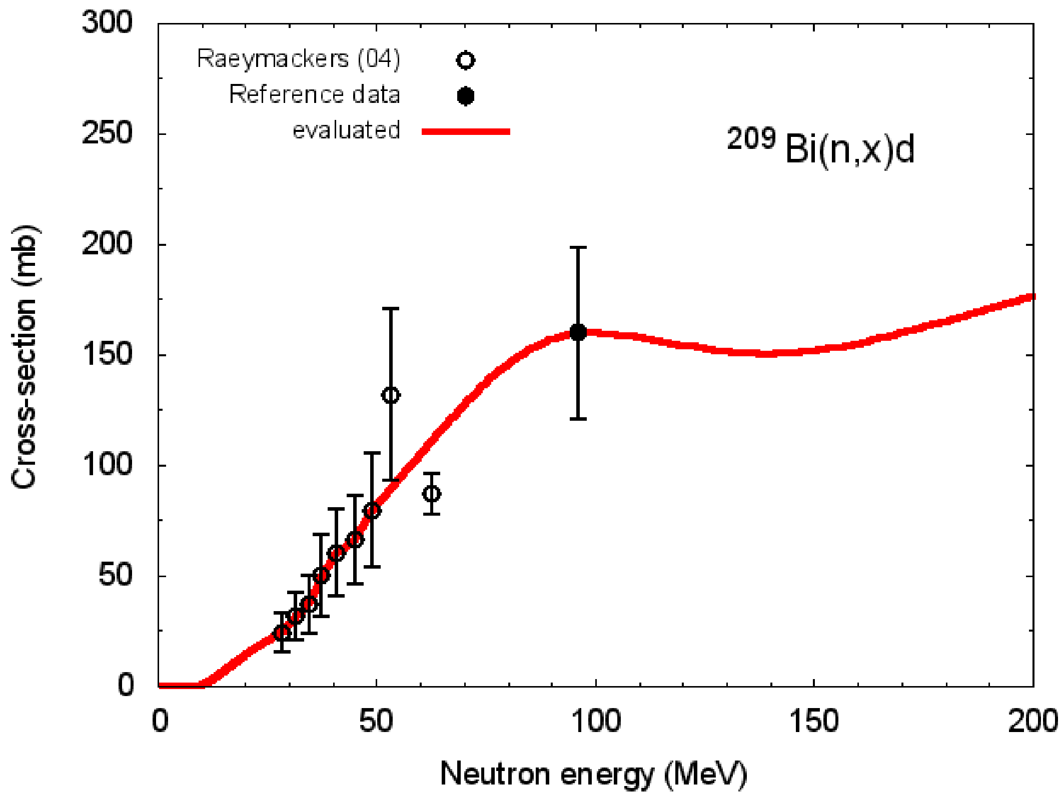

Fig.40 Evaluated deuteron production cross-section for ^{209}Bi.

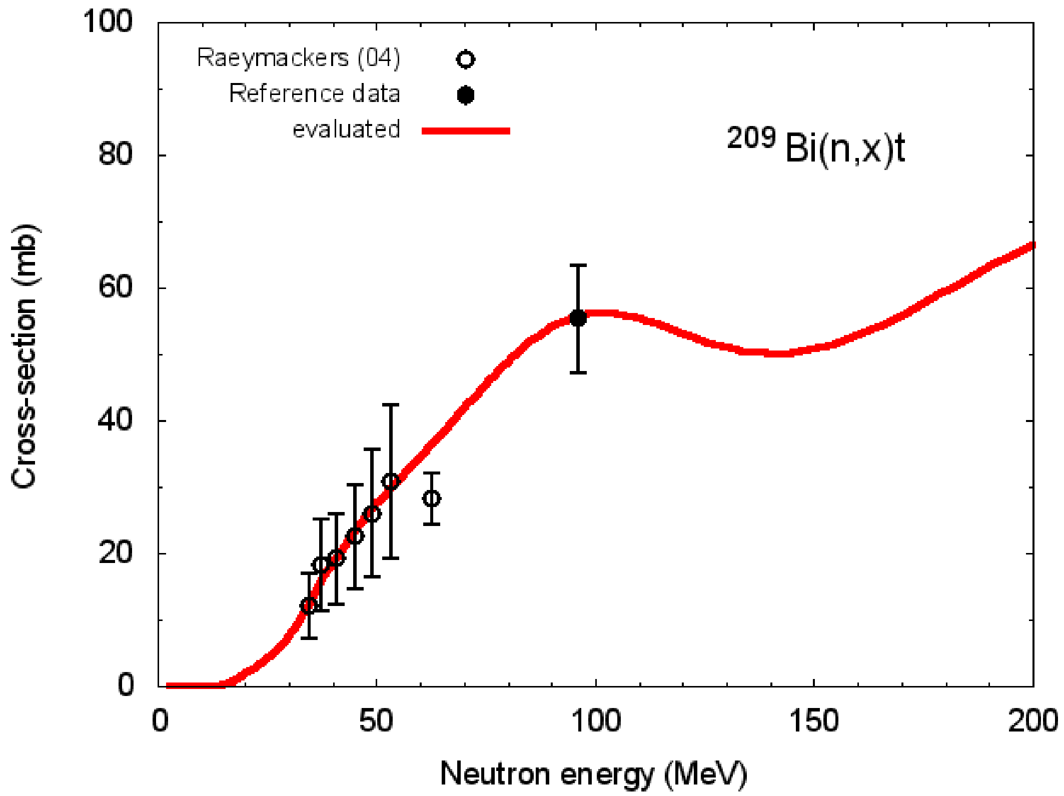

Fig.41 Evaluated triton production cross-section for ^{209}Bi.

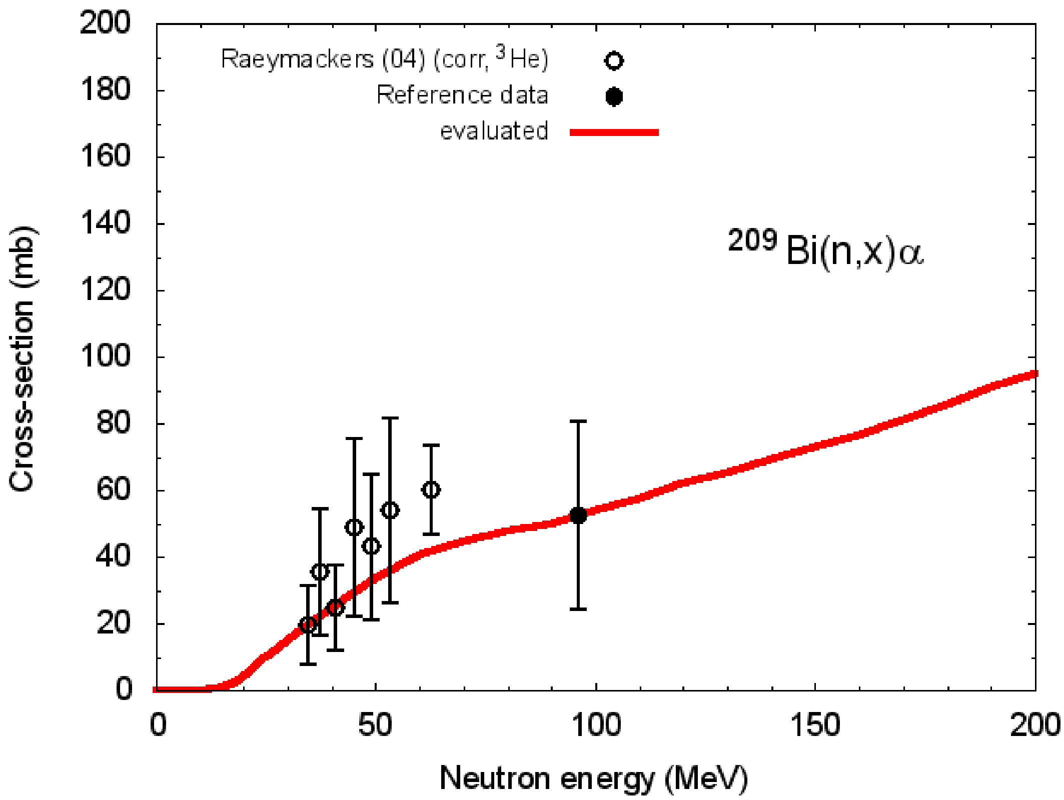

Fig.42 Evaluated α-particle production cross-section for ^{209}Bi.

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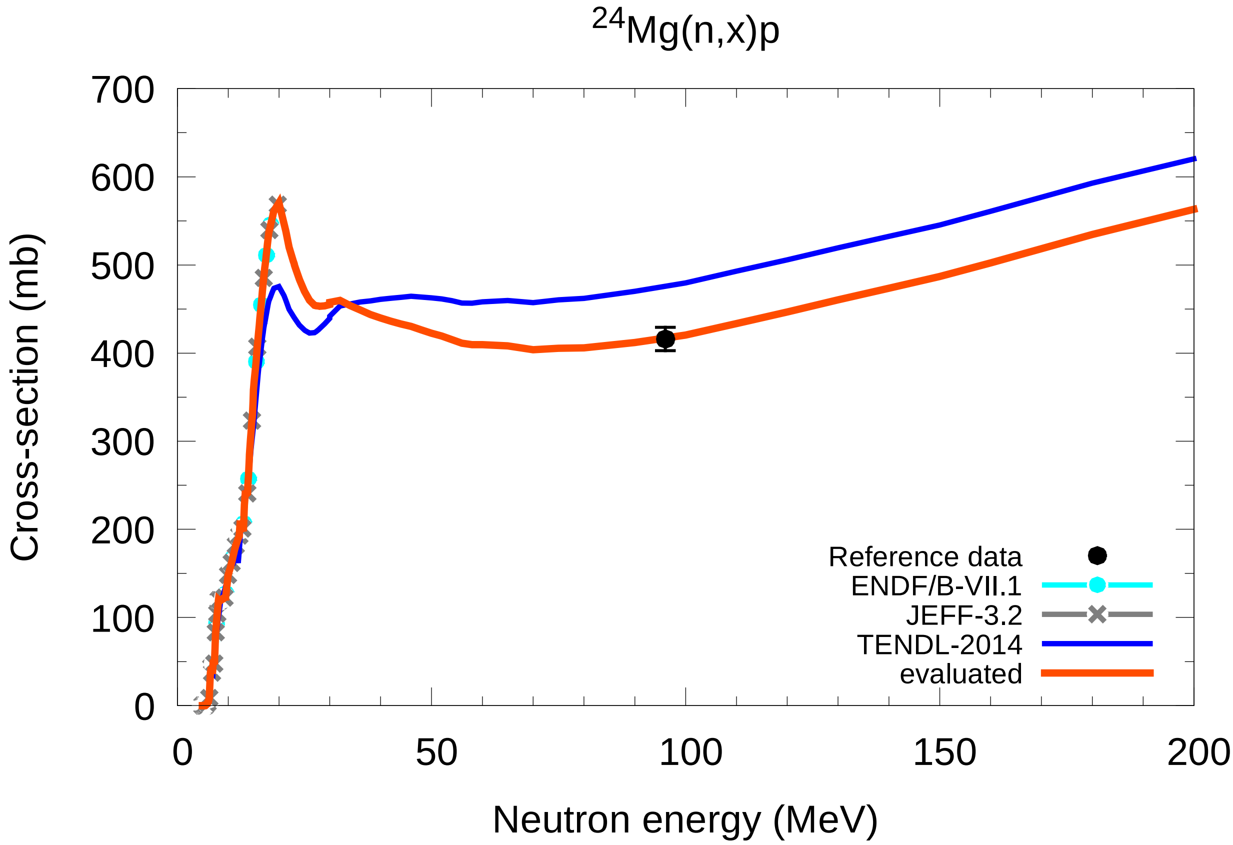
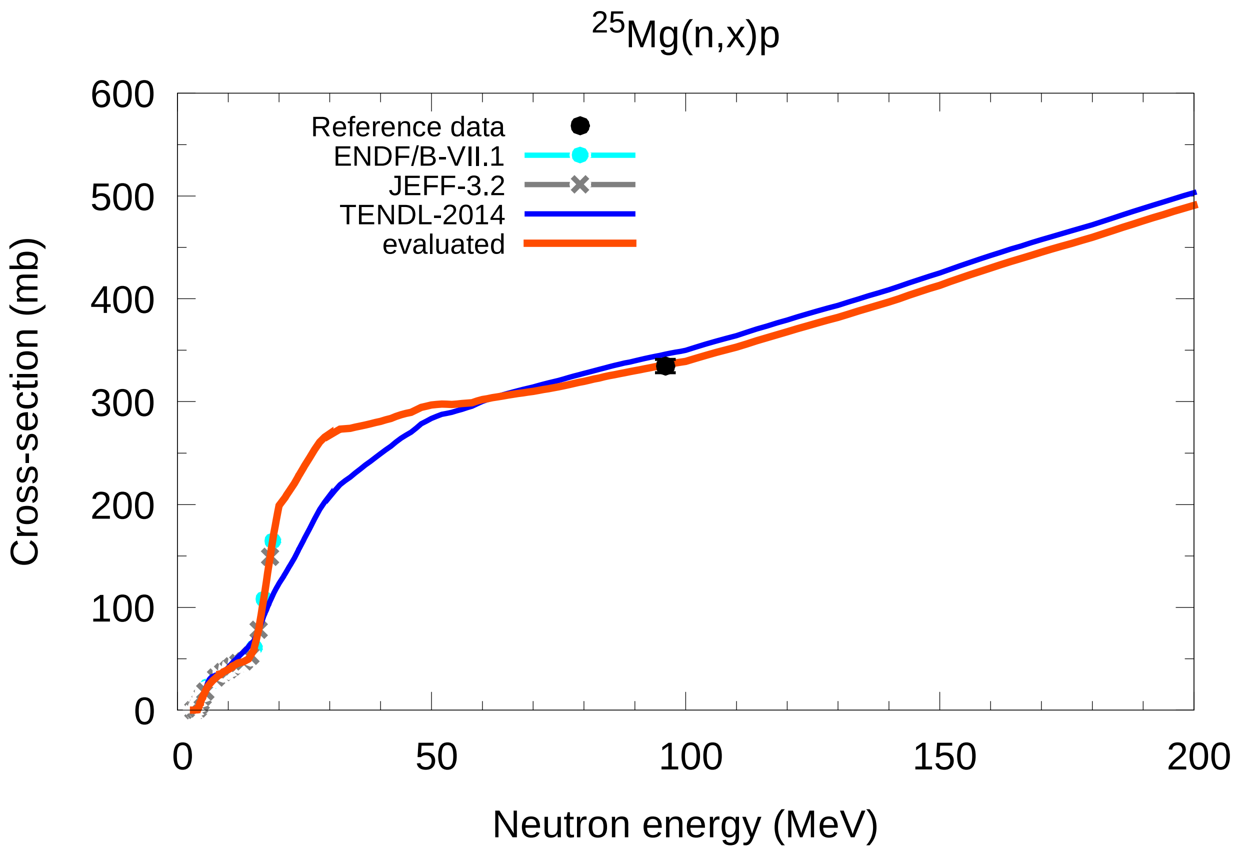
Appendix A

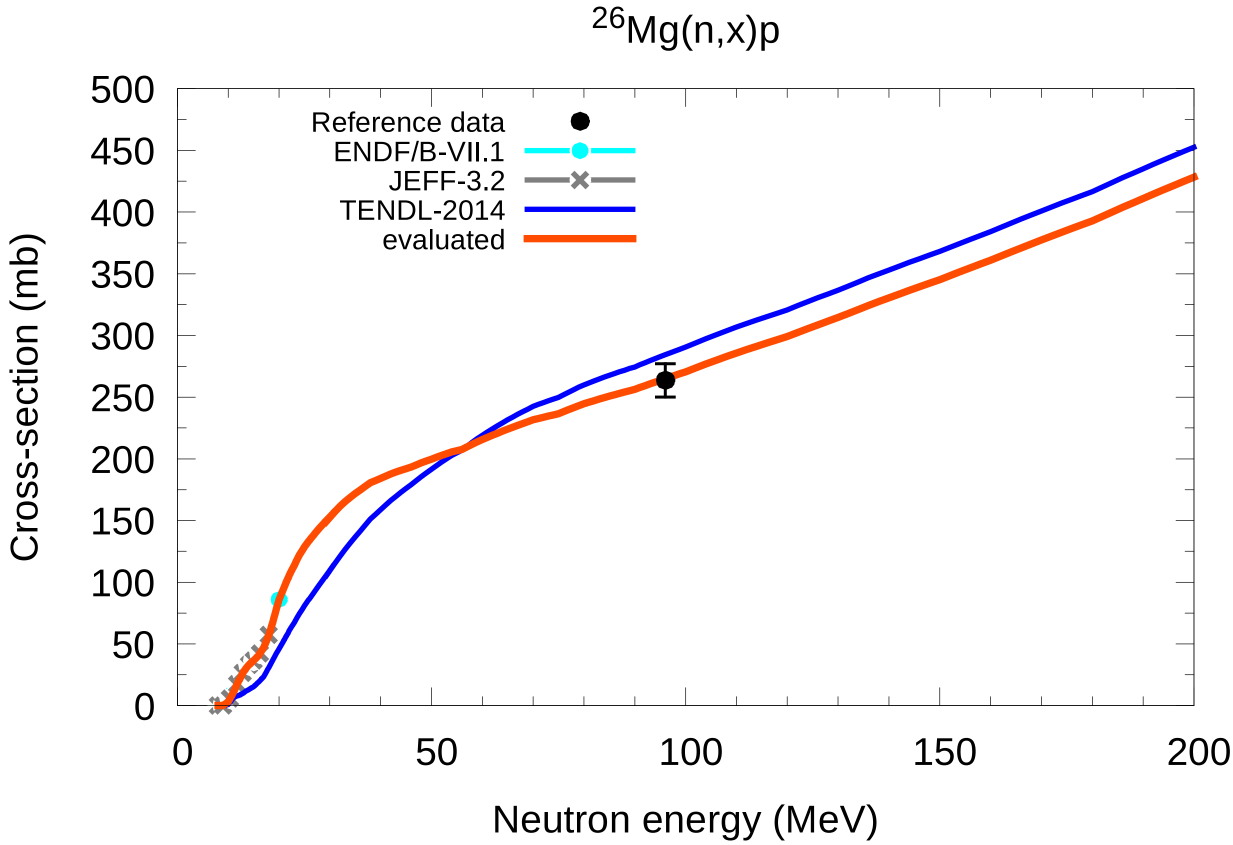
Evaluated proton production cross-sections, data from ENDF/B-VII.1, JEFF-3.2, and TENDL-2014, and cross-sections at 96 MeV estimated using the σ(A)-dependence



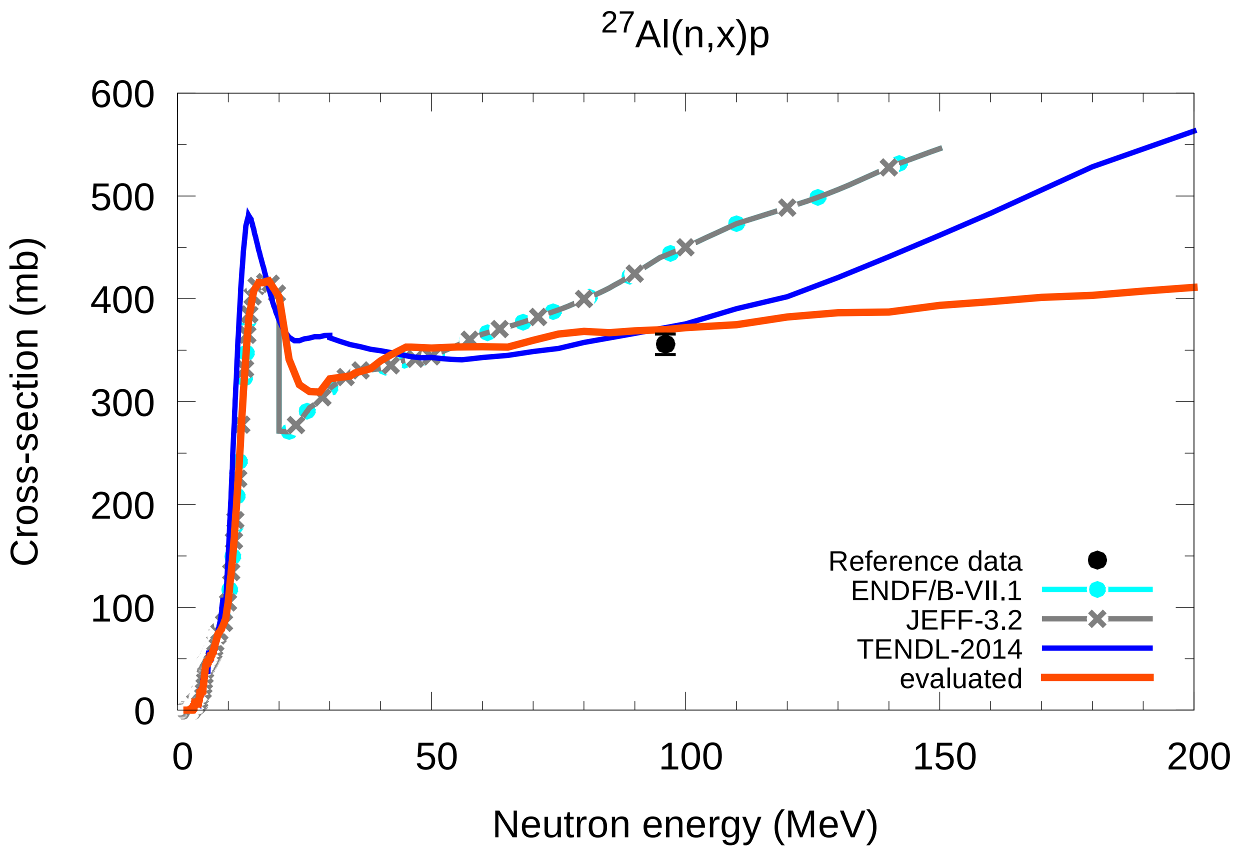
^{24}Mg(n,x)p
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



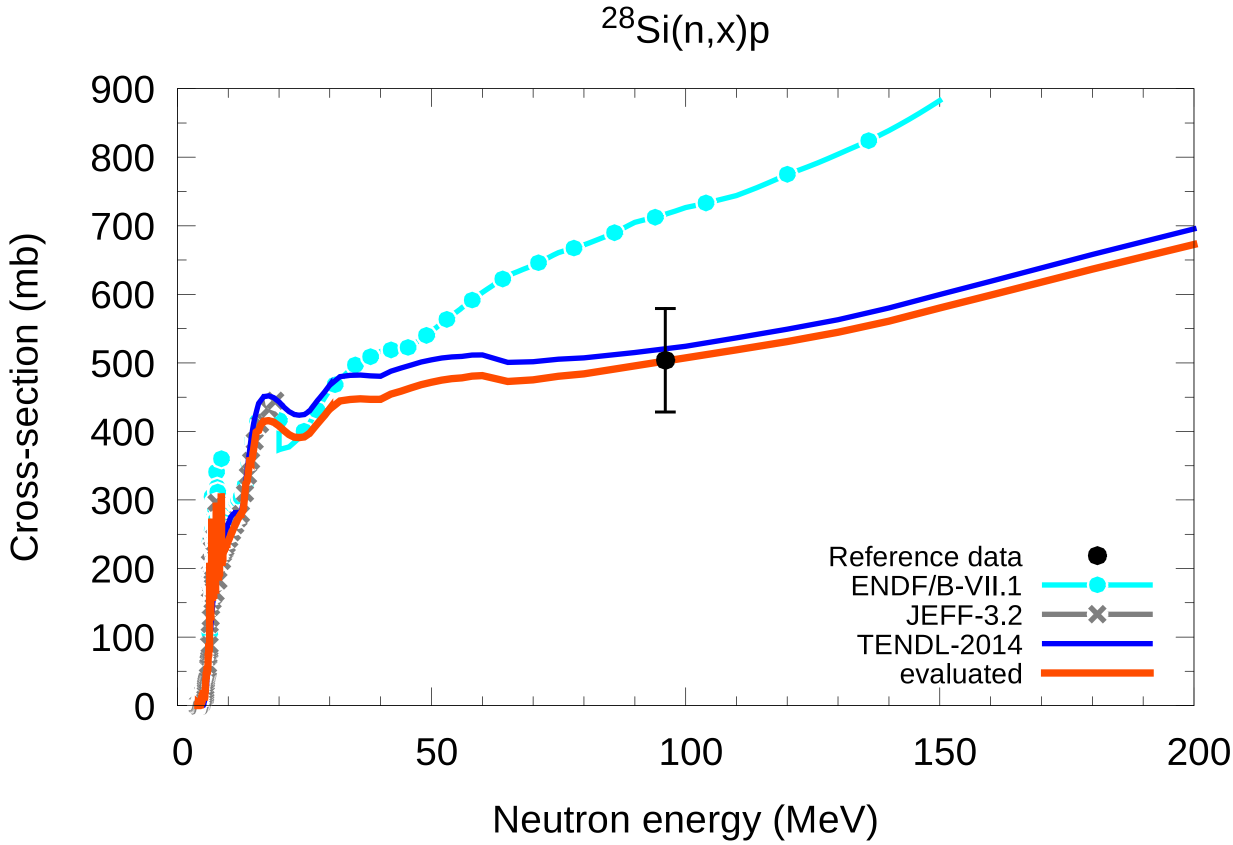
^{25}Mg(n,x)p
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



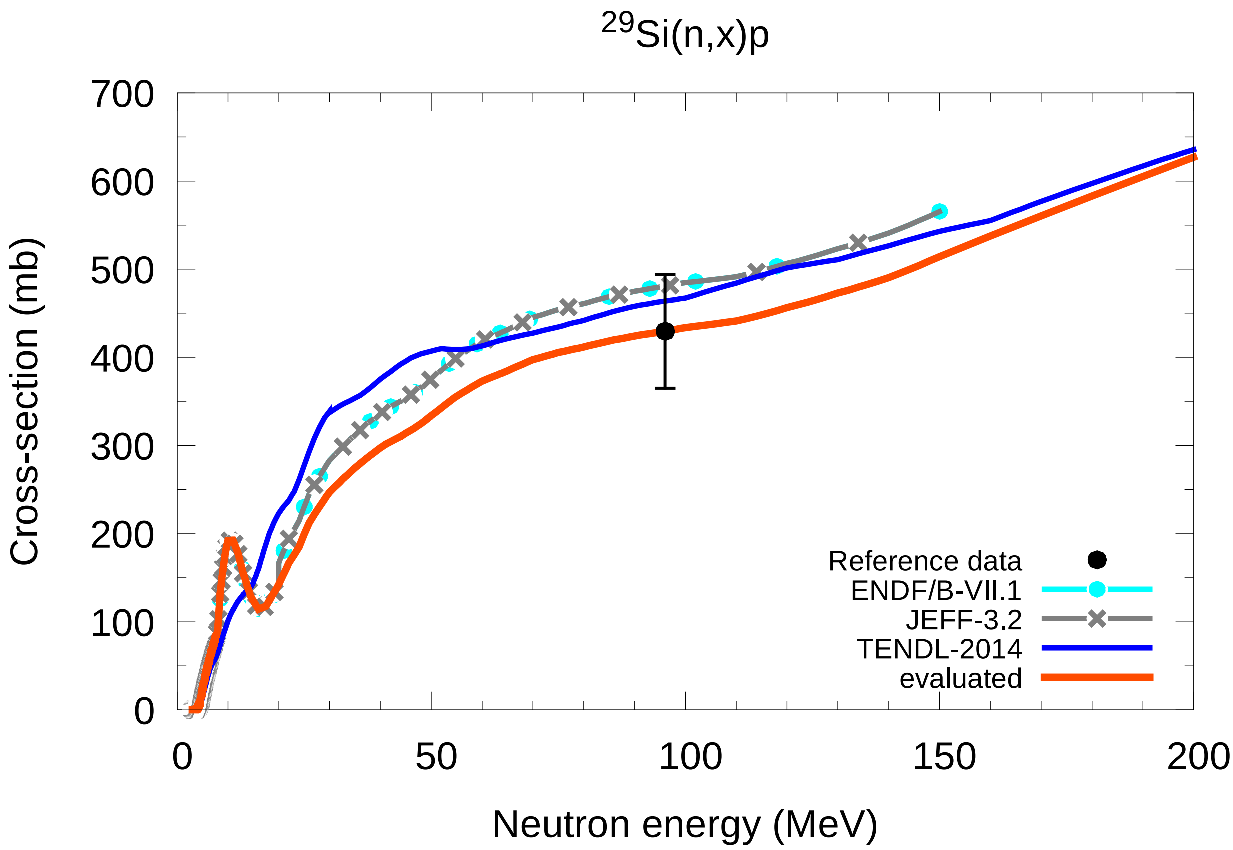
^{26}Mg(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300
350
400
450
500
0
50
100
150
200



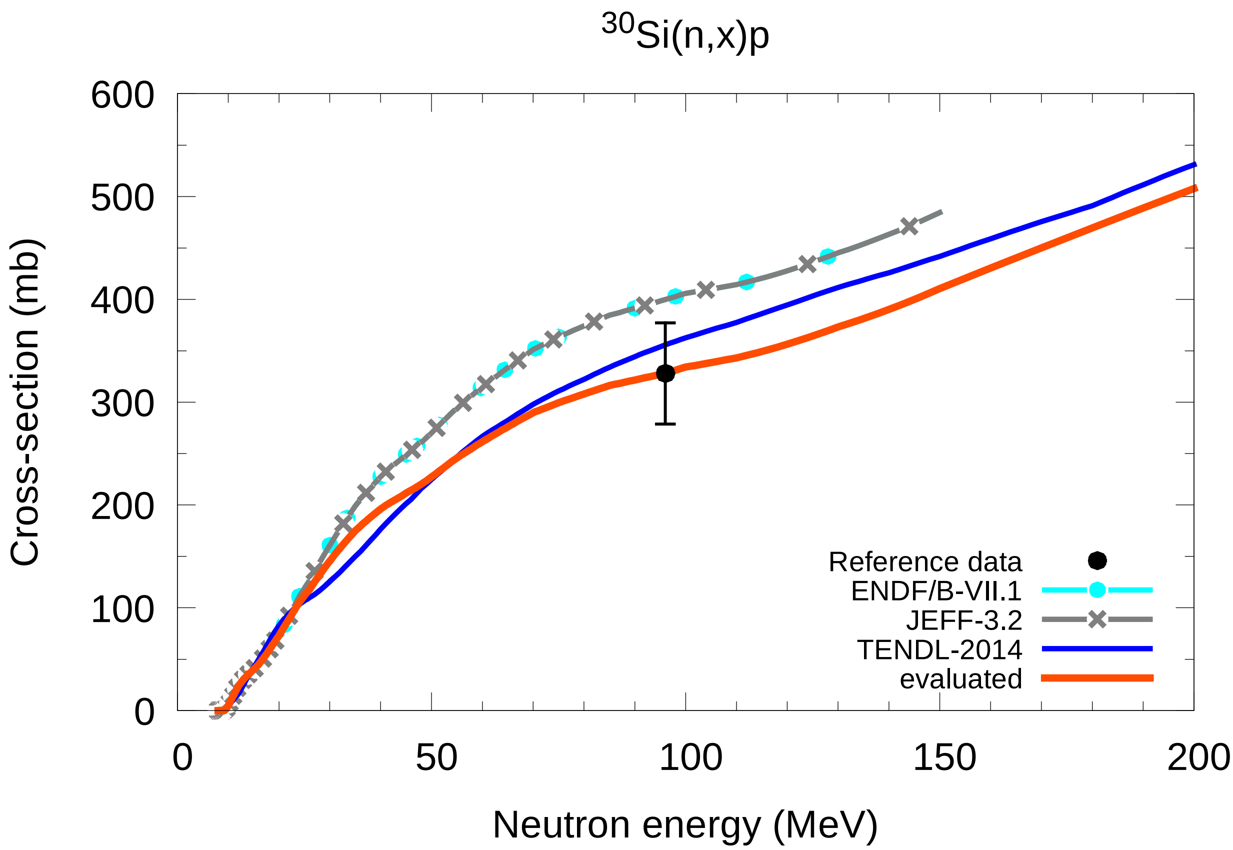
^{27}Al(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
100
200
300
400
500
600
0
50
100
150
200



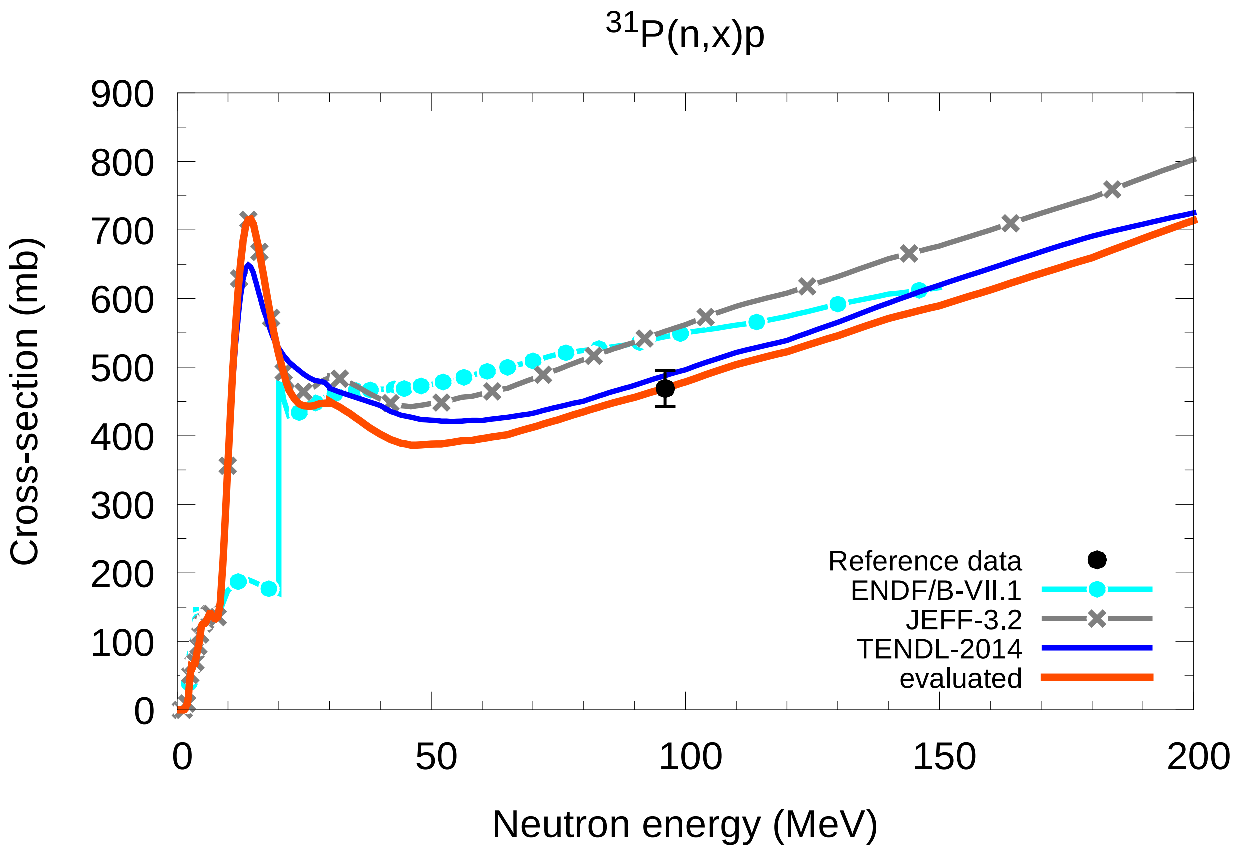
^{28}Si(n,x)p
Cross-section (mb)
900
800
700
600
500
400
300
200
100
0
0
50
100
150
200
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



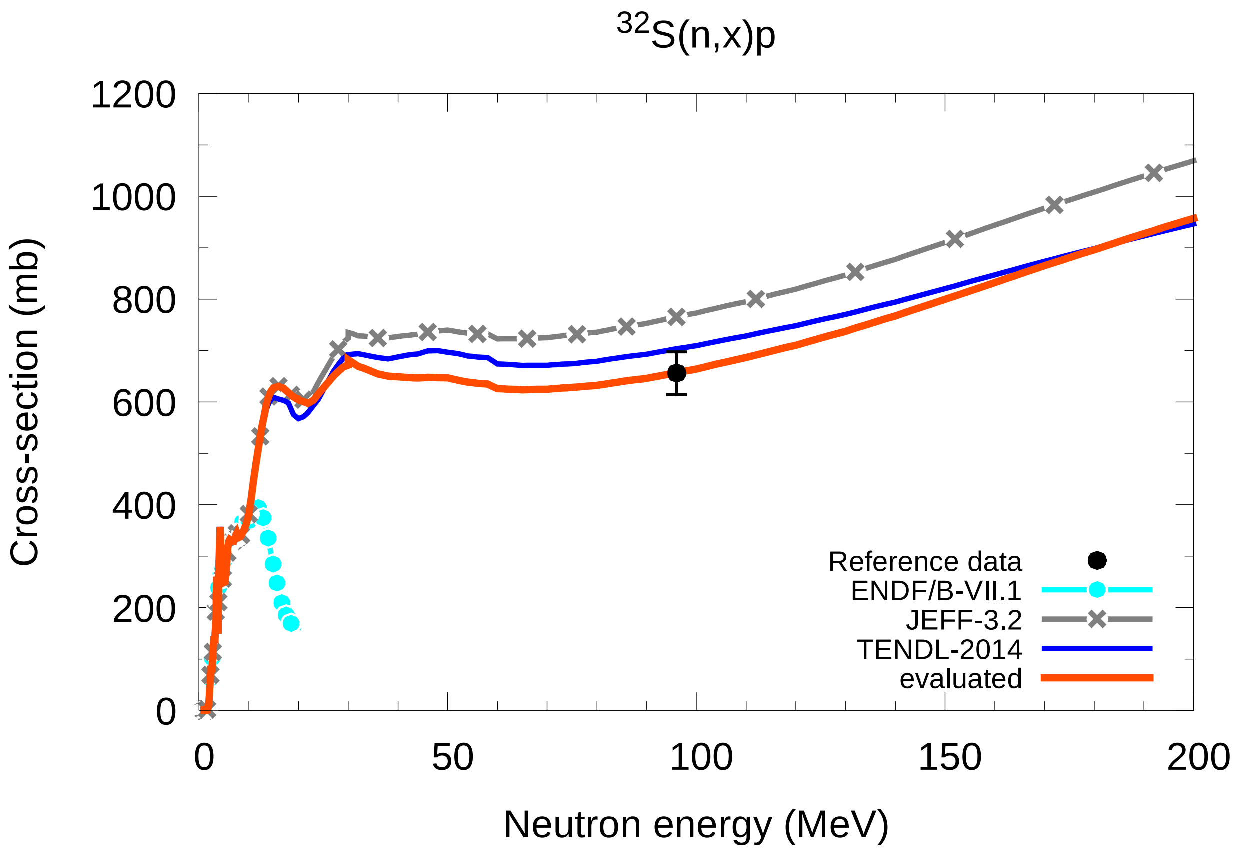
^{29}Si(n,x)p
Cross-section (mb)
700
600
500
400
300
200
100
0
0
50
100
150
200
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



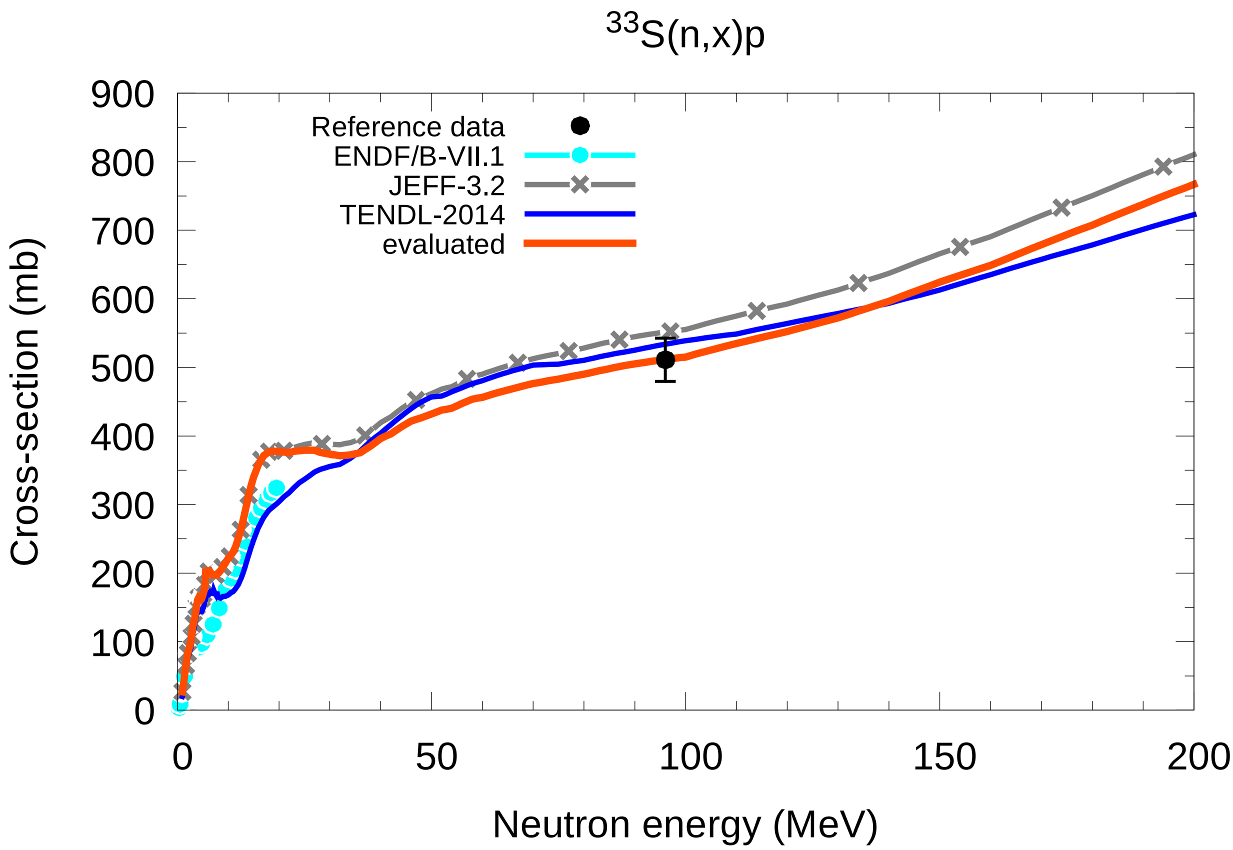
^{30}Si(n,x)p
Cross-section (mb)
600
500
400
300
200
100
0
0
50
100
150
200
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



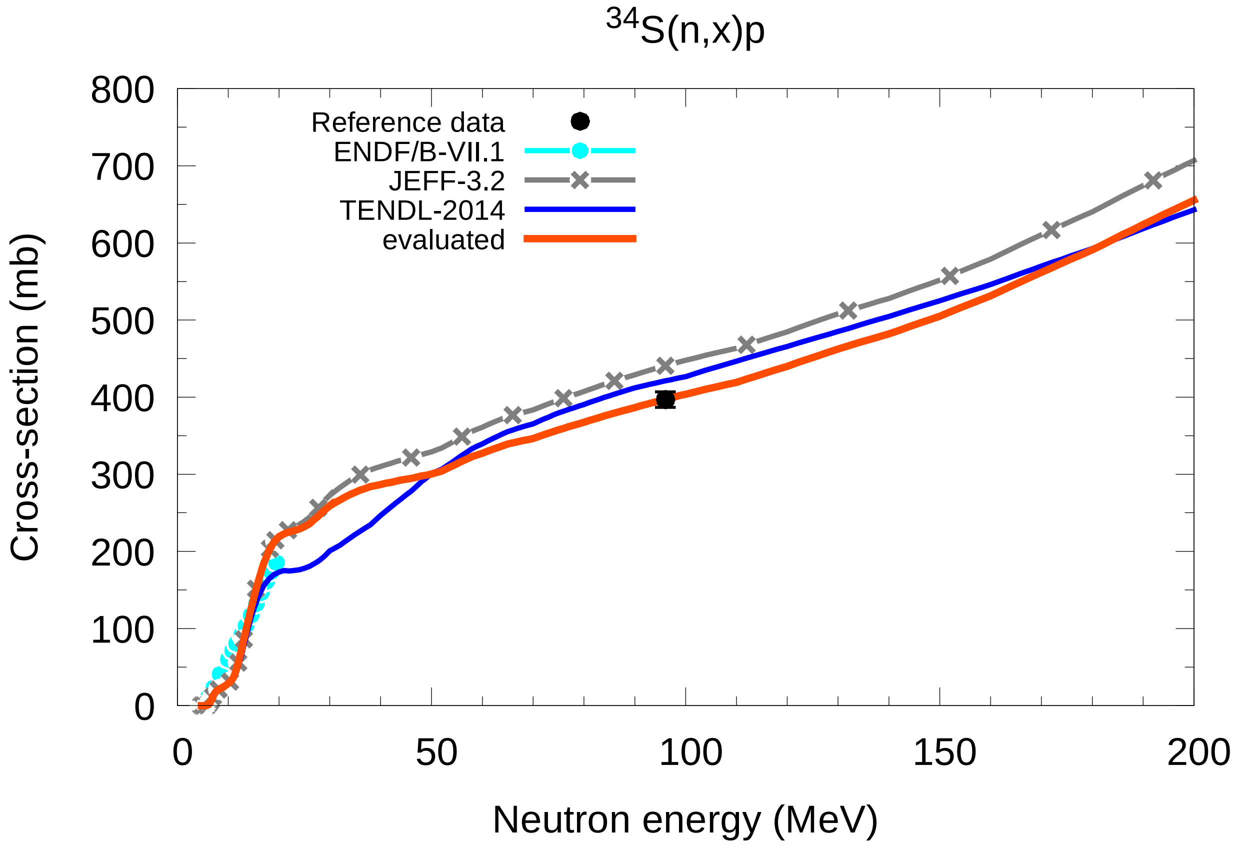
^{31}P(n,x)p
Cross-section (mb)
900
800
700
600
500
400
300
200
100
0
0
50
100
150
200
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



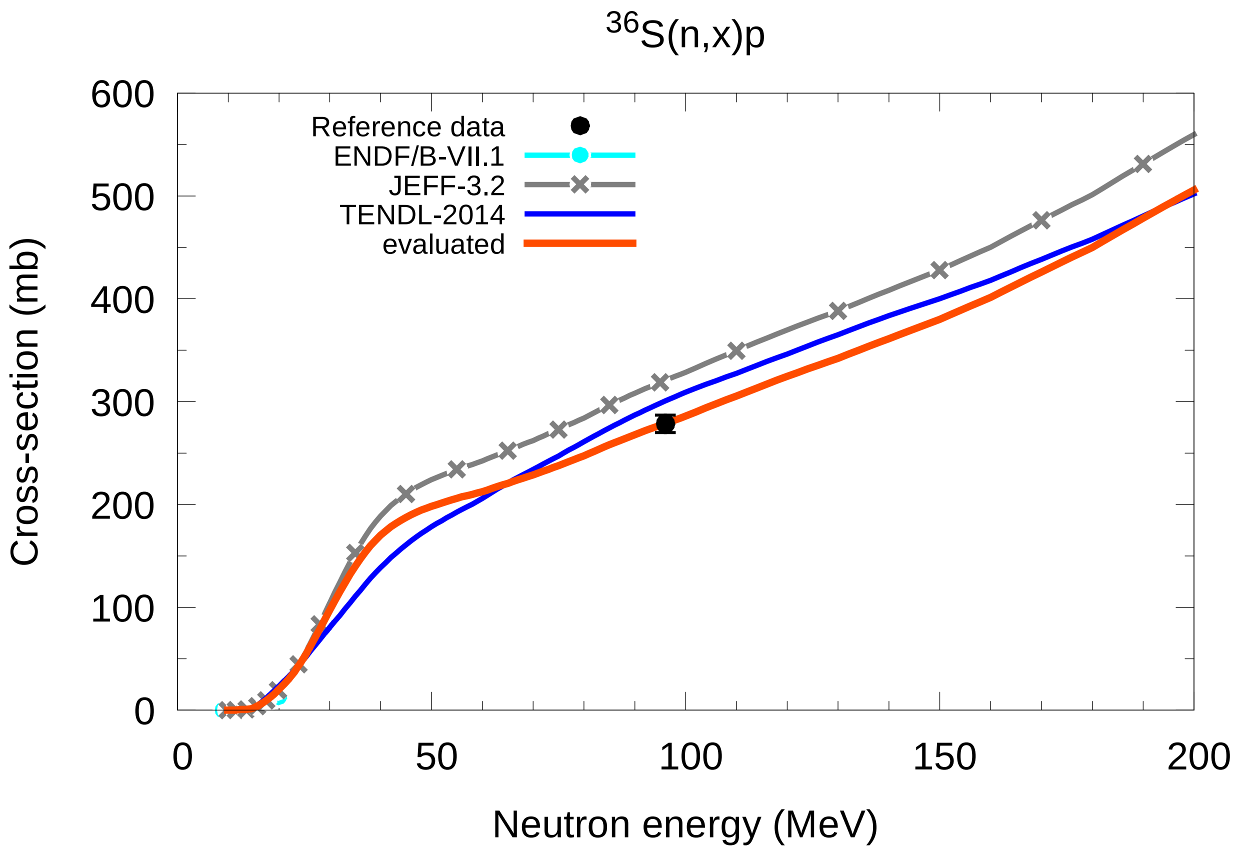
$^{32}S(n,x)p$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
200
400
600
800
1000
1200
0
50
100
150
200



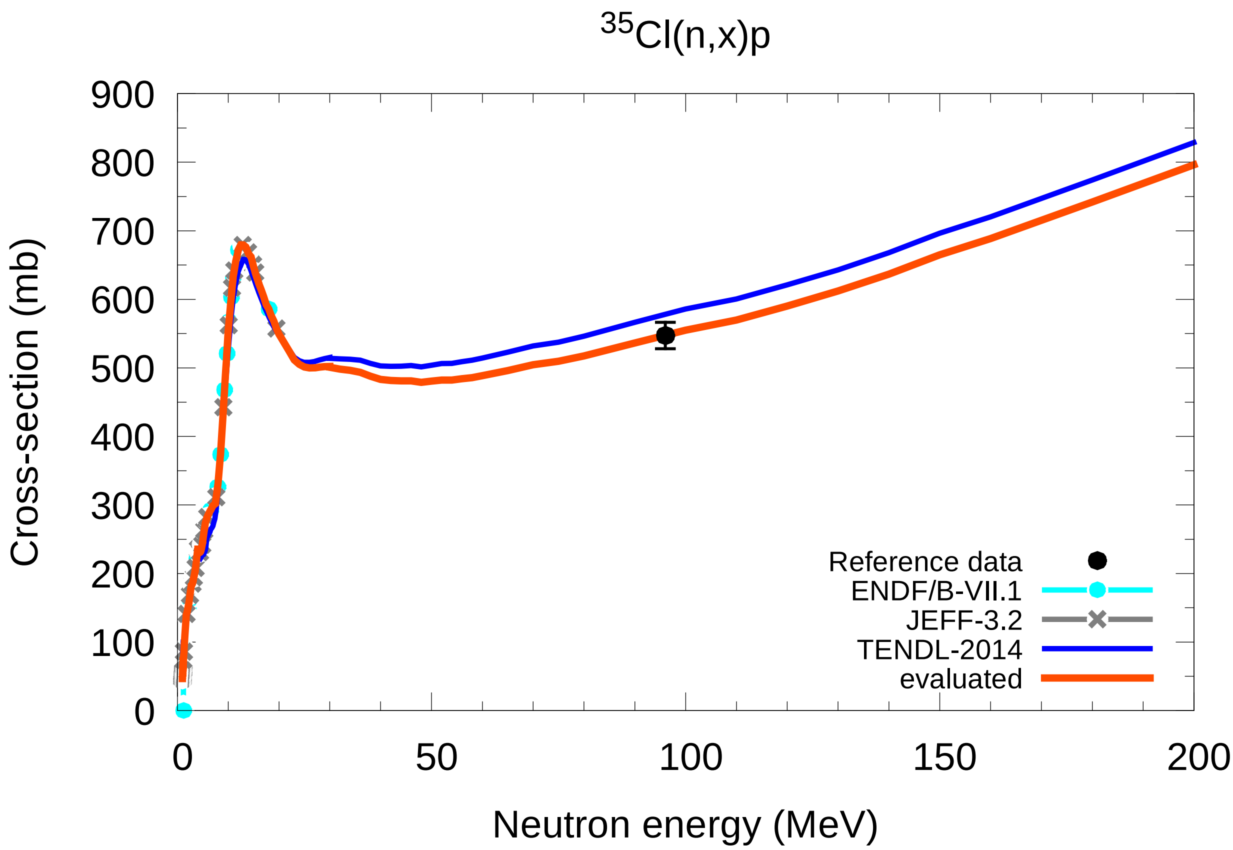
$^{33}S(n,x)p$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
100
200
300
400
500
600
700
800
900
0
50
100
150
200



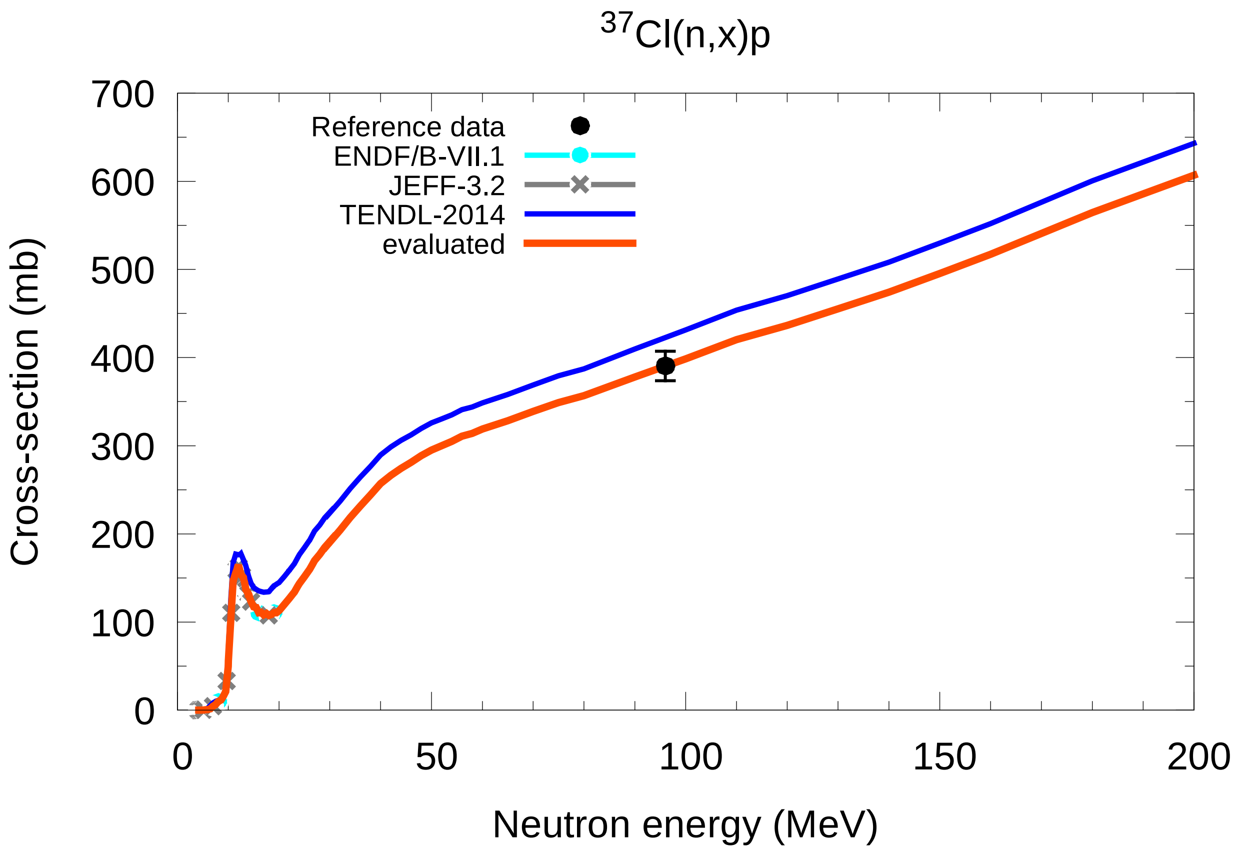
^{34}S(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
0
50
100
150
200



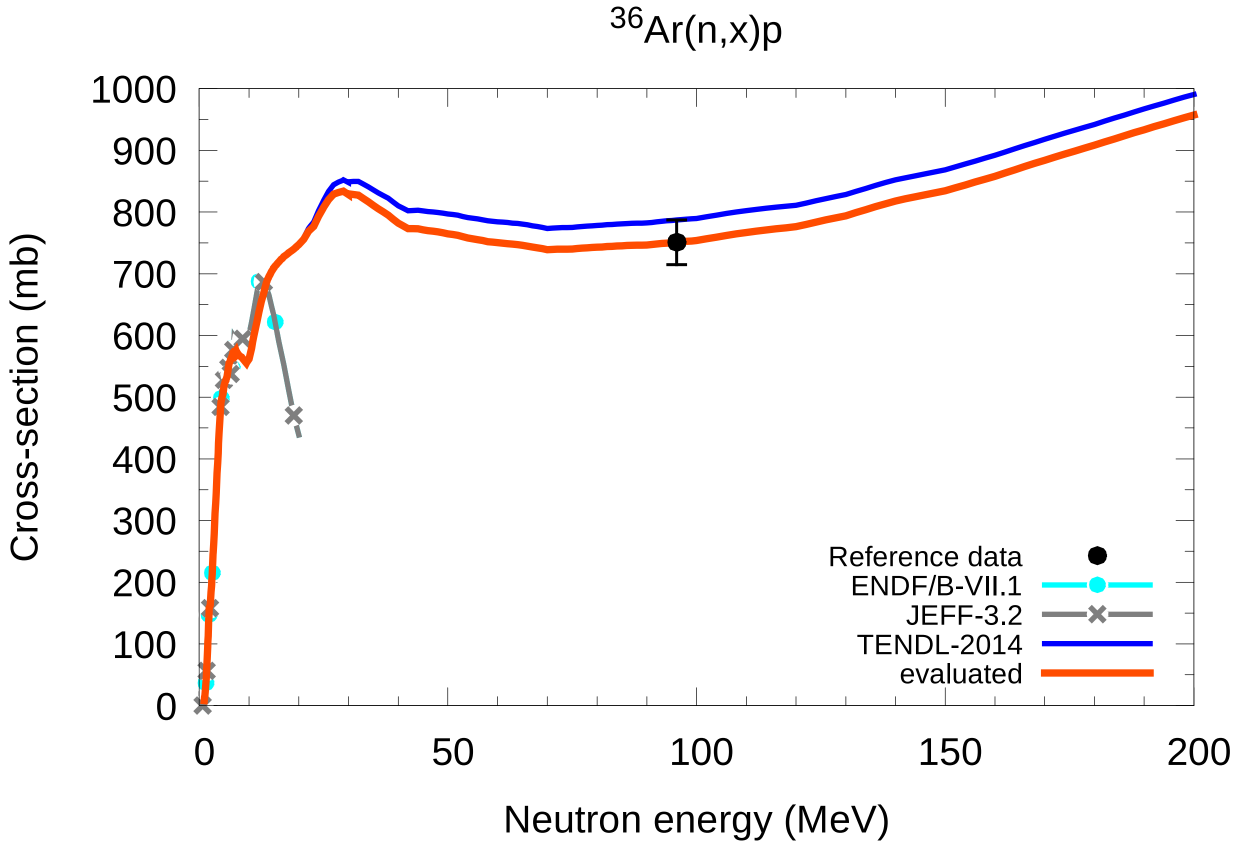
^{36}S(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



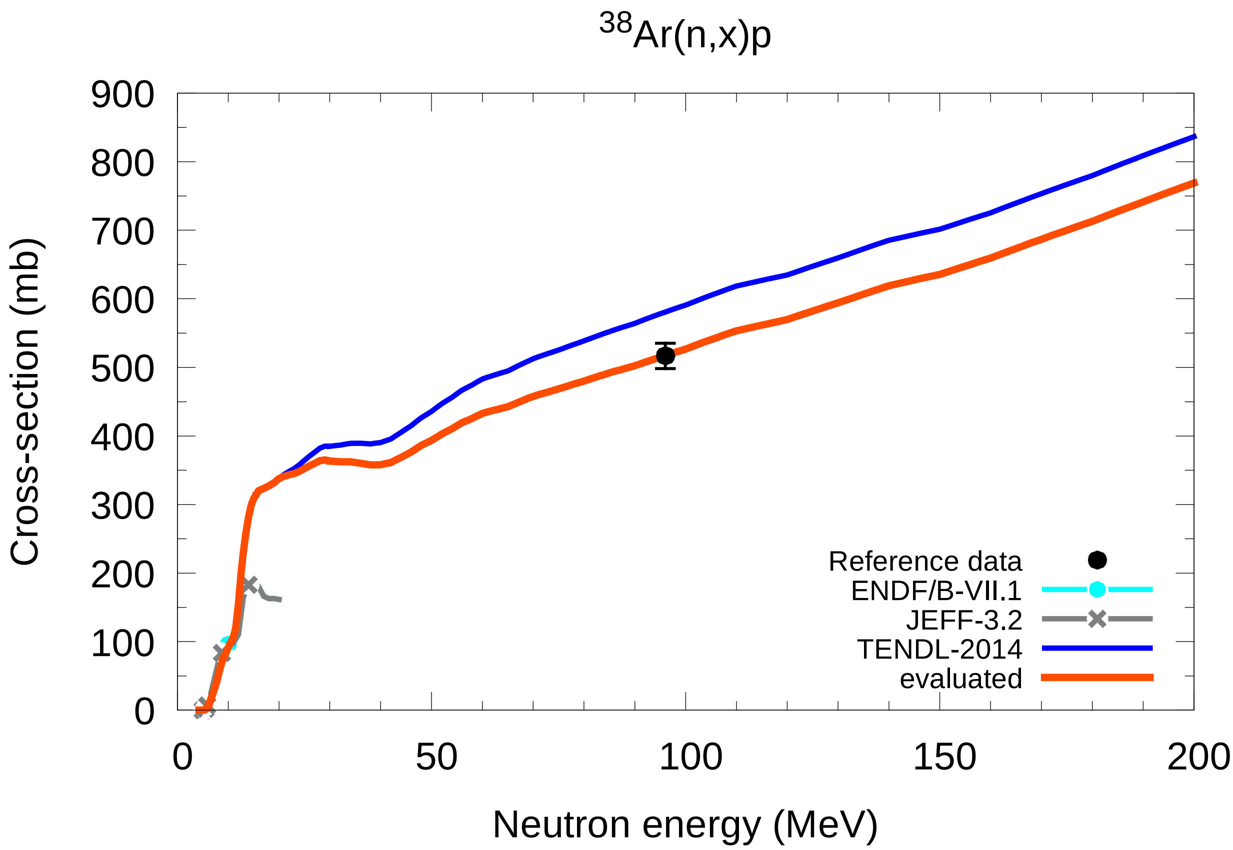
35Cl(n,x)p
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



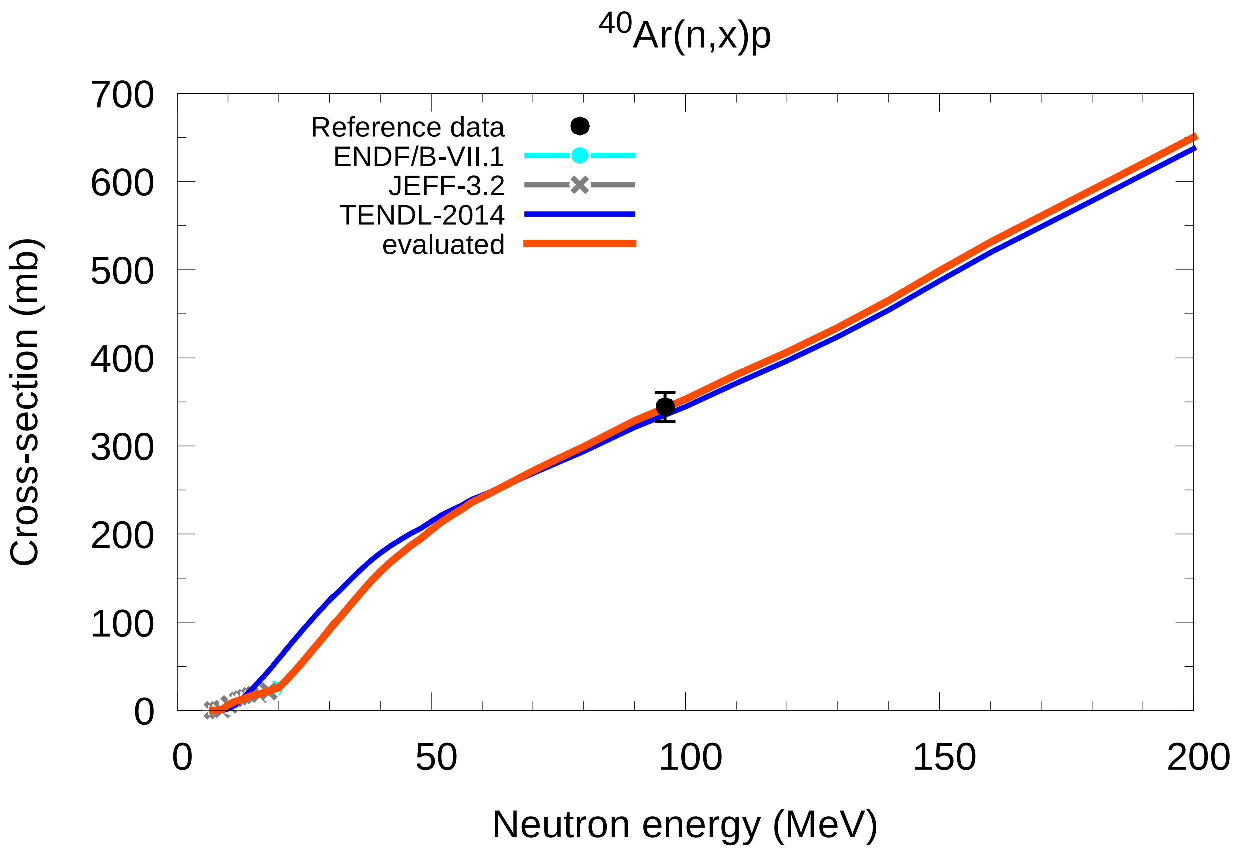
37Cl(n,x)p
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



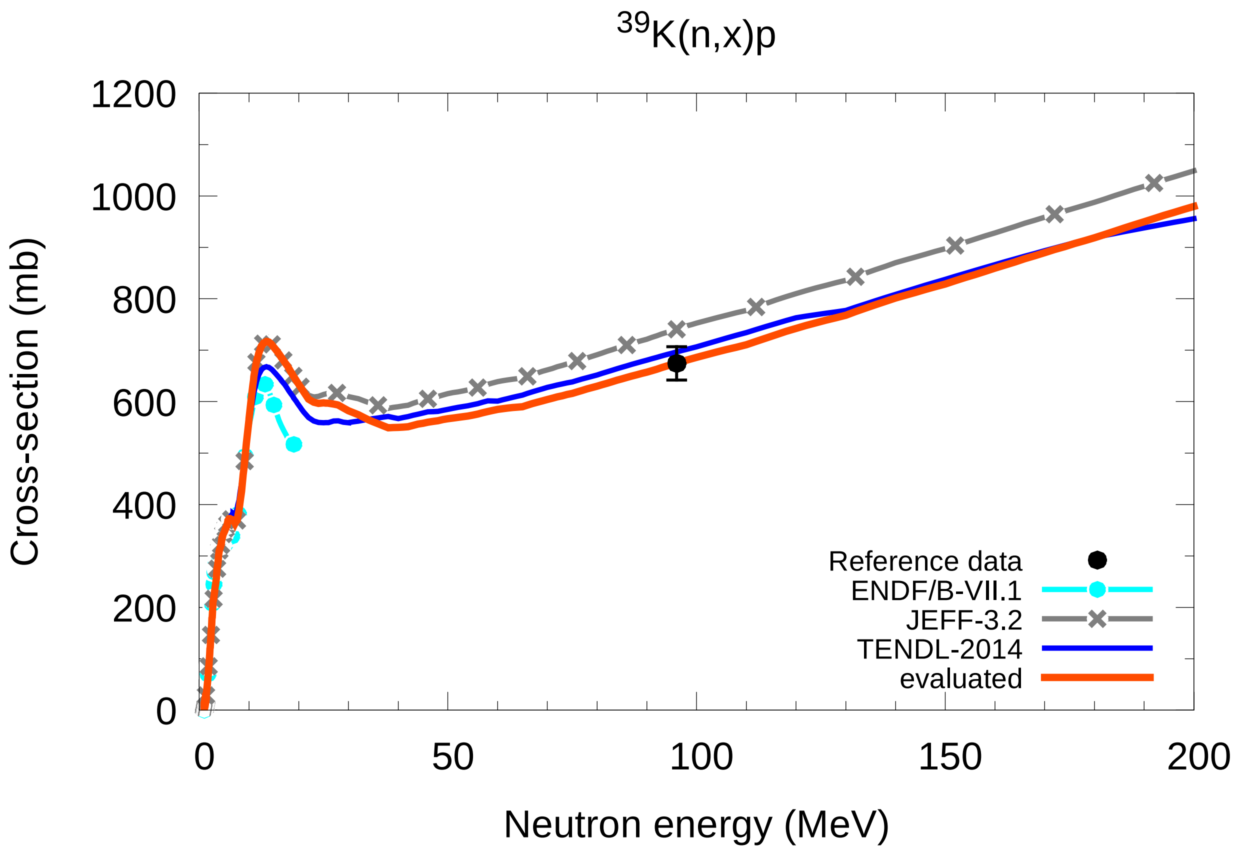
^{36}Ar(n,x)p
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
1000
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



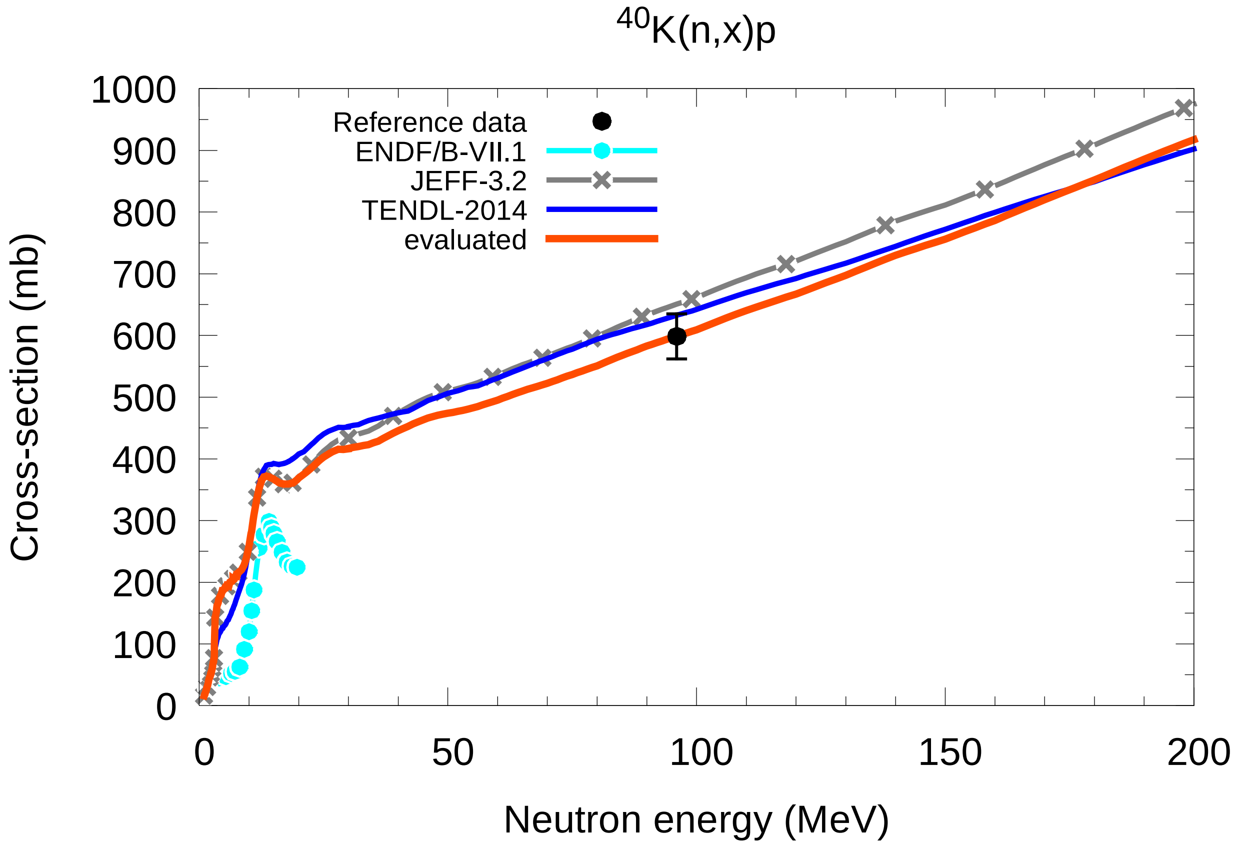
^{38}Ar(n,x)p
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



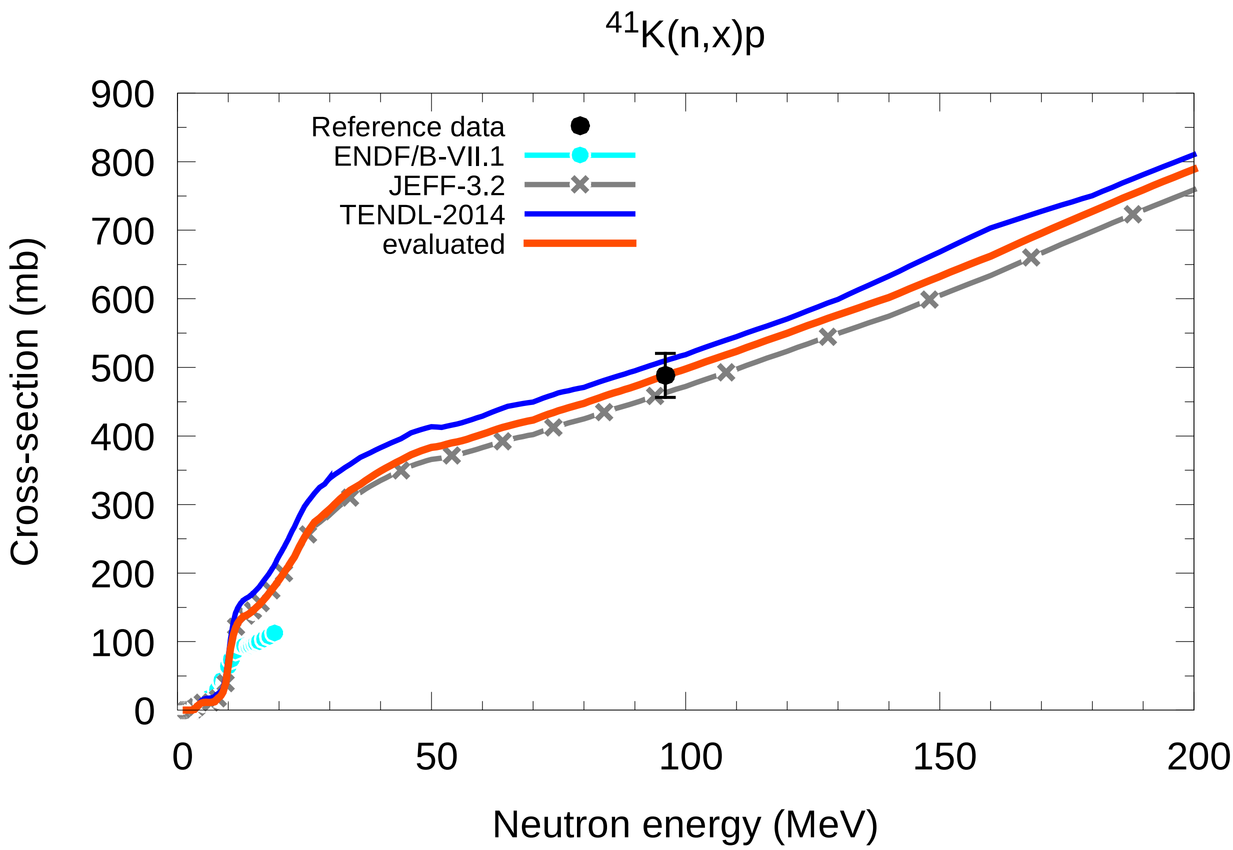
^{40}Ar(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200



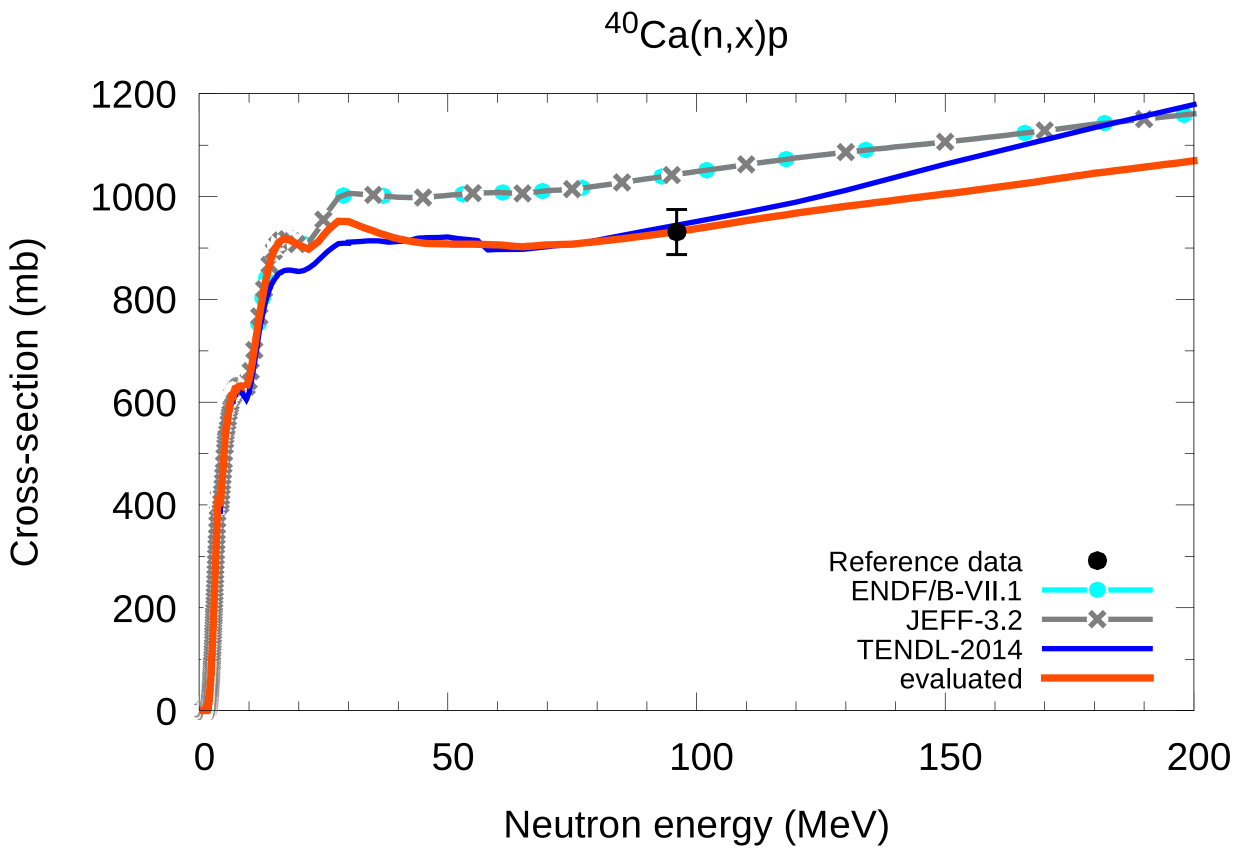
^{39}K(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
0
50
100
150
200



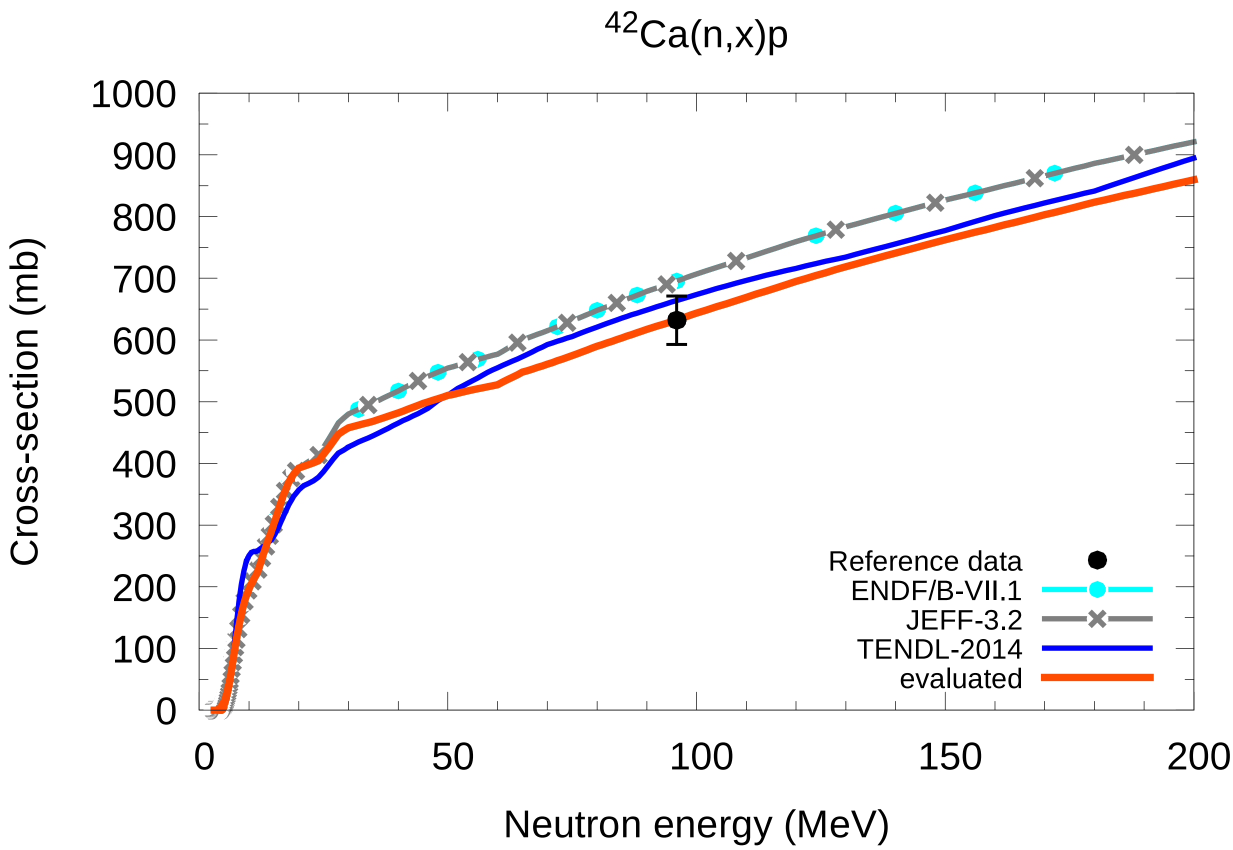
^{40}K(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
100
200
300
400
500
600
700
800
900
1000
0
50
100
150
200



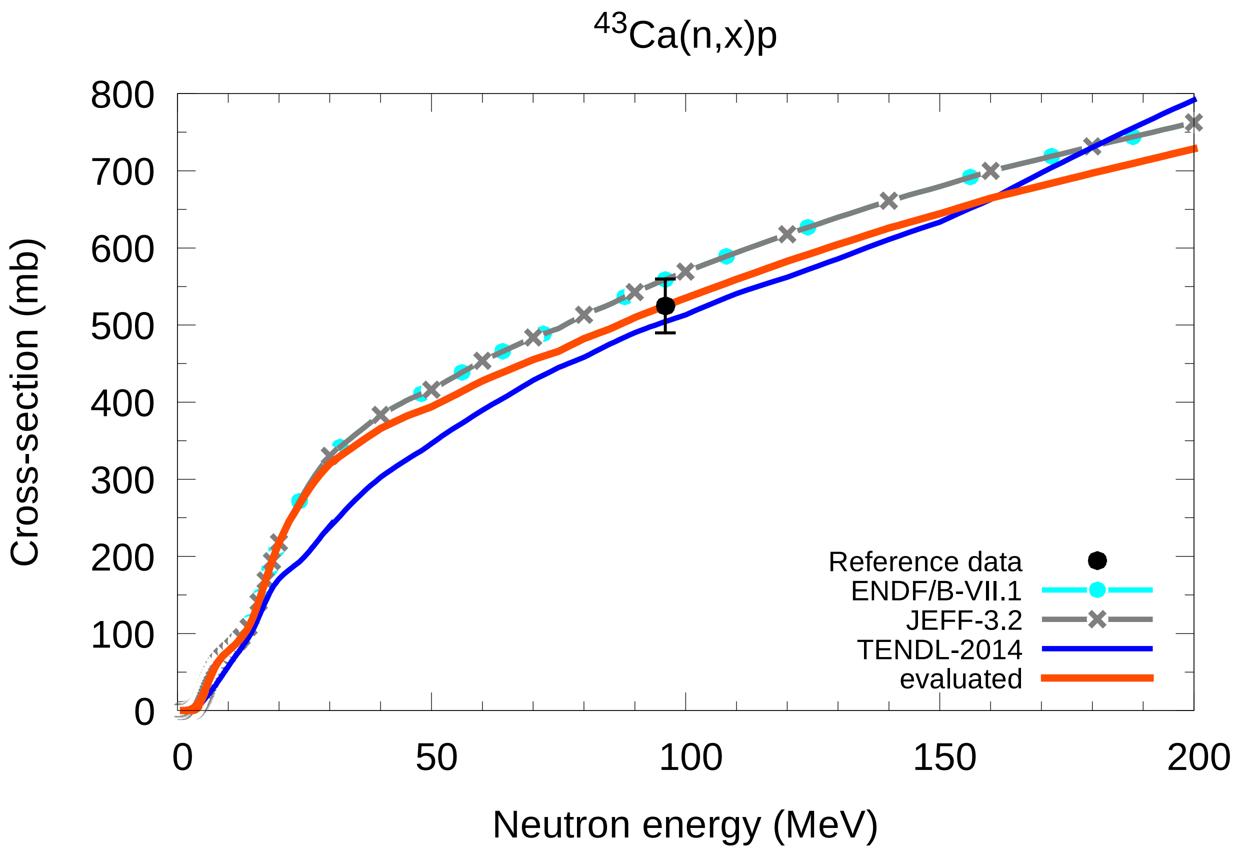
^{41}K(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
100
200
300
400
500
600
700
800
900
0
50
100
150
200



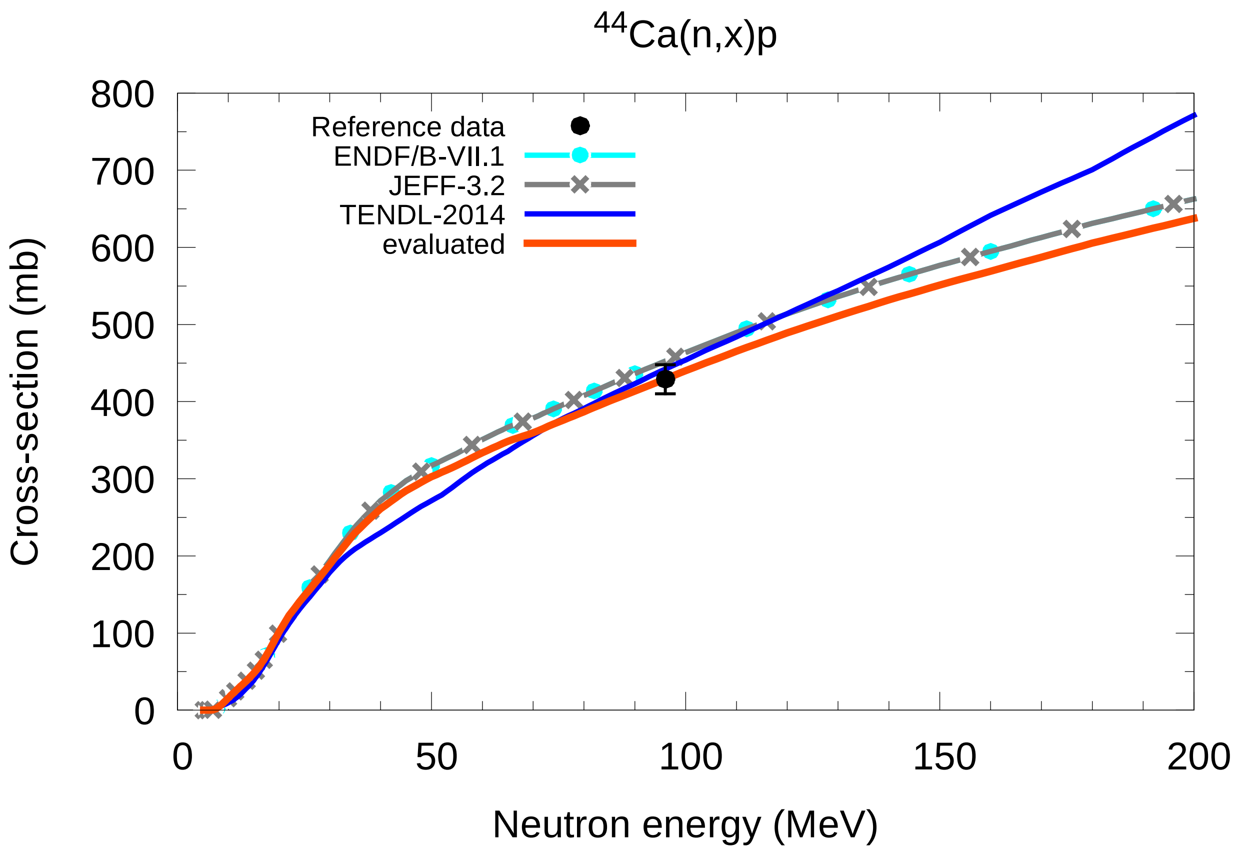
^{40}Ca(n,x)p
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



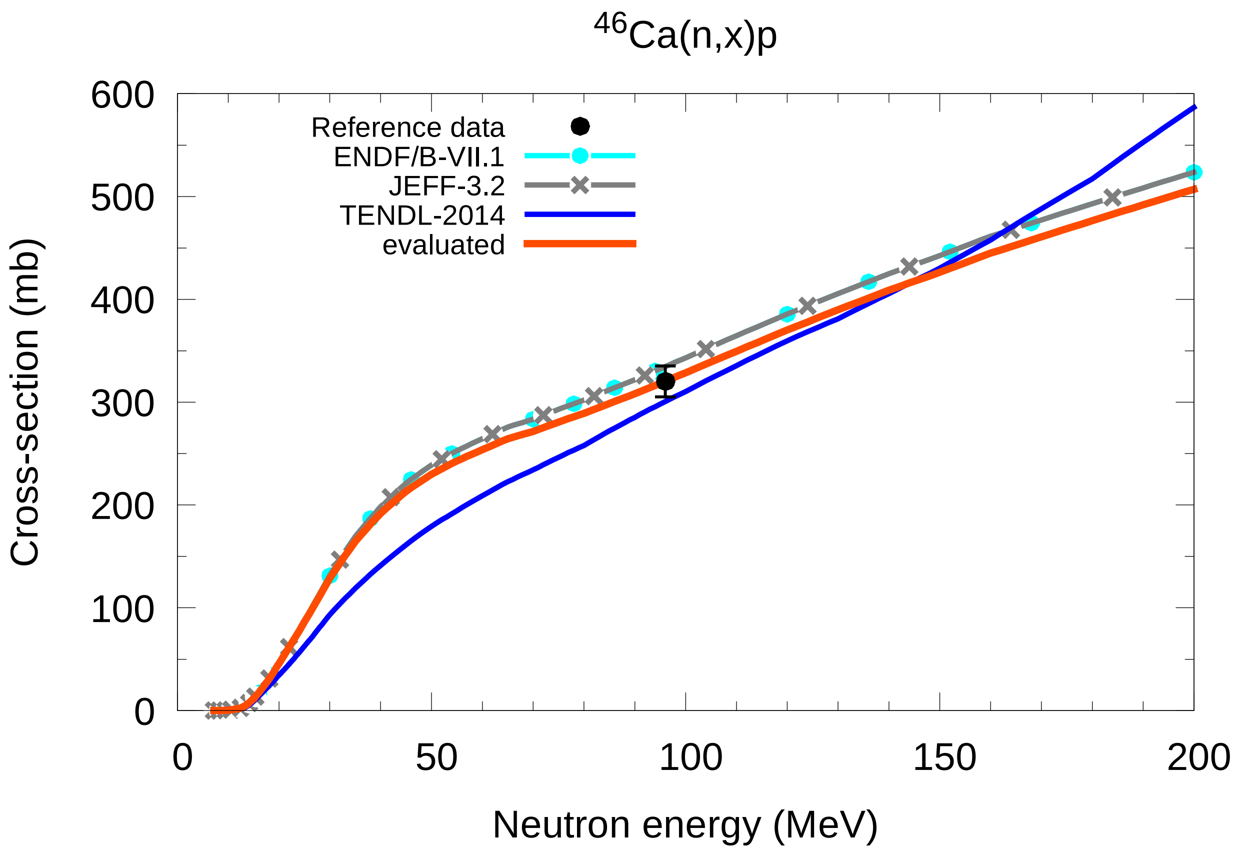
^{42}Ca(n,x)p
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
1000
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



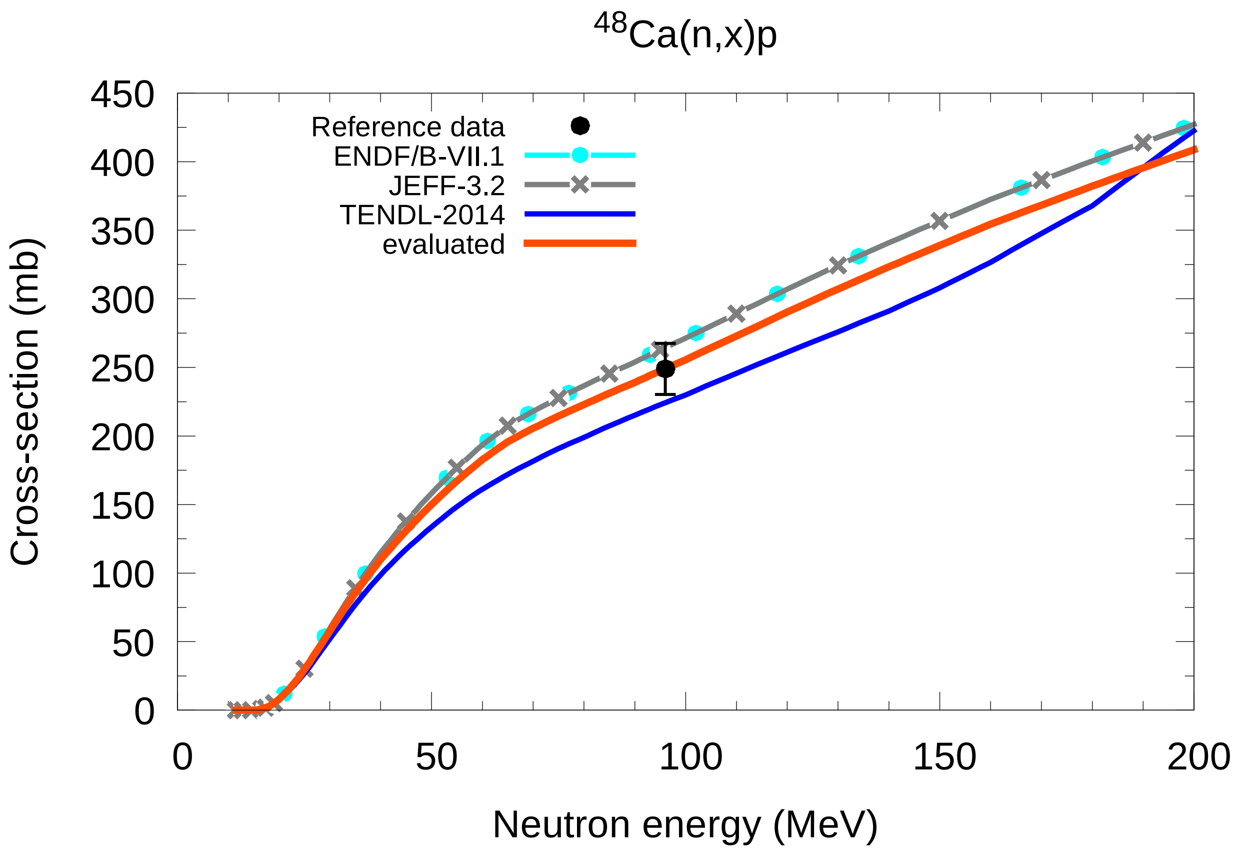
^{43}Ca(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
100
200
300
400
500
600
700
800
0
50
100
150
200



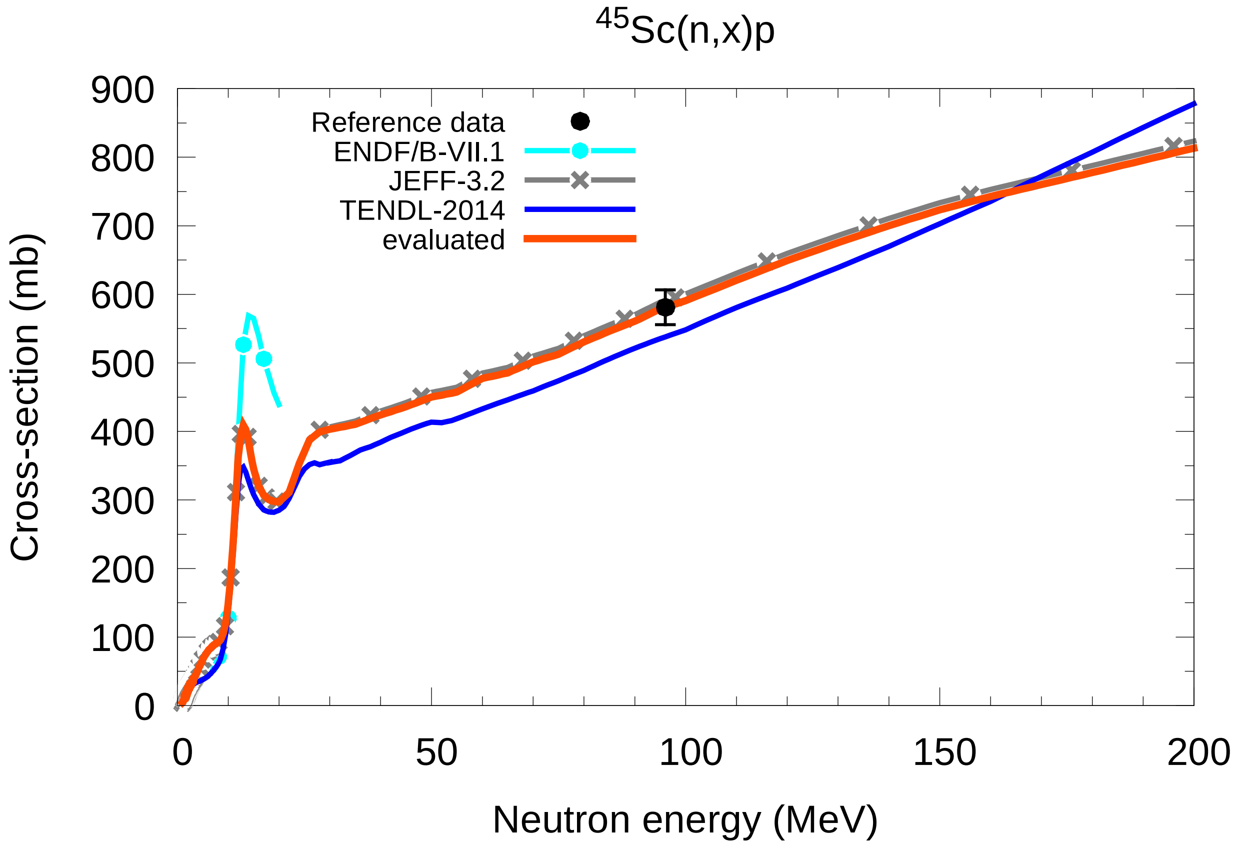
^{44}Ca(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
100
200
300
400
500
600
700
800
0
50
100
150
200



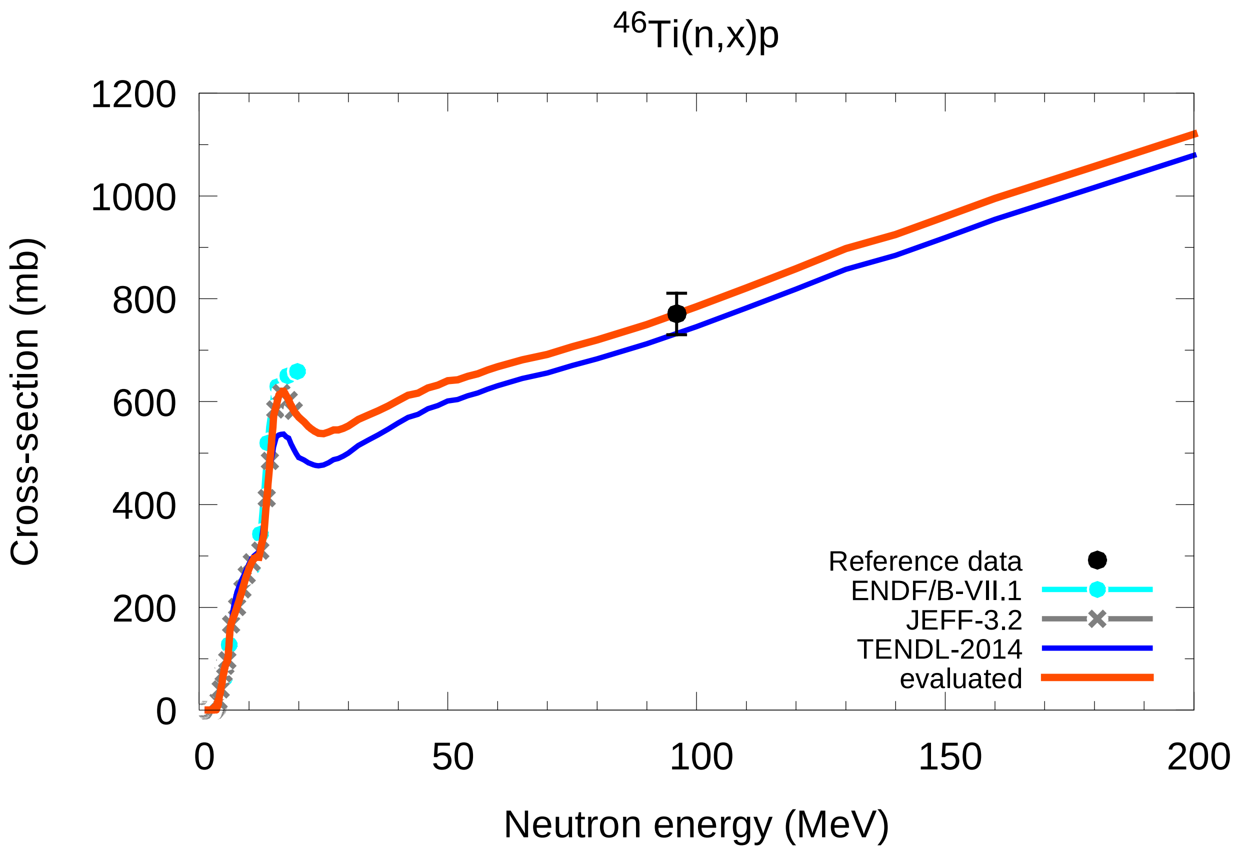
^{46}Ca(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



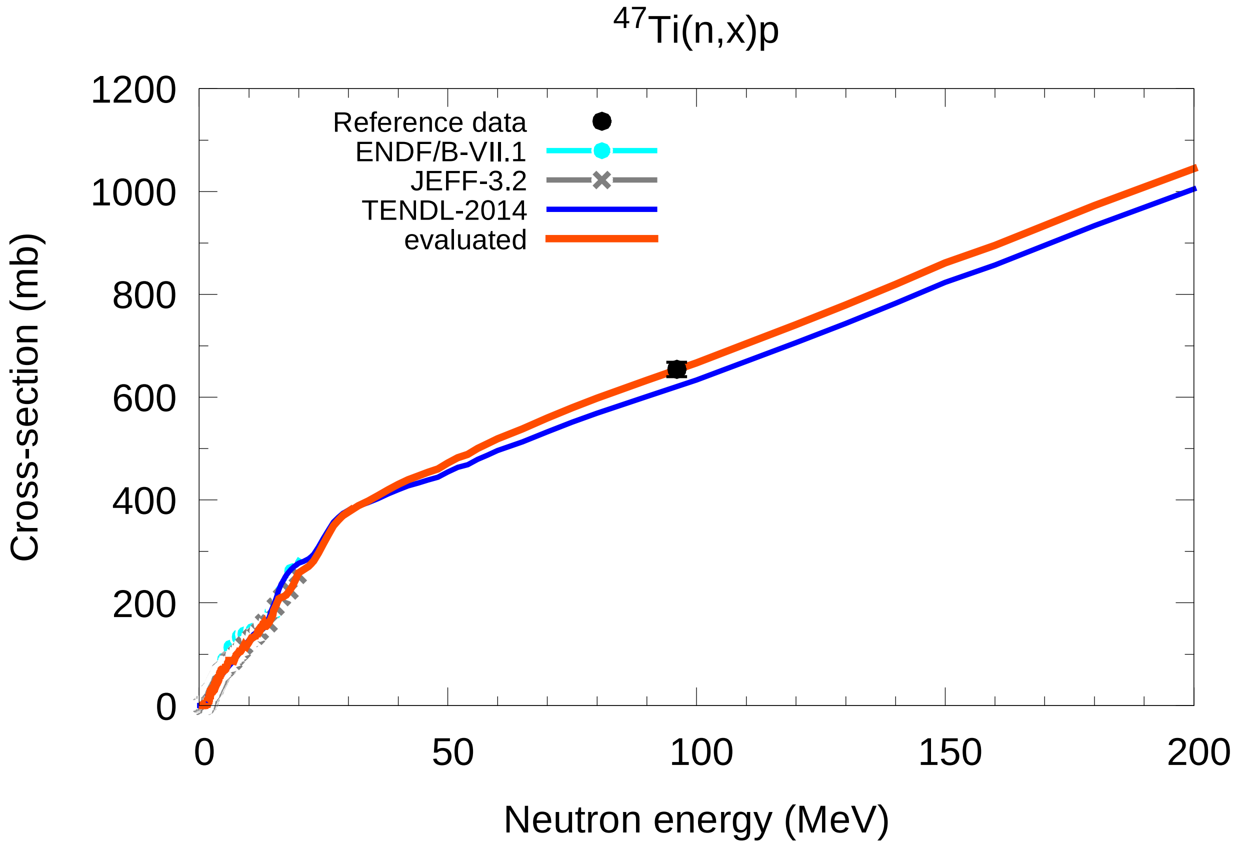
^{48}Ca(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
0
50
100
150
200



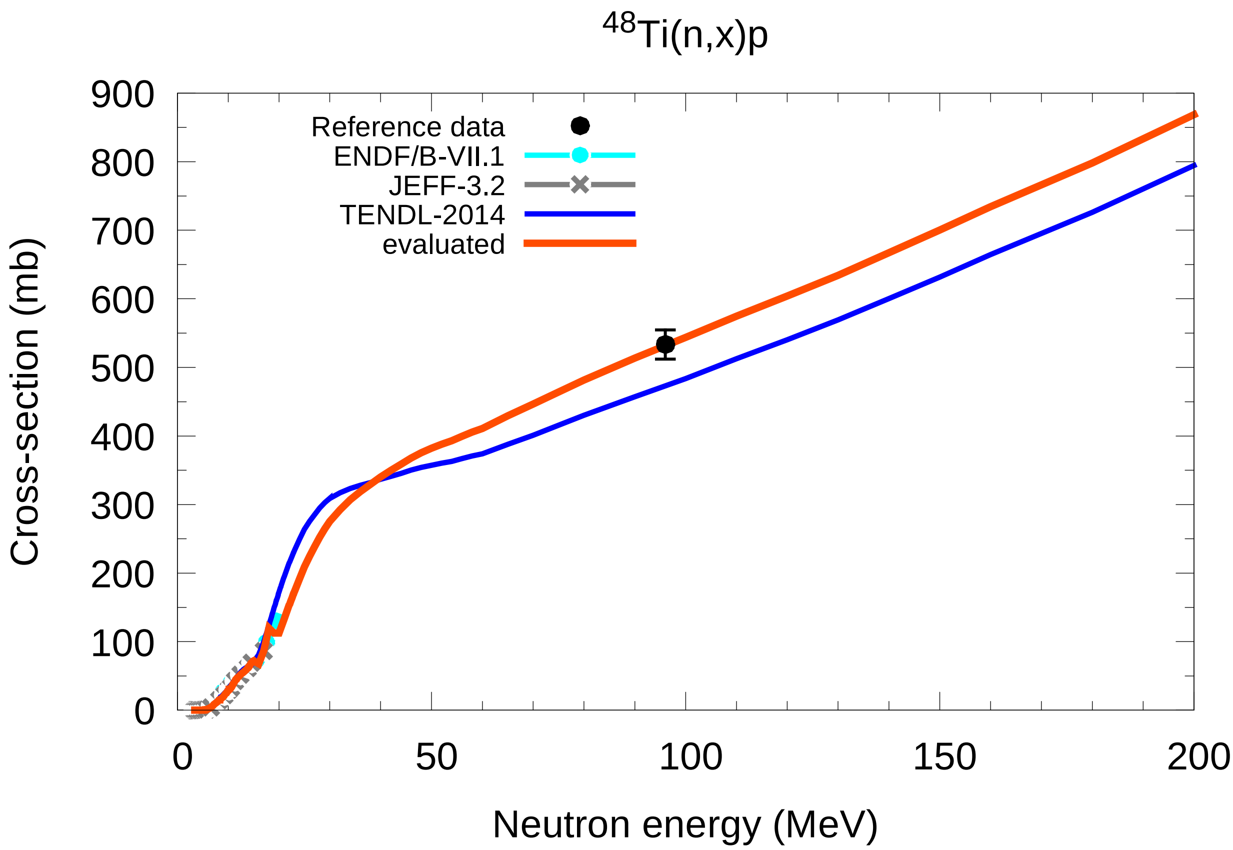
^{45}Sc(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
0
50
100
150
200



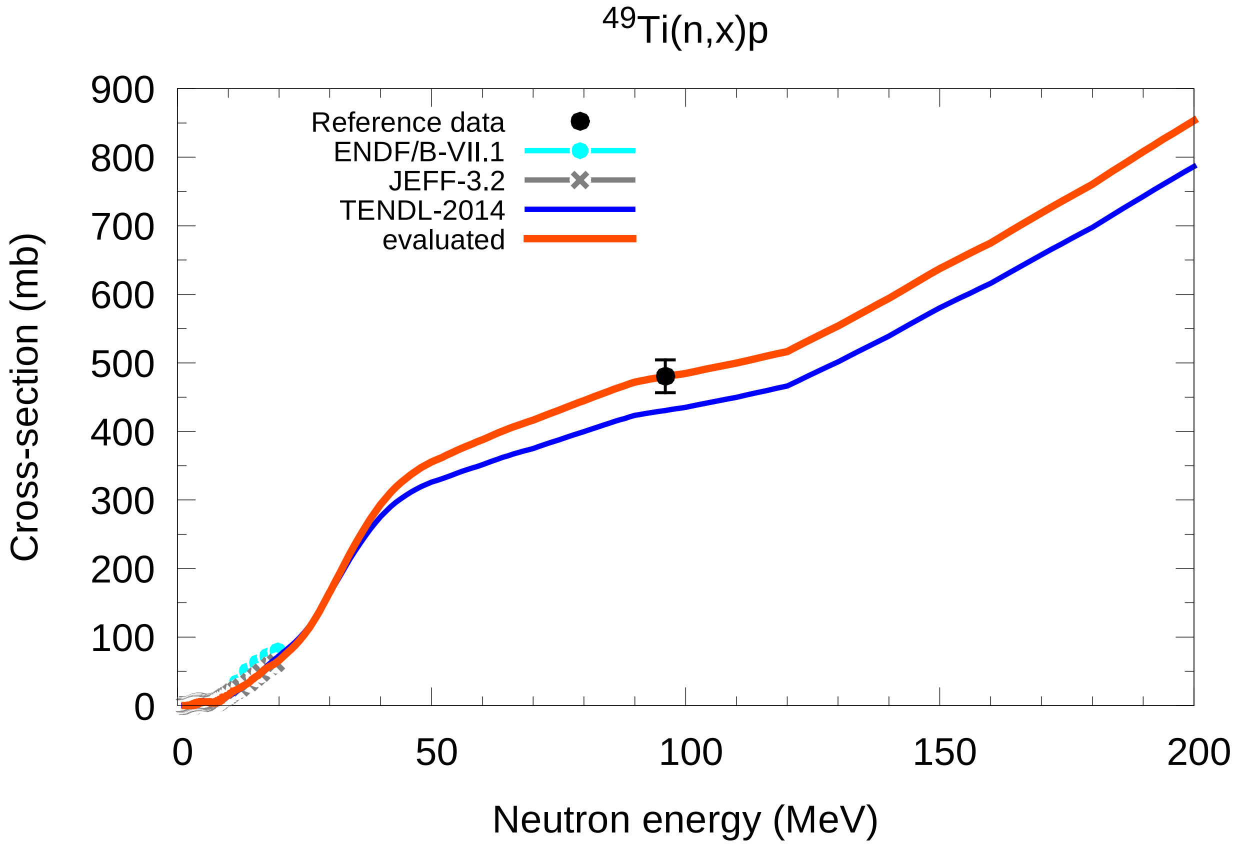
^{46}Ti(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
0
50
100
150
200



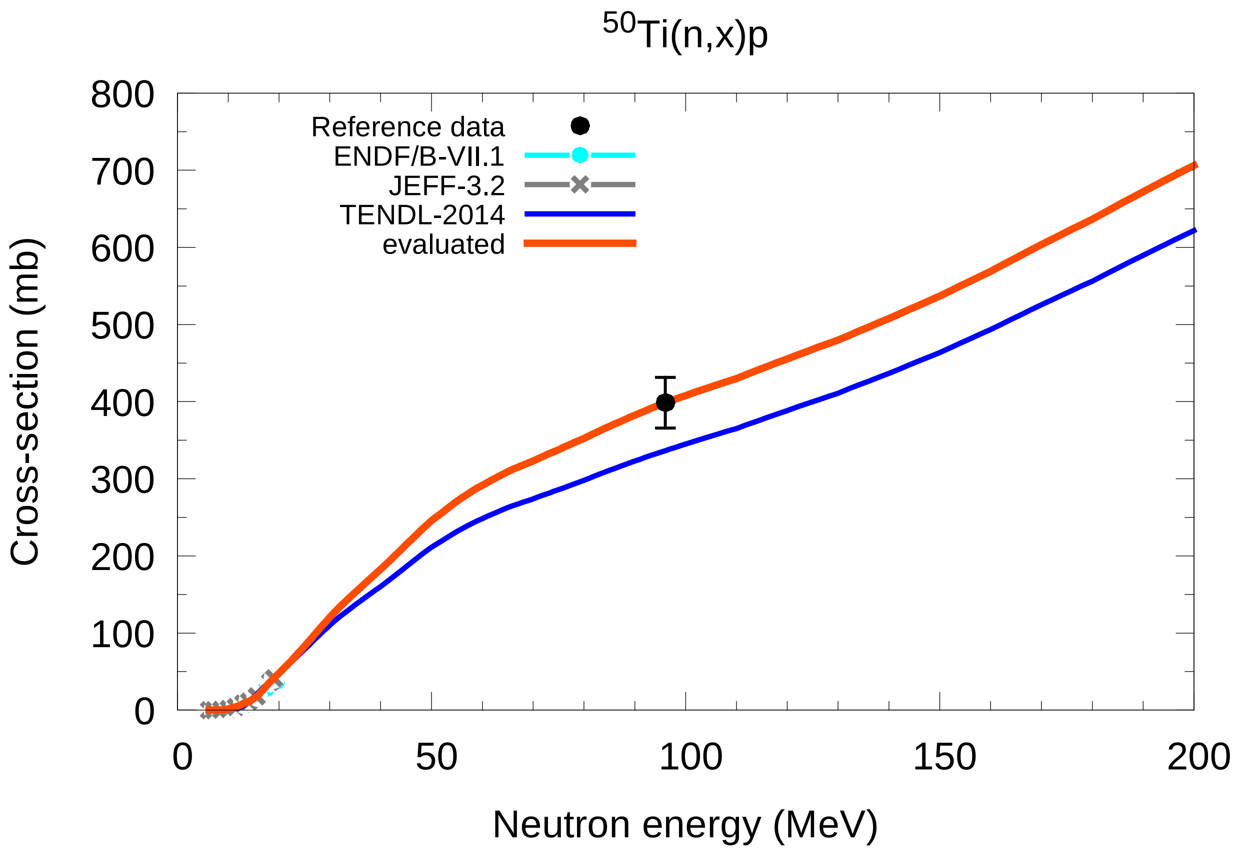
^{47}Ti(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
0
50
100
150
200



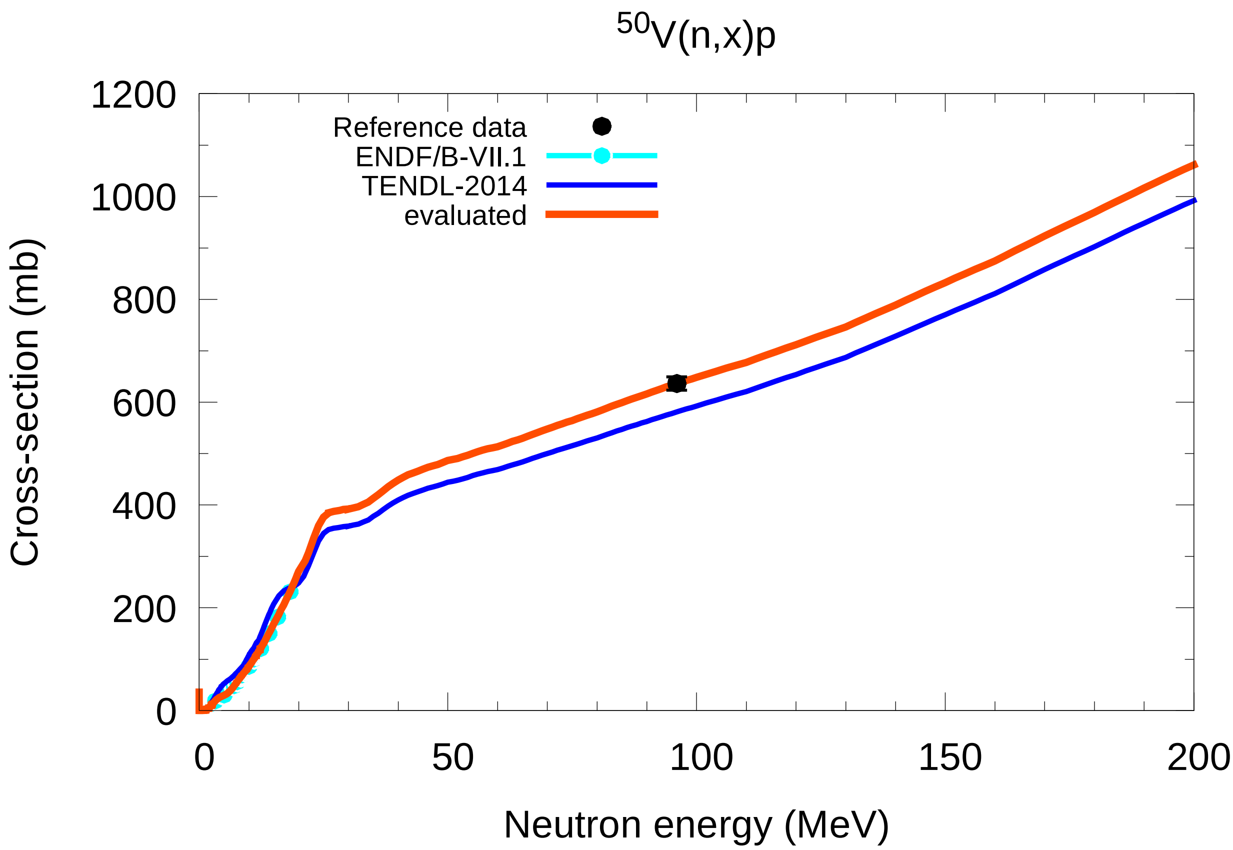
^{48}Ti(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
0
50
100
150
200



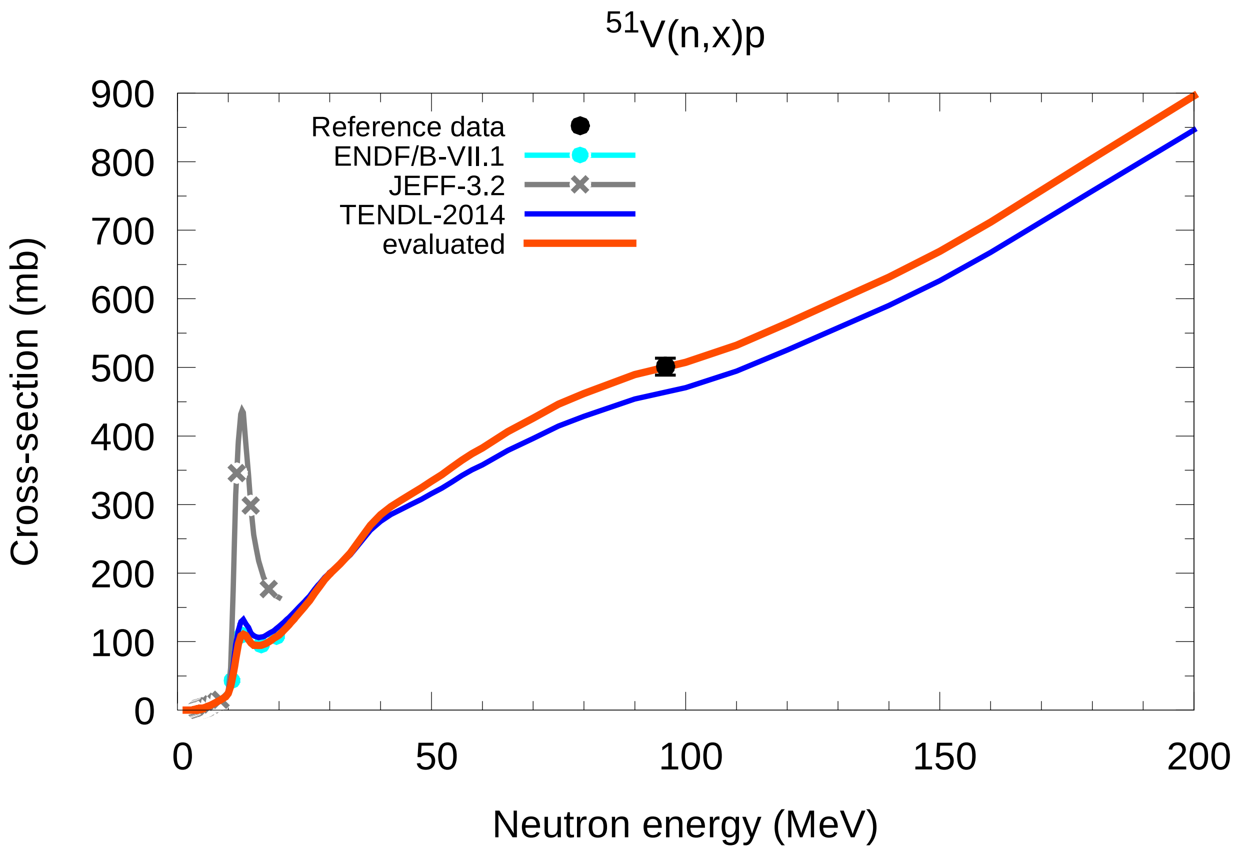
^{49}Ti(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)



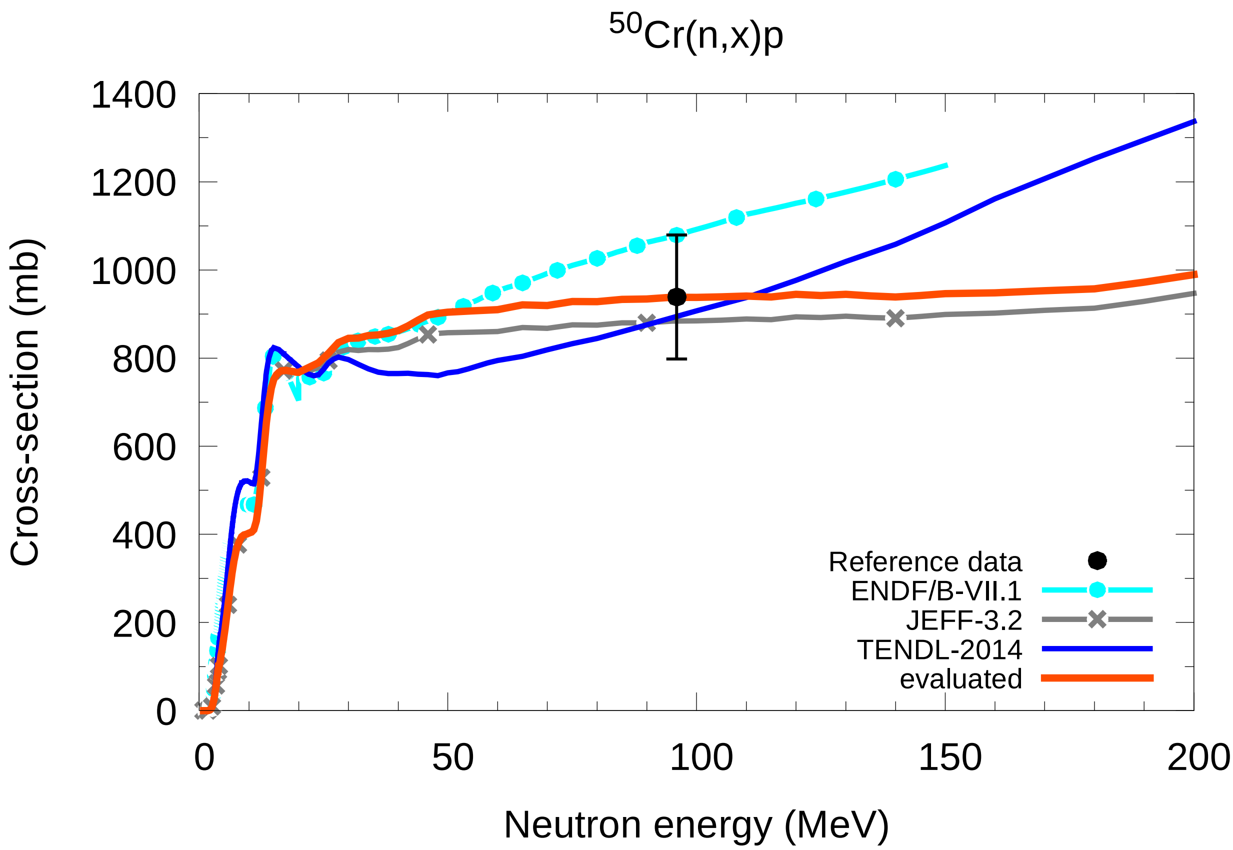
^{50}Ti(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)



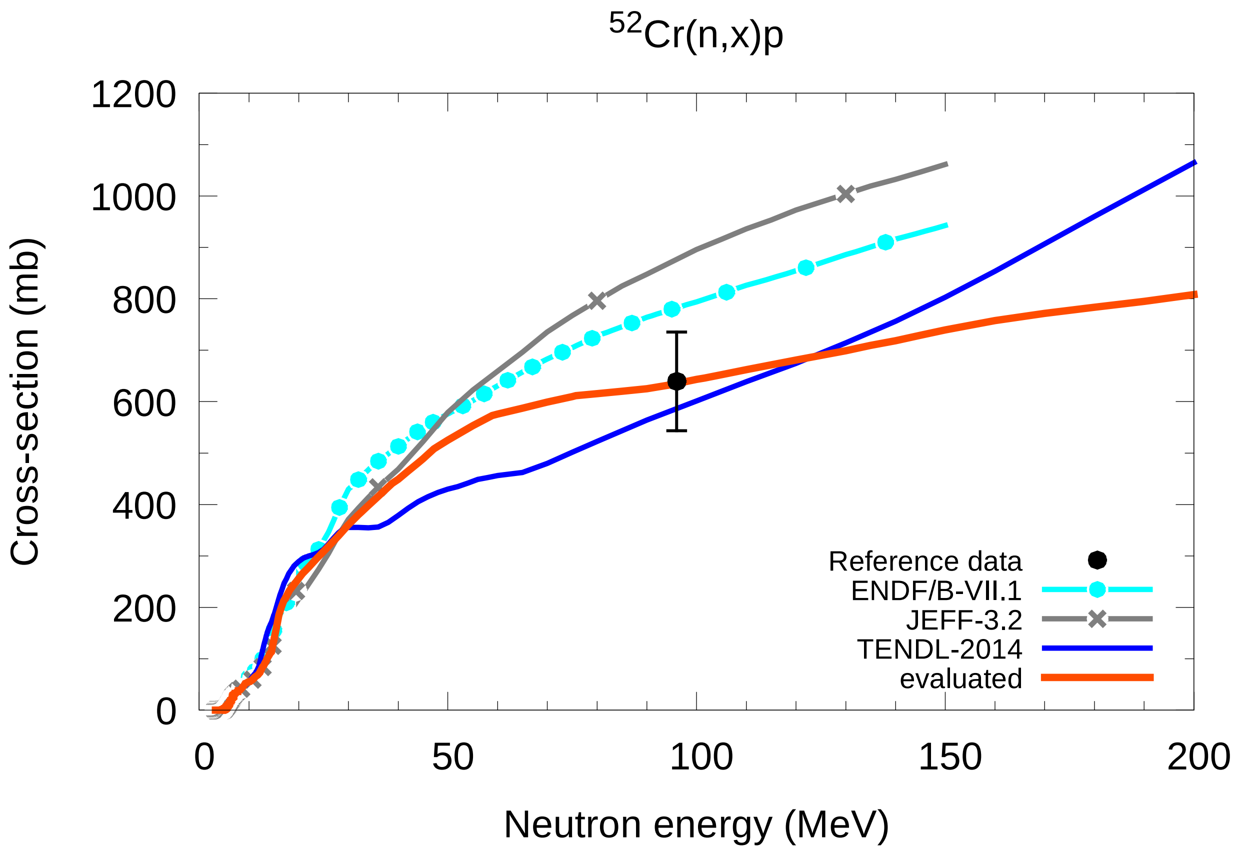
^{50}V(n,x)p
Reference data
ENDF/B-VII.1
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
0
50
100
150
200



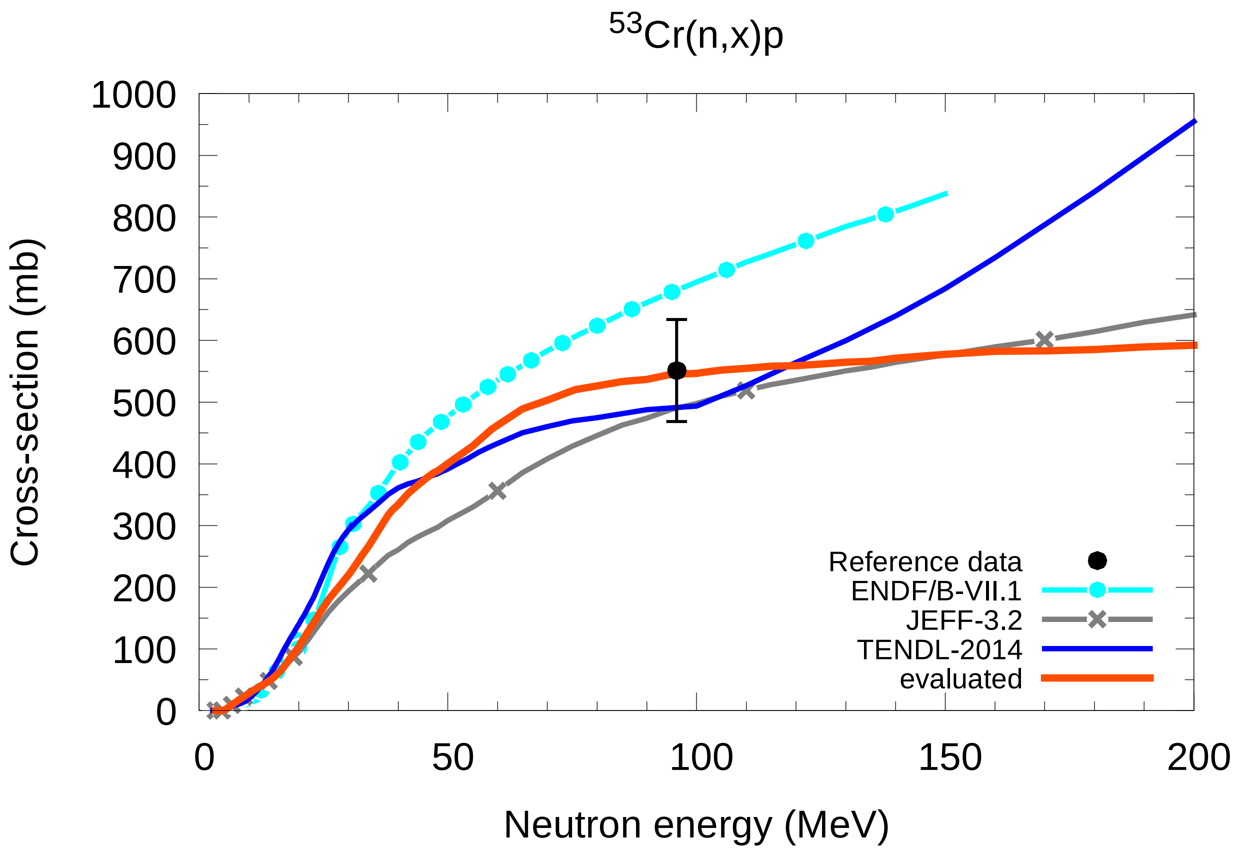
^{51}V(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
0
50
100
150
200



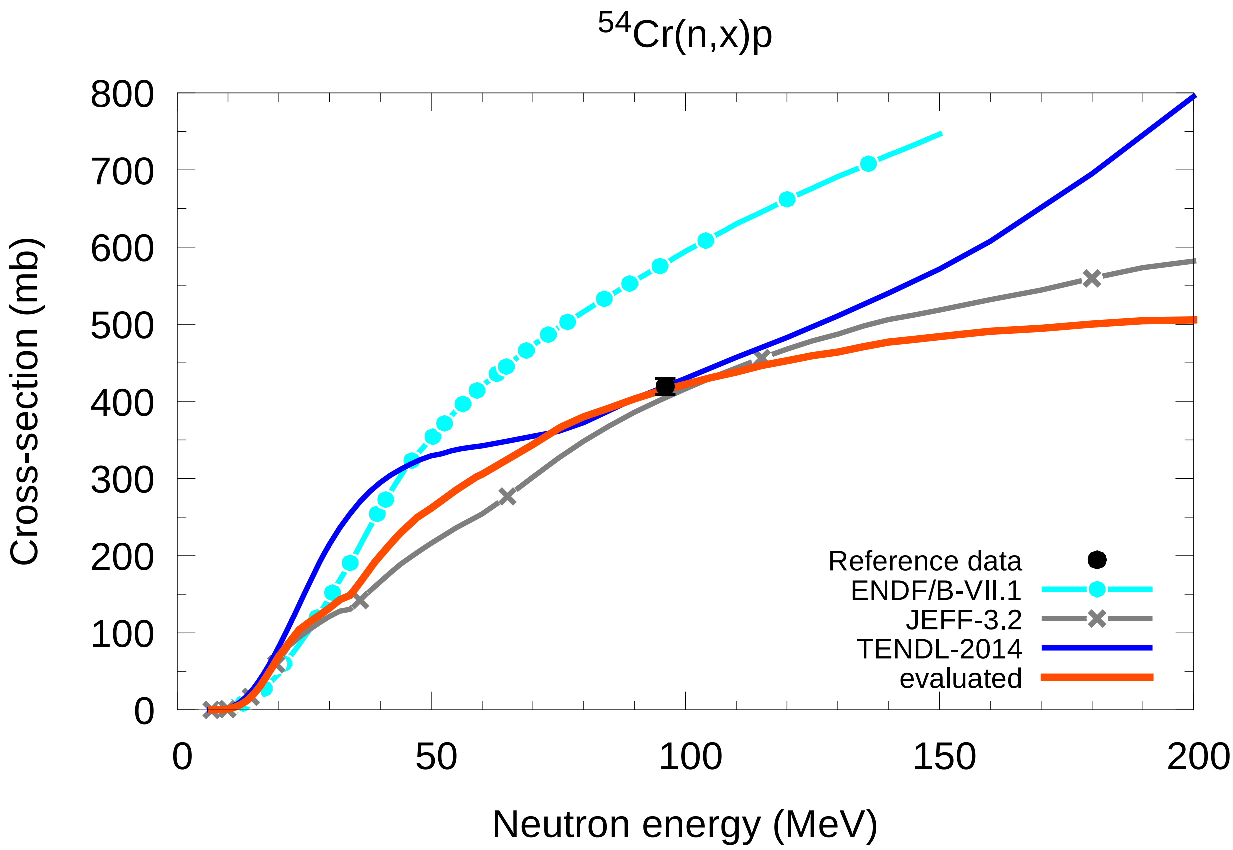
^{50}Cr(n,x)p
1400
1200
1000
800
600
400
200
0
0
50
100
150
200
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



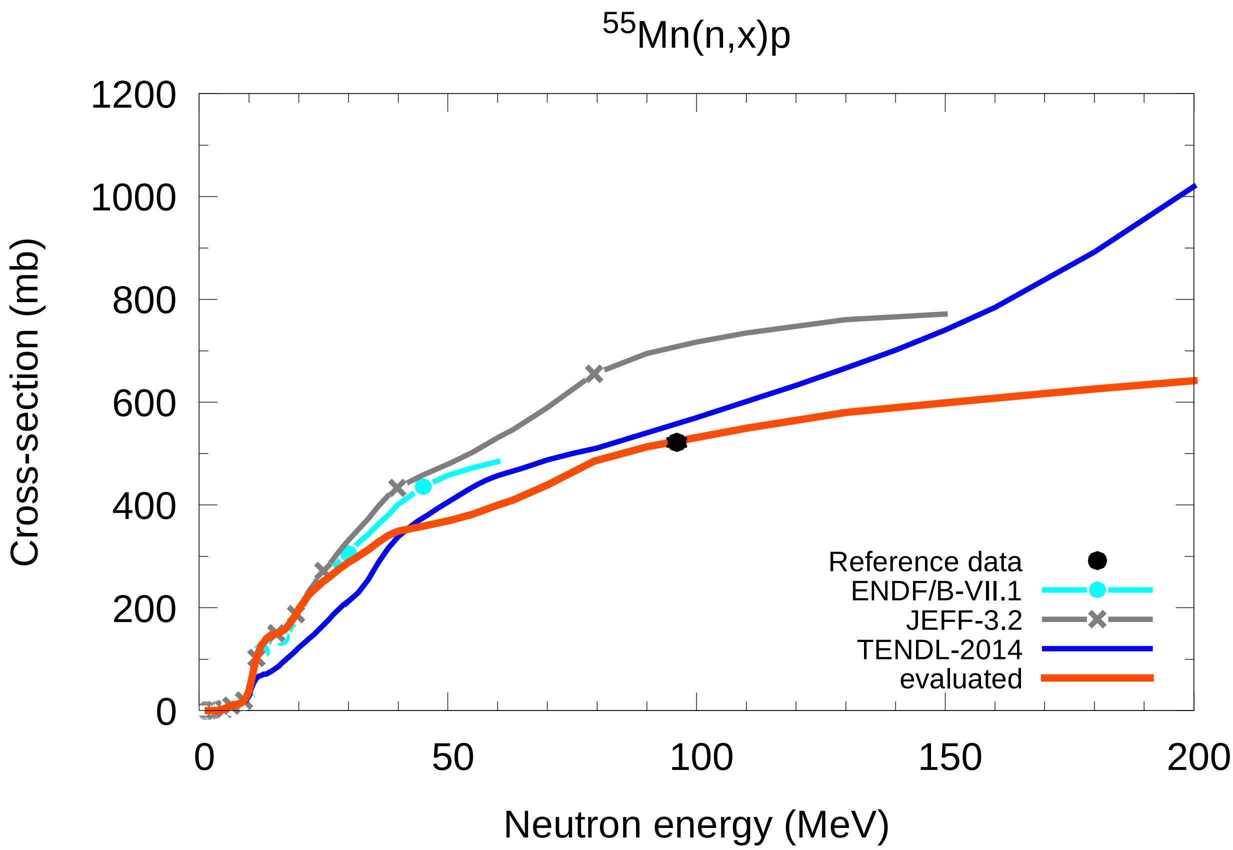
^{52}Cr(n,x)p
1200
1000
800
600
400
200
0
0
50
100
150
200
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



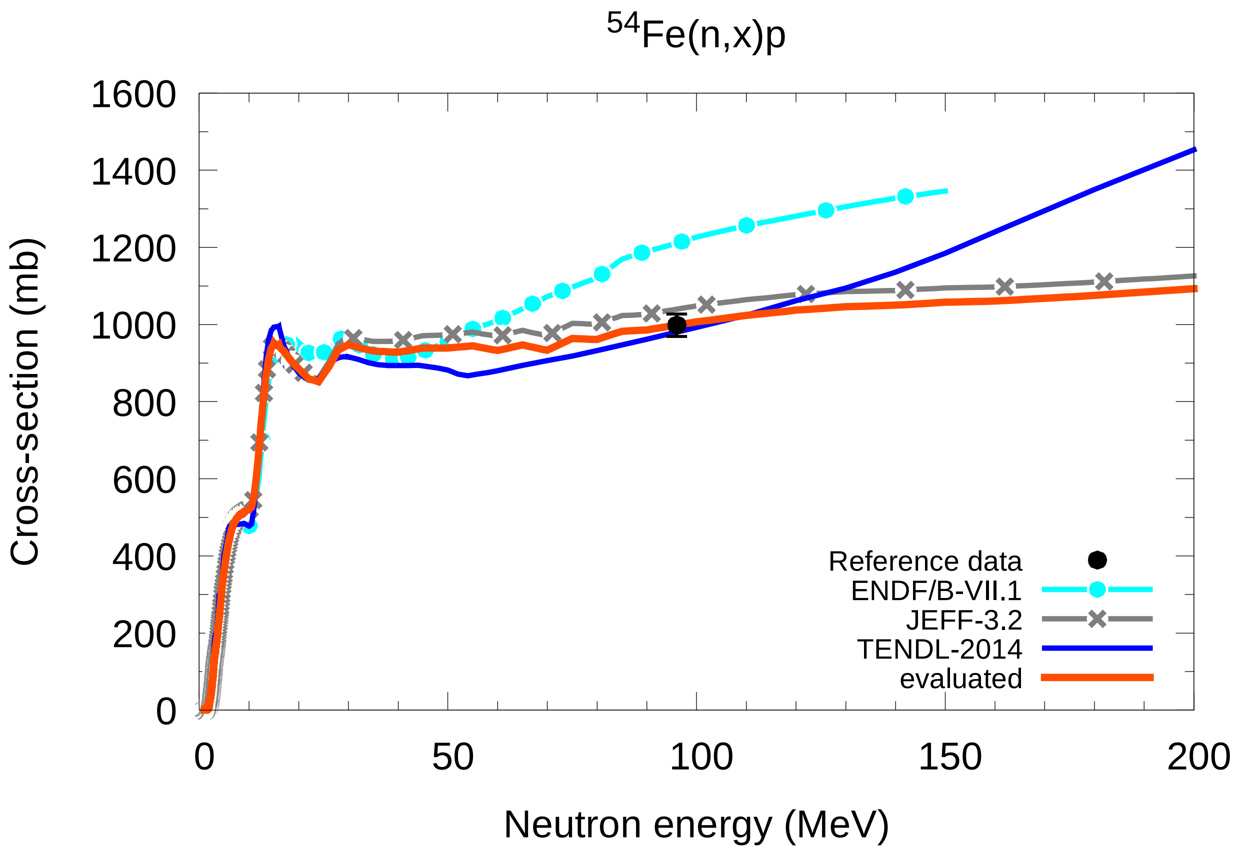
^{53}Cr(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



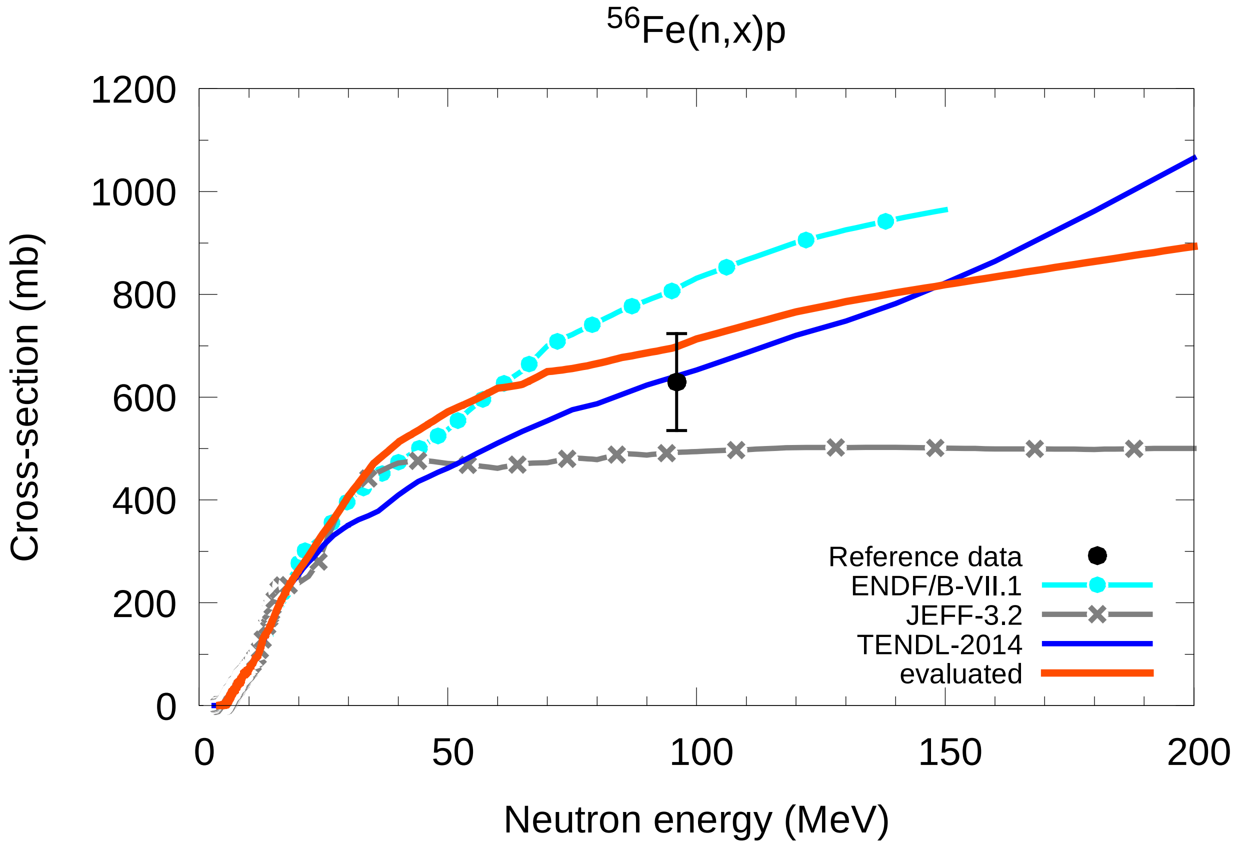
^{54}Cr(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



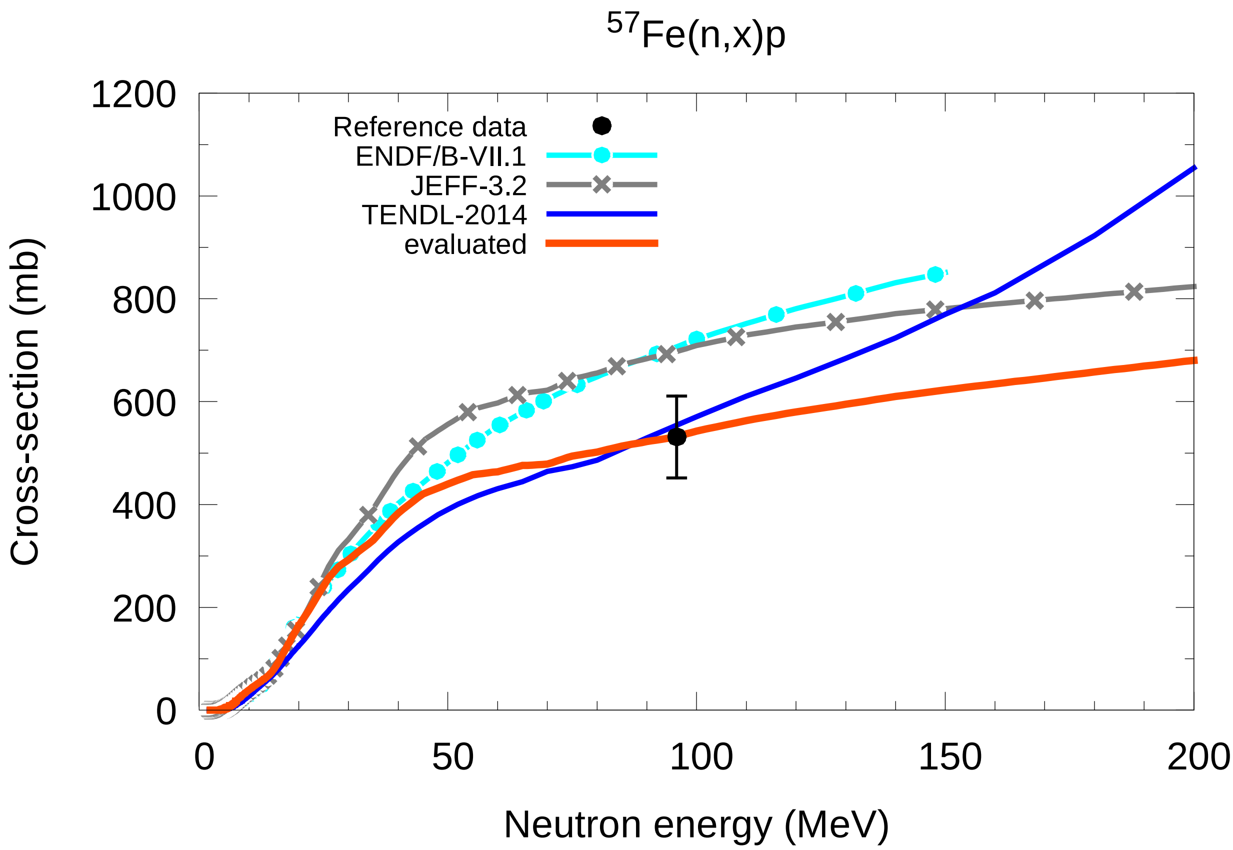
^{55}Mn(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
200
400
600
800
1000
1200
0
50
100
150
200



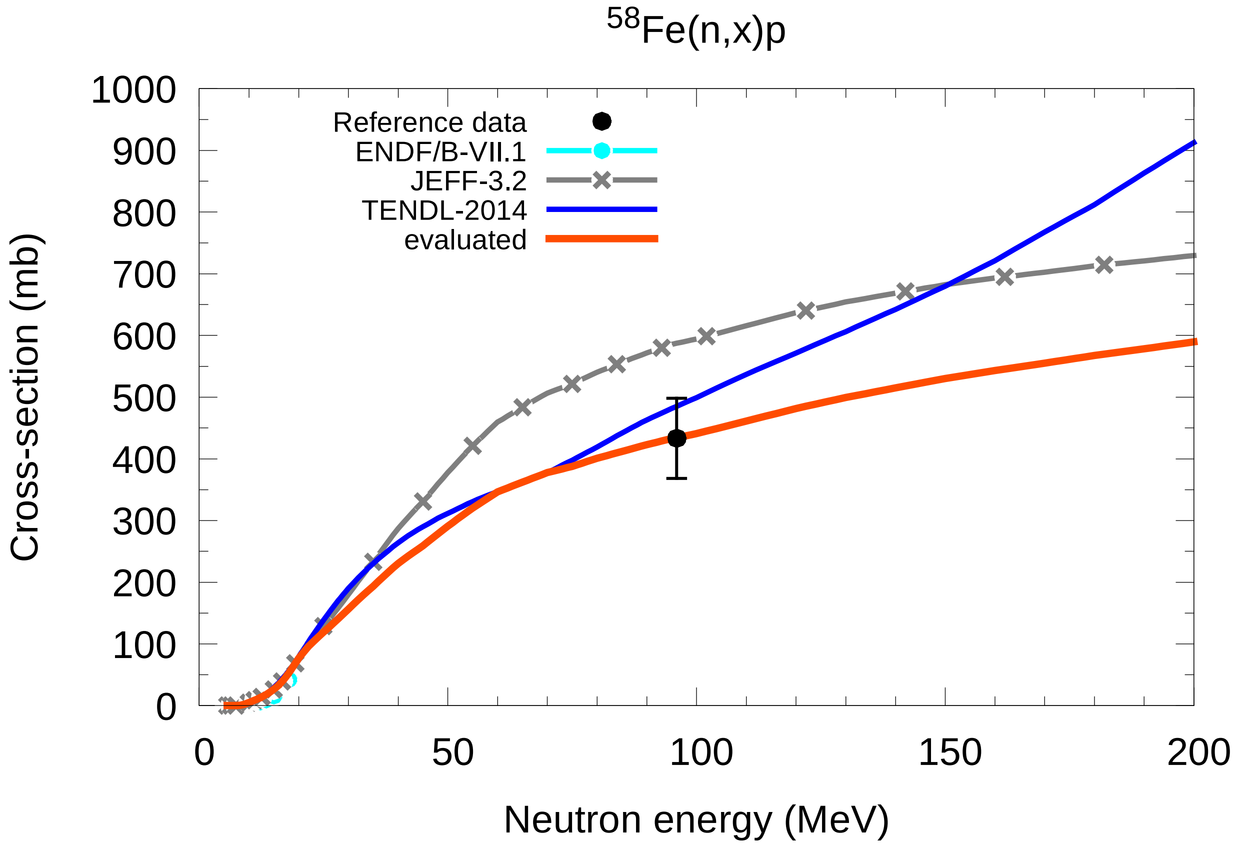
^{54}Fe(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
200
400
600
800
1000
1200
1400
1600
0
50
100
150
200



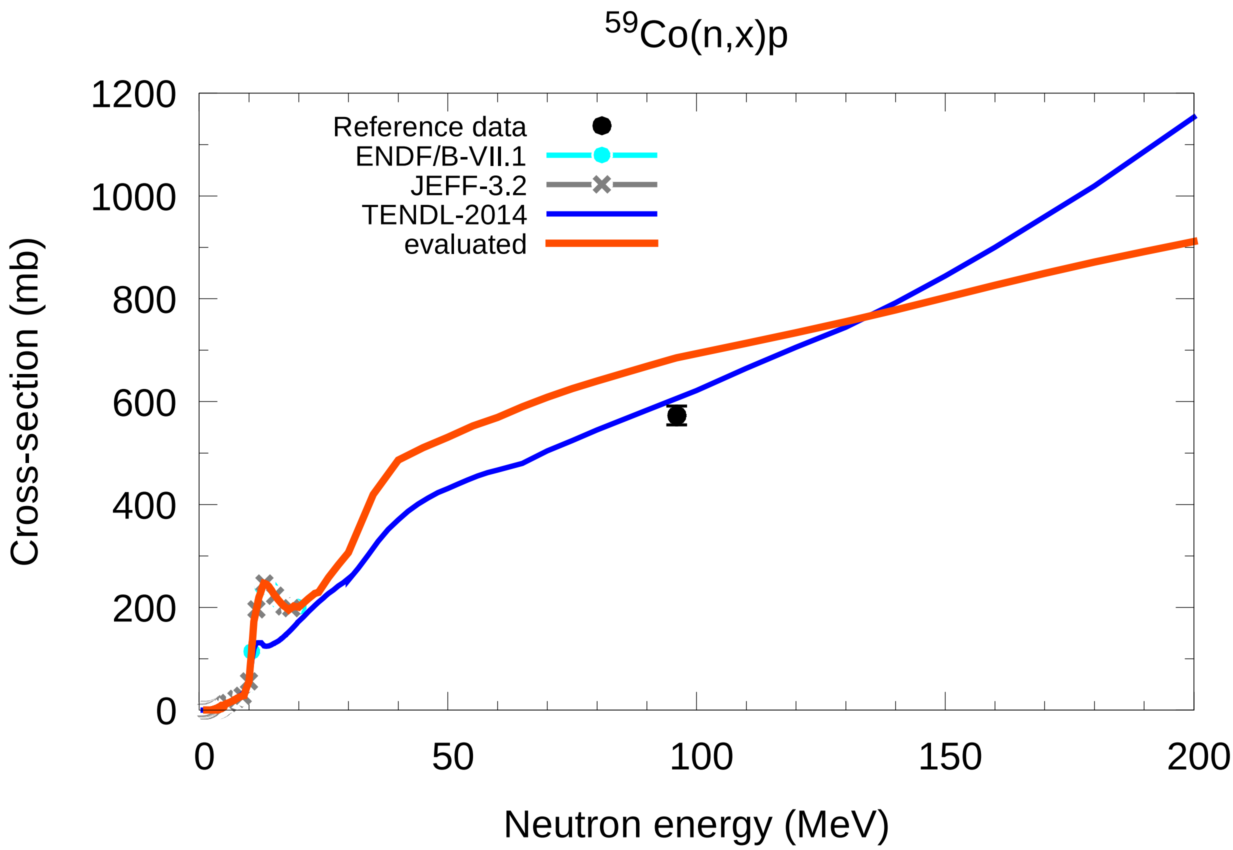
56Fe(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



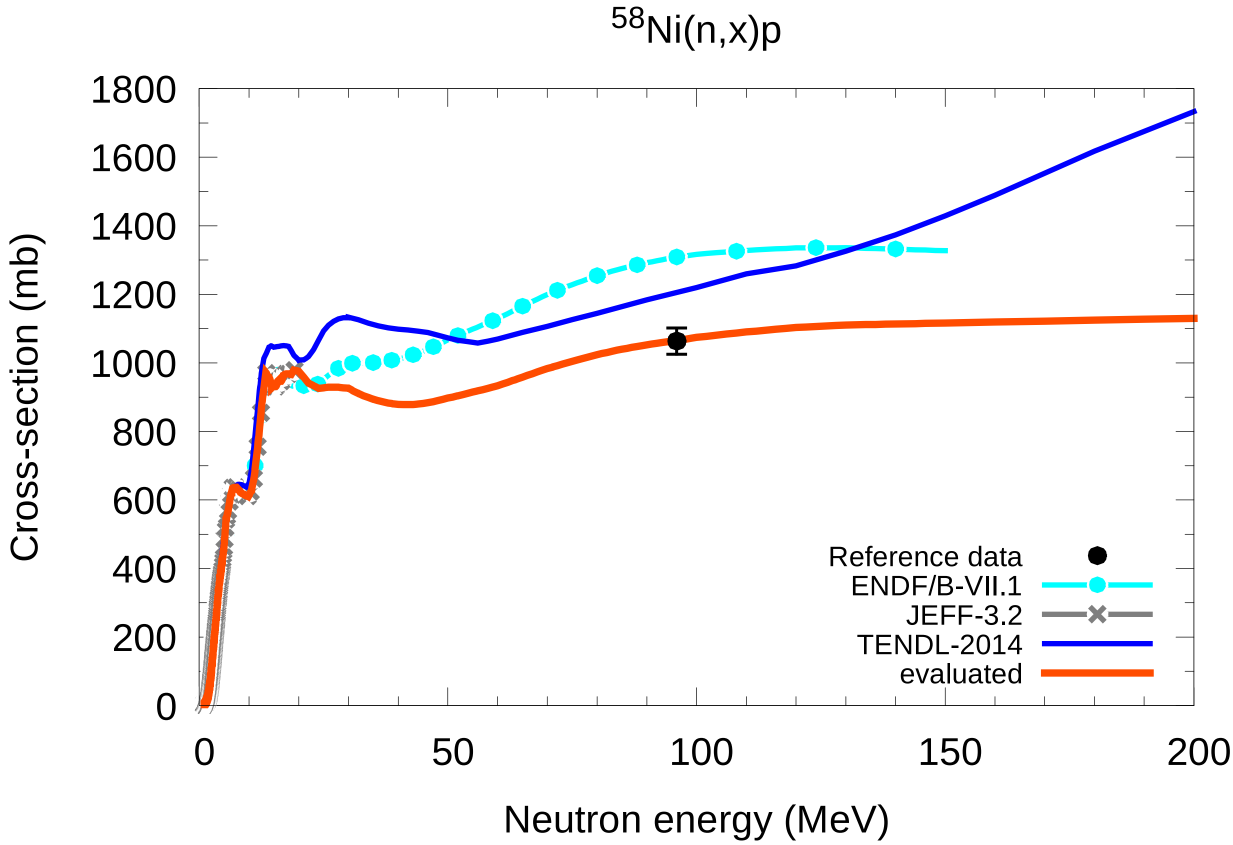
57Fe(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



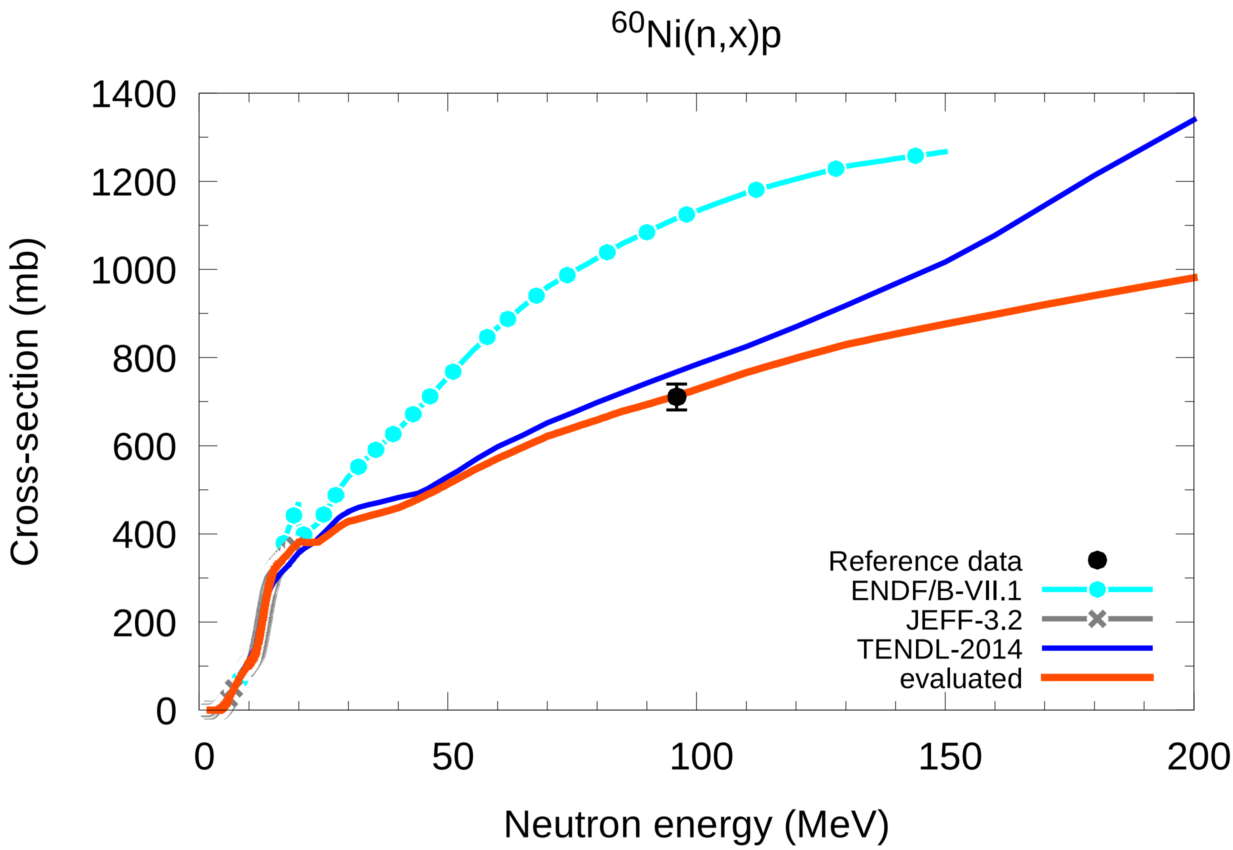
^{58}Fe(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)



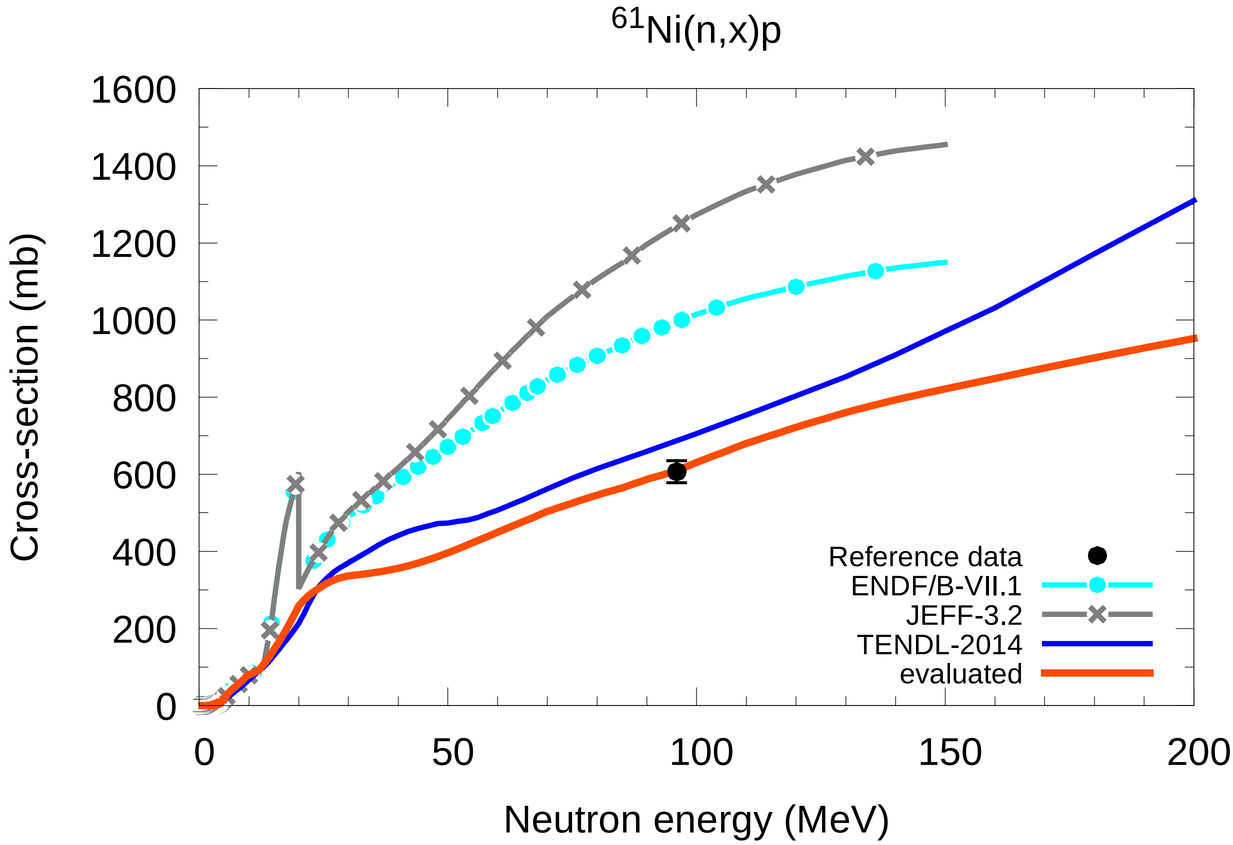
^{59}Co(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)



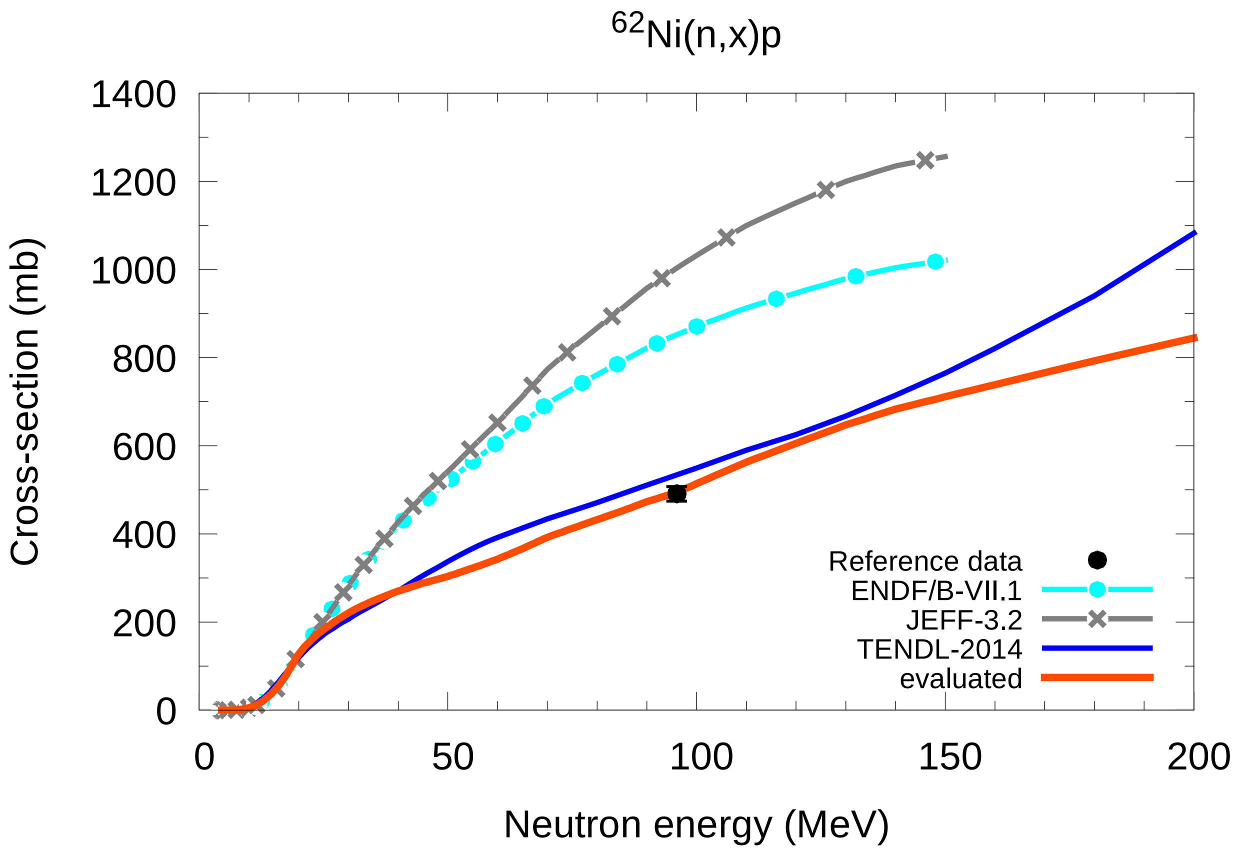
^{58}Ni(n,x)p
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



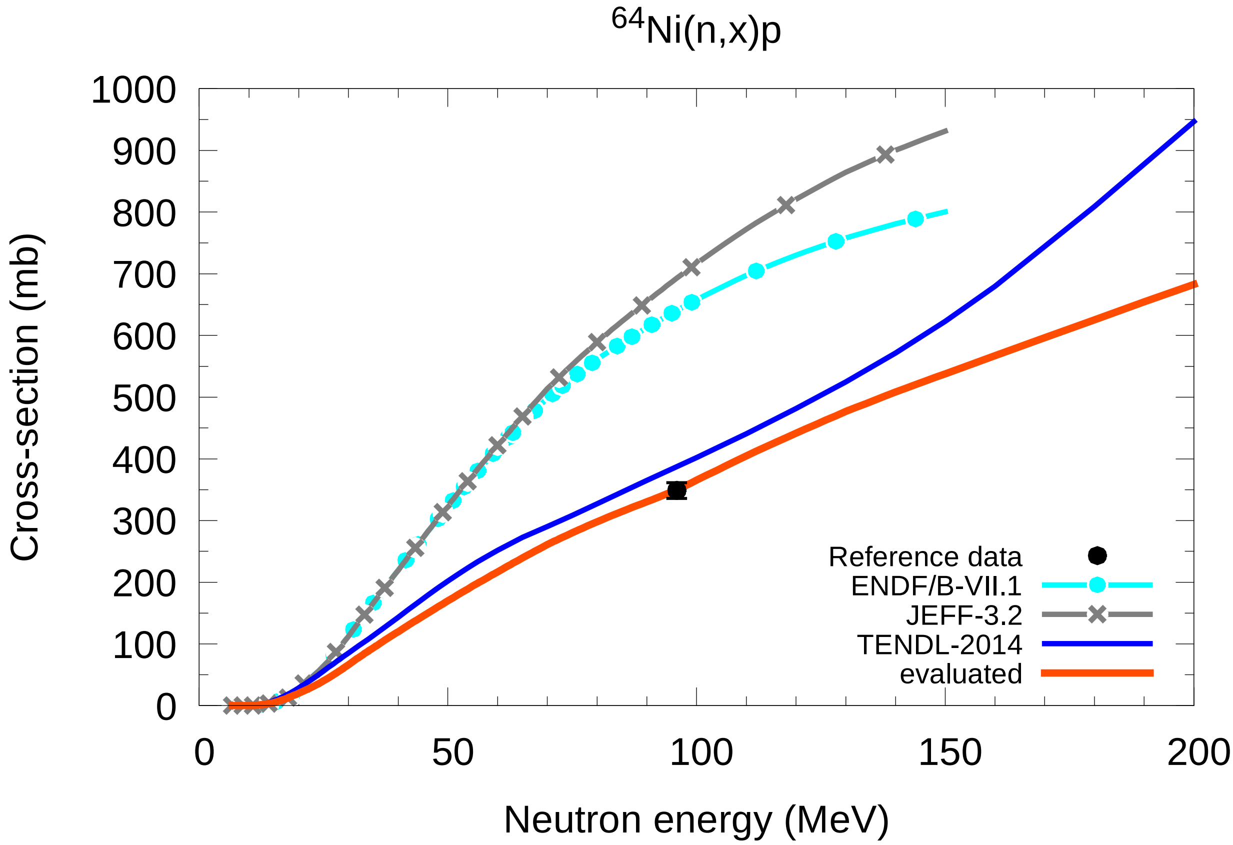
^{60}Ni(n,x)p
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



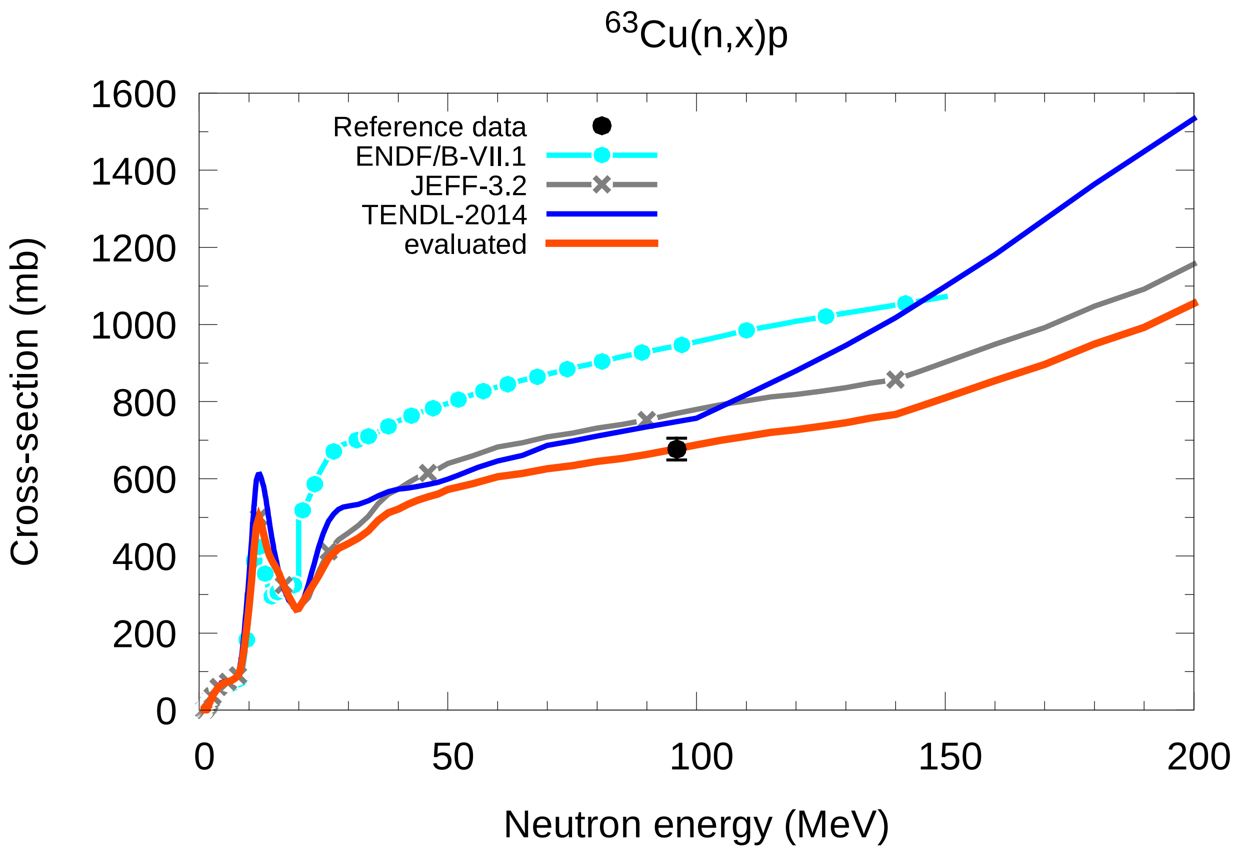
^{61}Ni(n,x)p
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



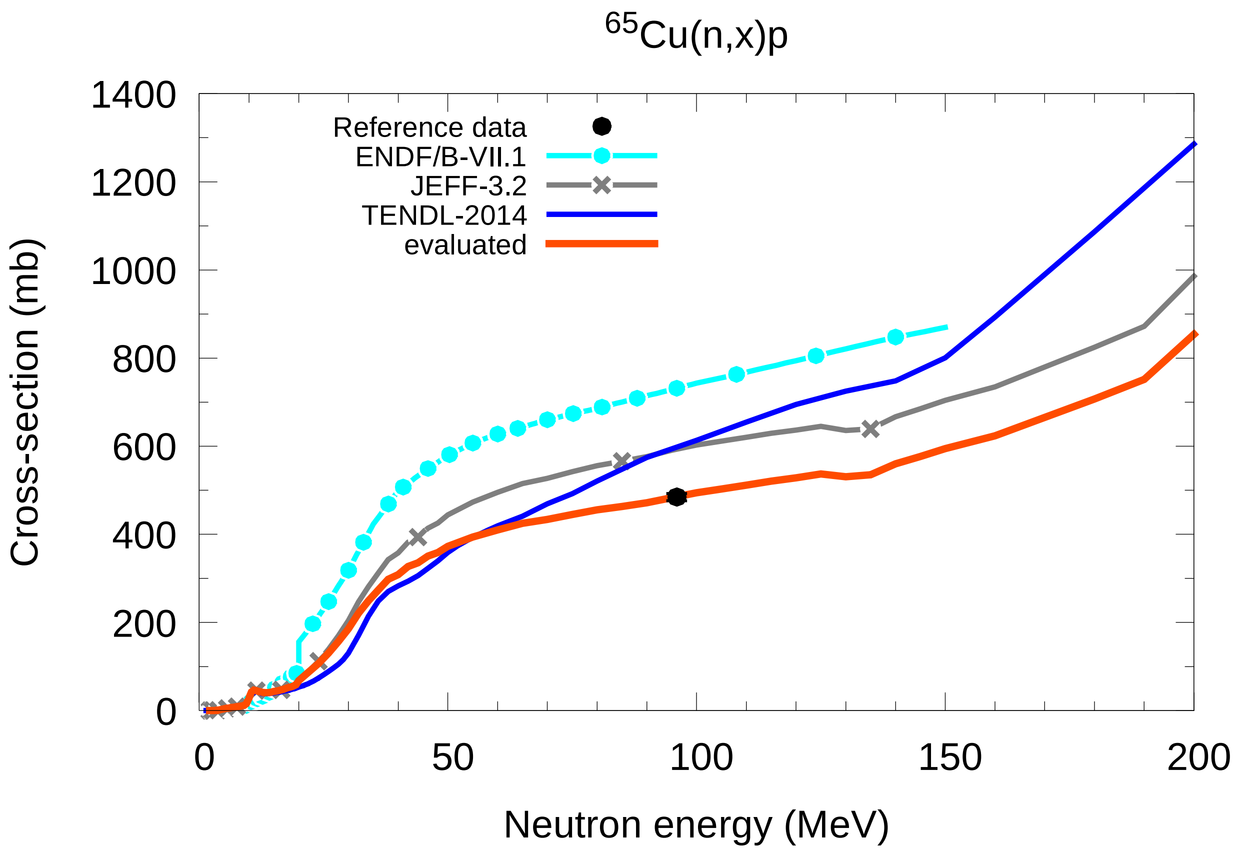
^{62}Ni(n,x)p
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



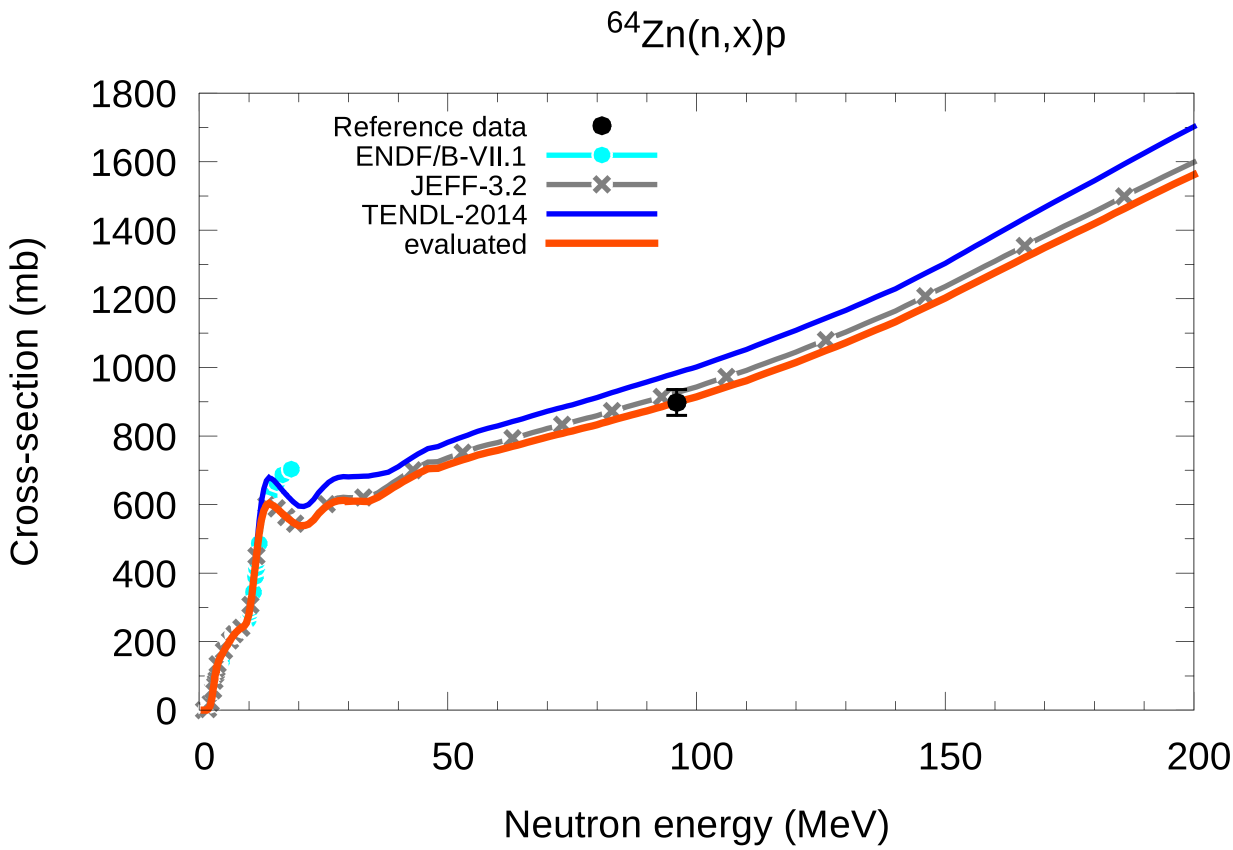
^{64}Ni(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
100
200
300
400
500
600
700
800
900
1000
0
50
100
150
200



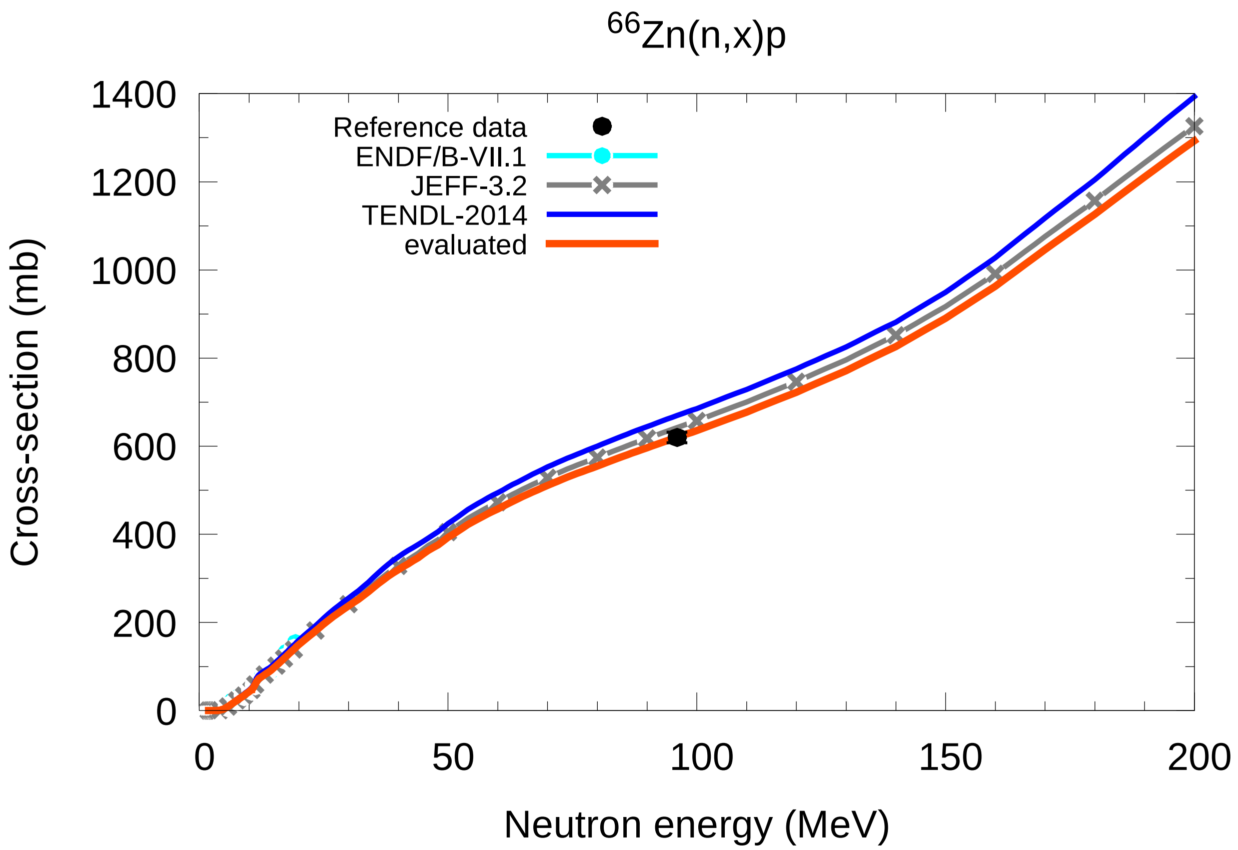
^{63}Cu(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
200
400
600
800
1000
1200
1400
1600
0
50
100
150
200



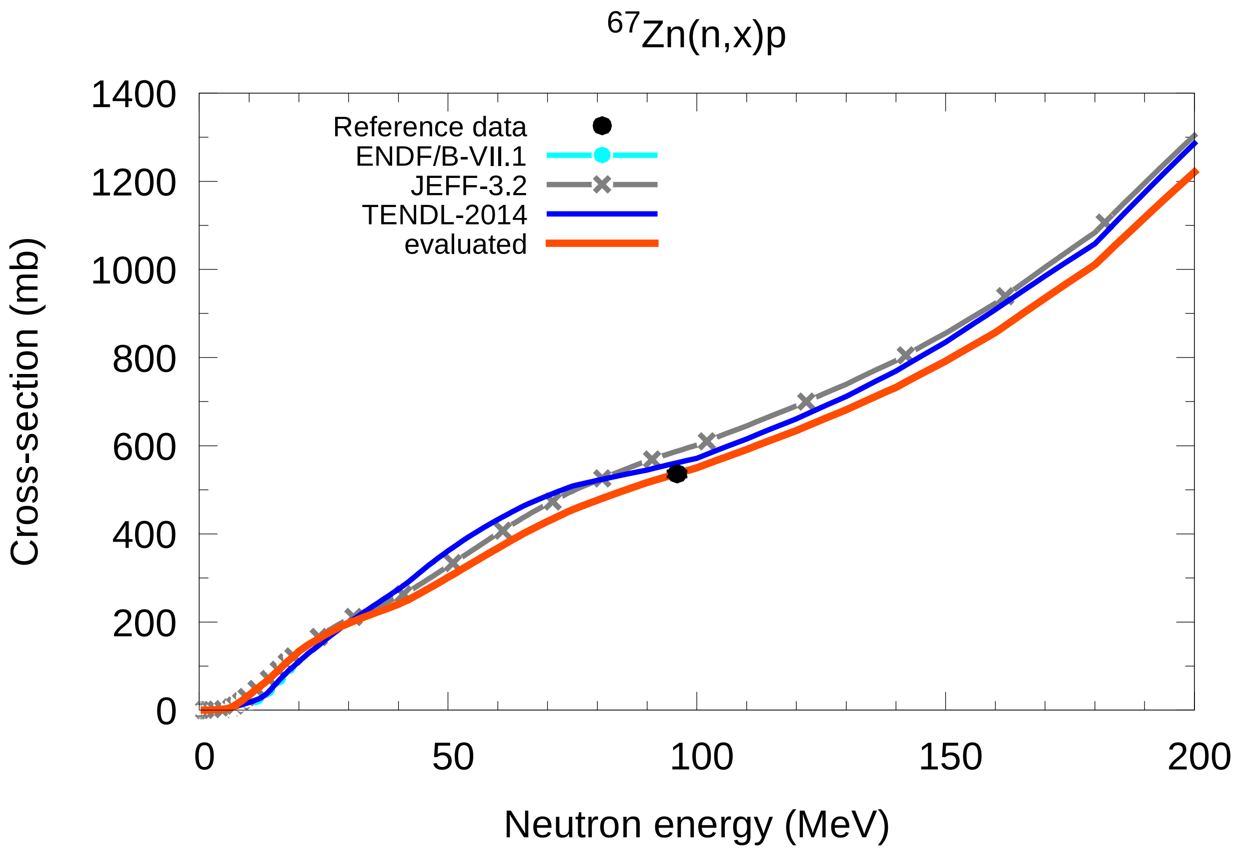
^{65}Cu(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
0
50
100
150
200



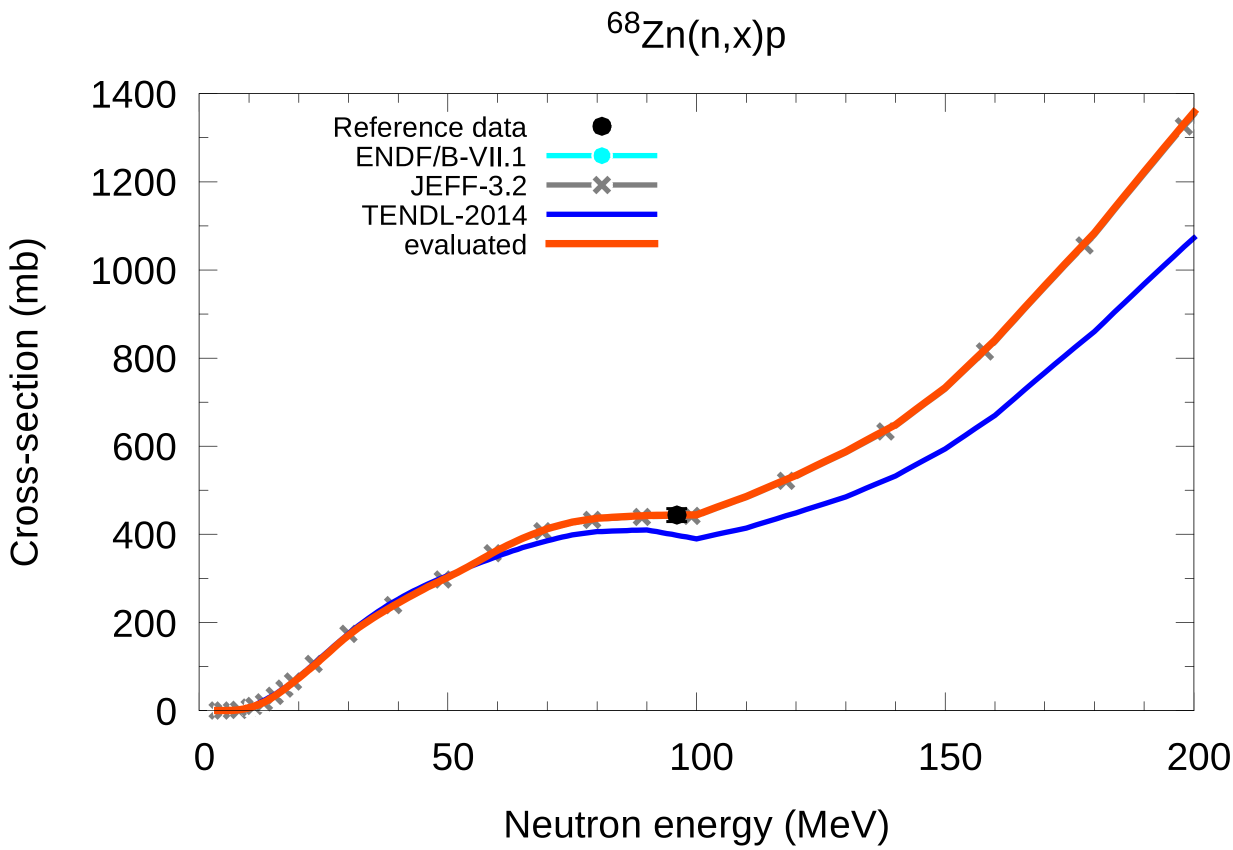
^{64}Zn(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
0
50
100
150
200

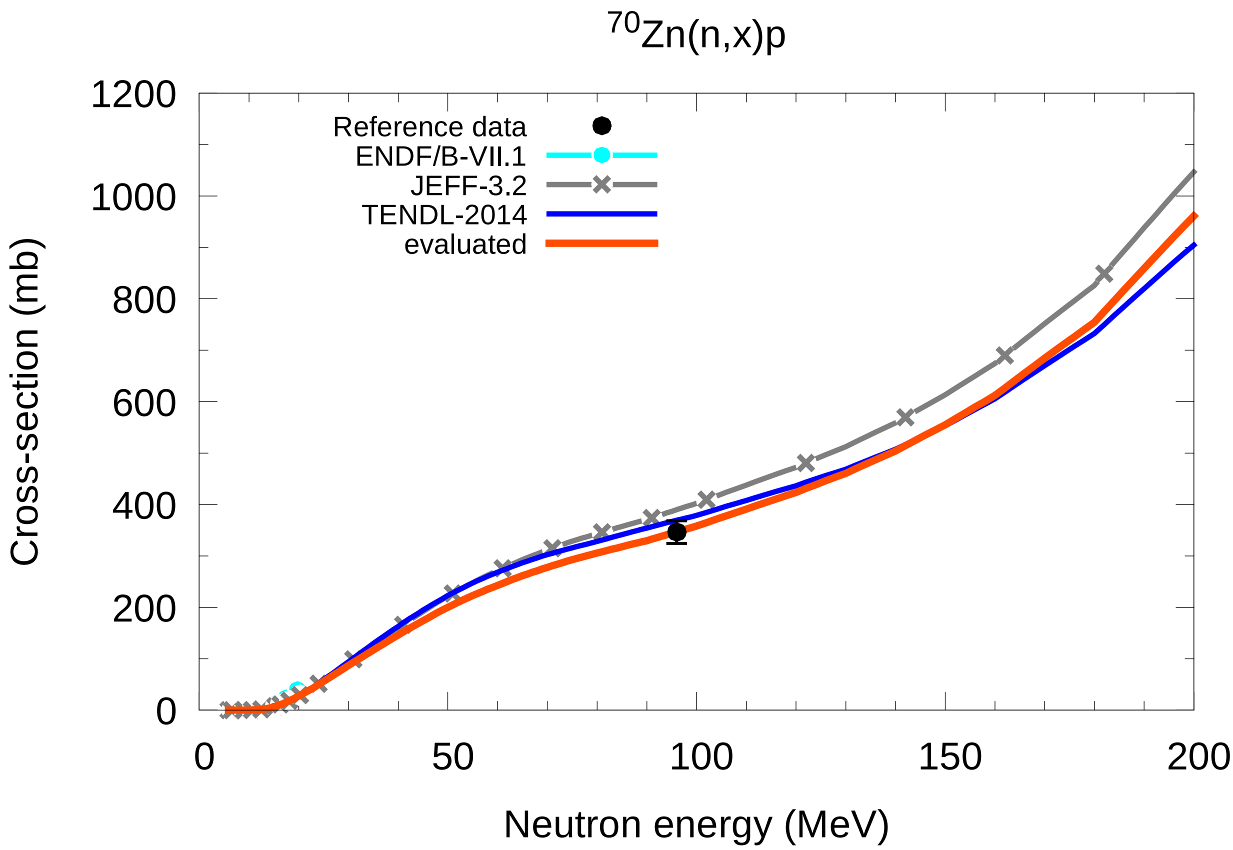


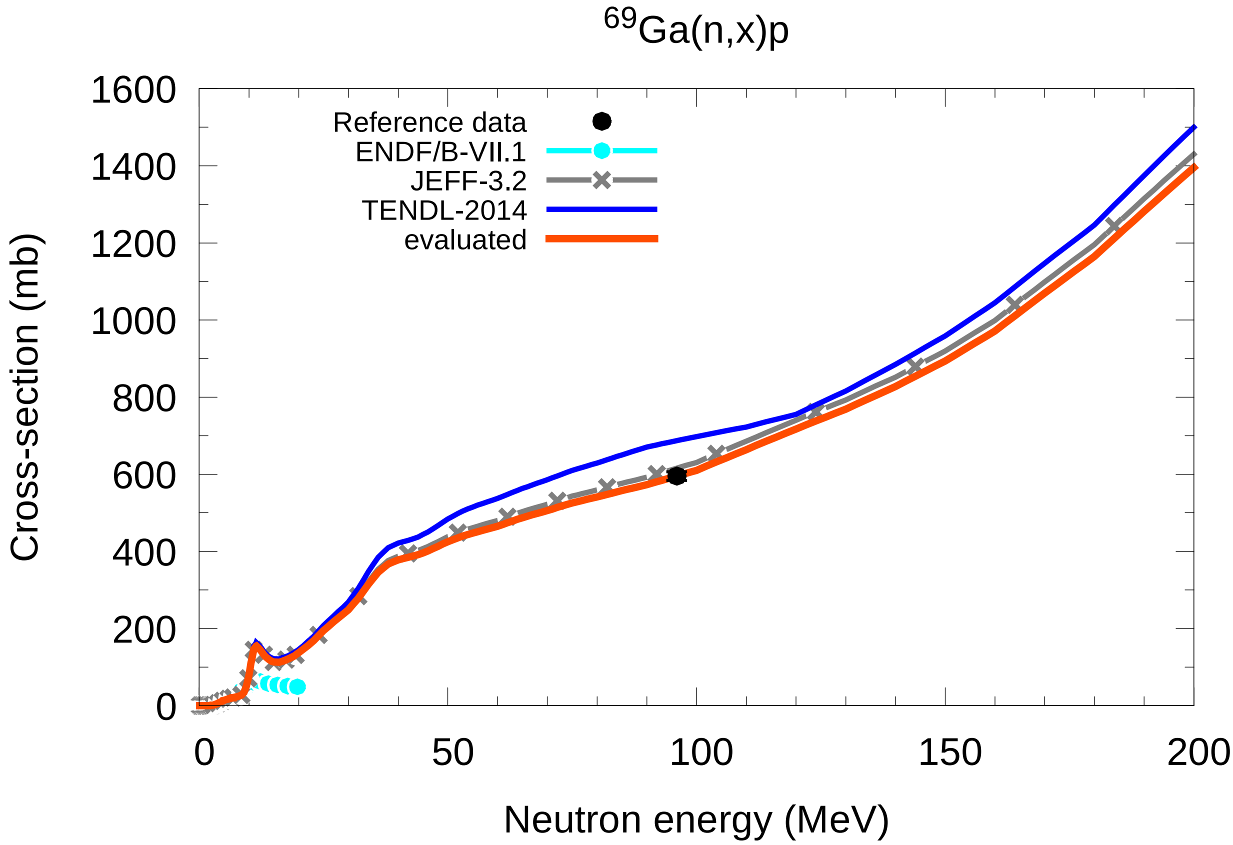
$^{66}Zn(n,x)p$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
0
50
100
150
200

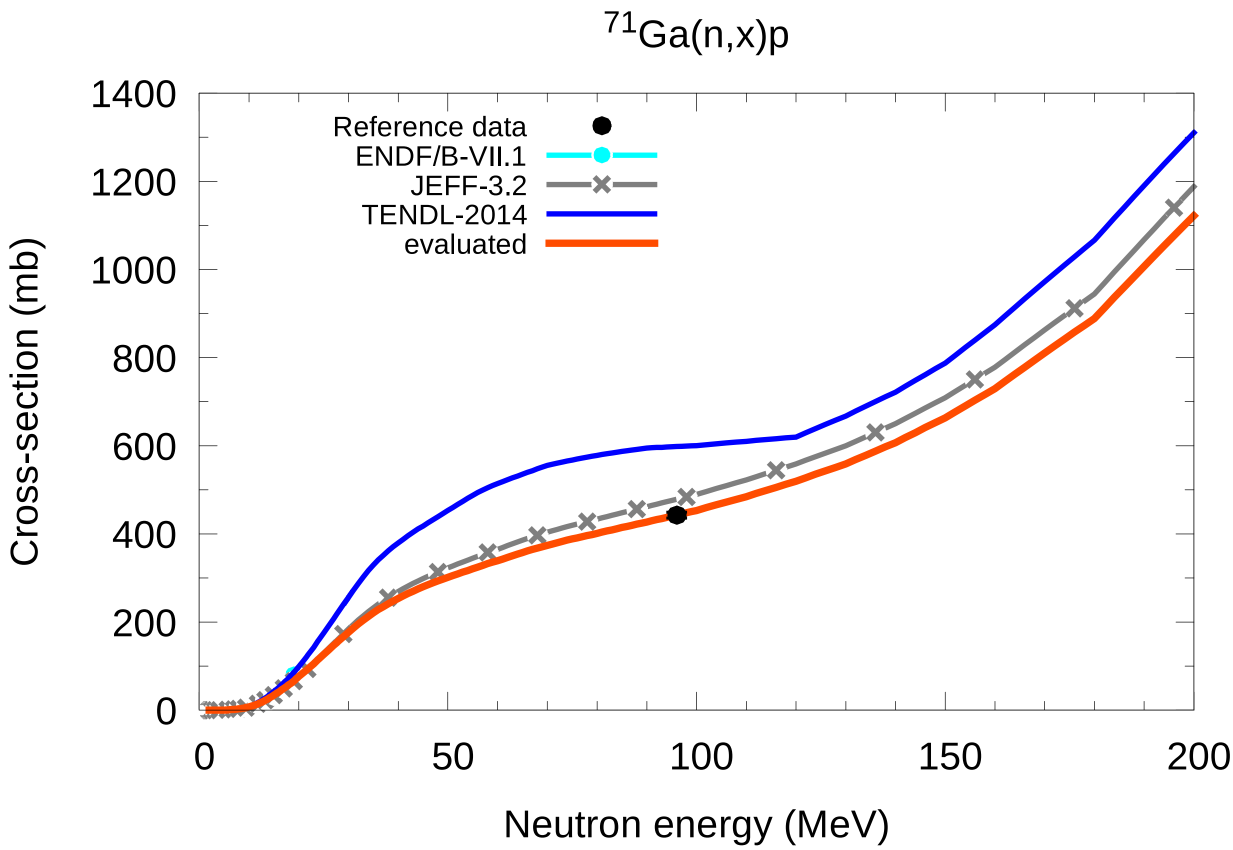


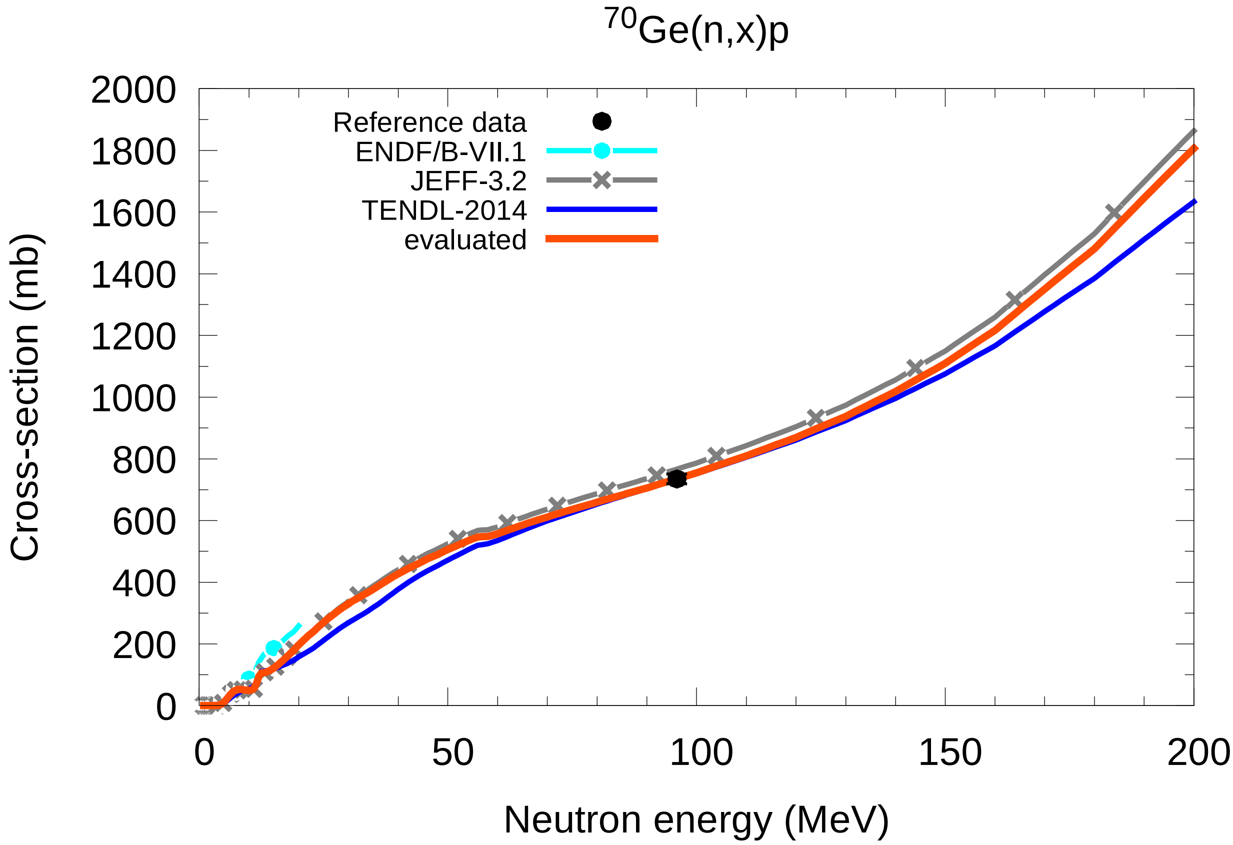
$^{67}Zn(n,x)p$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
0
50
100
150
200


68Zn(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
200
400
600
800
1000
1200
1400
0
50
100
150
200

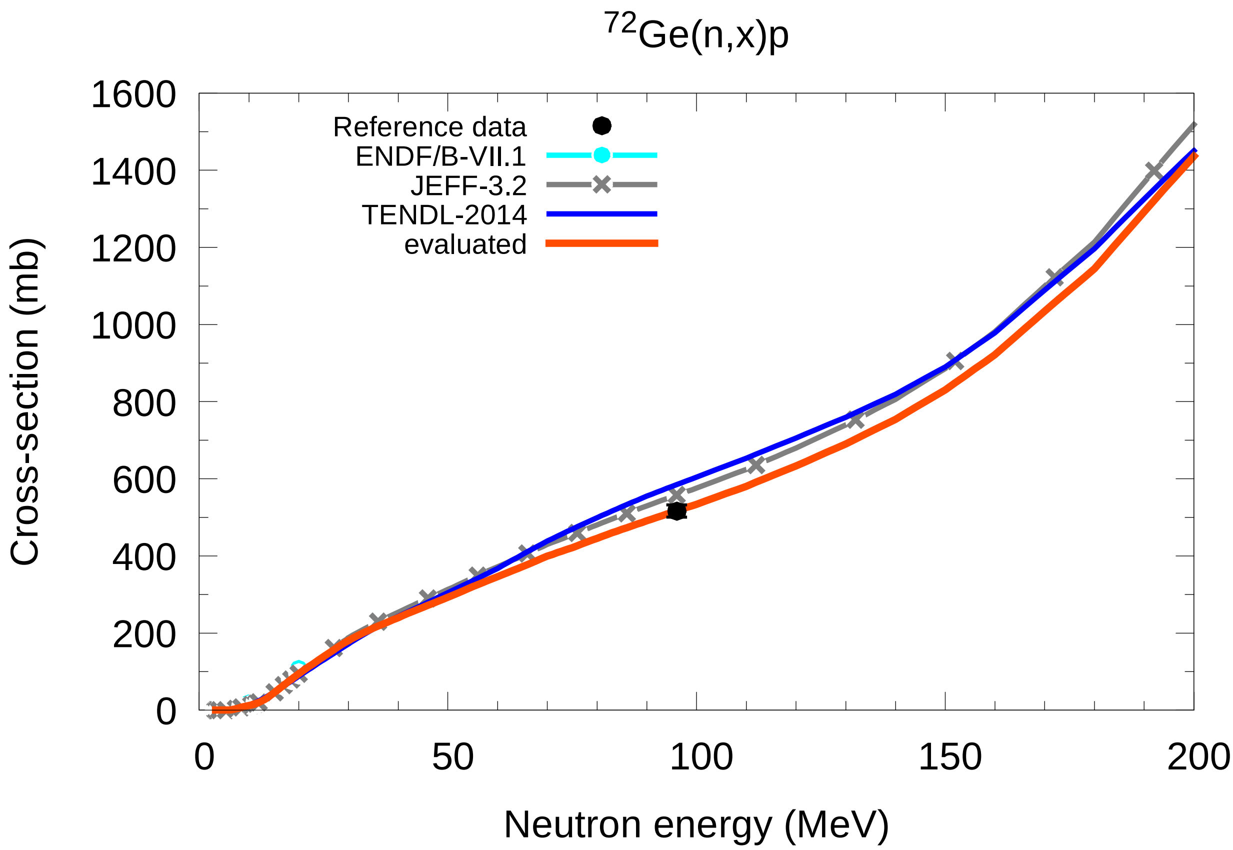

70Zn(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
200
400
600
800
1000
1200
0
50
100
150
200


^{69}Ga(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
1600
1400
1200
1000
800
600
400
200
0
0
50
100
150
200

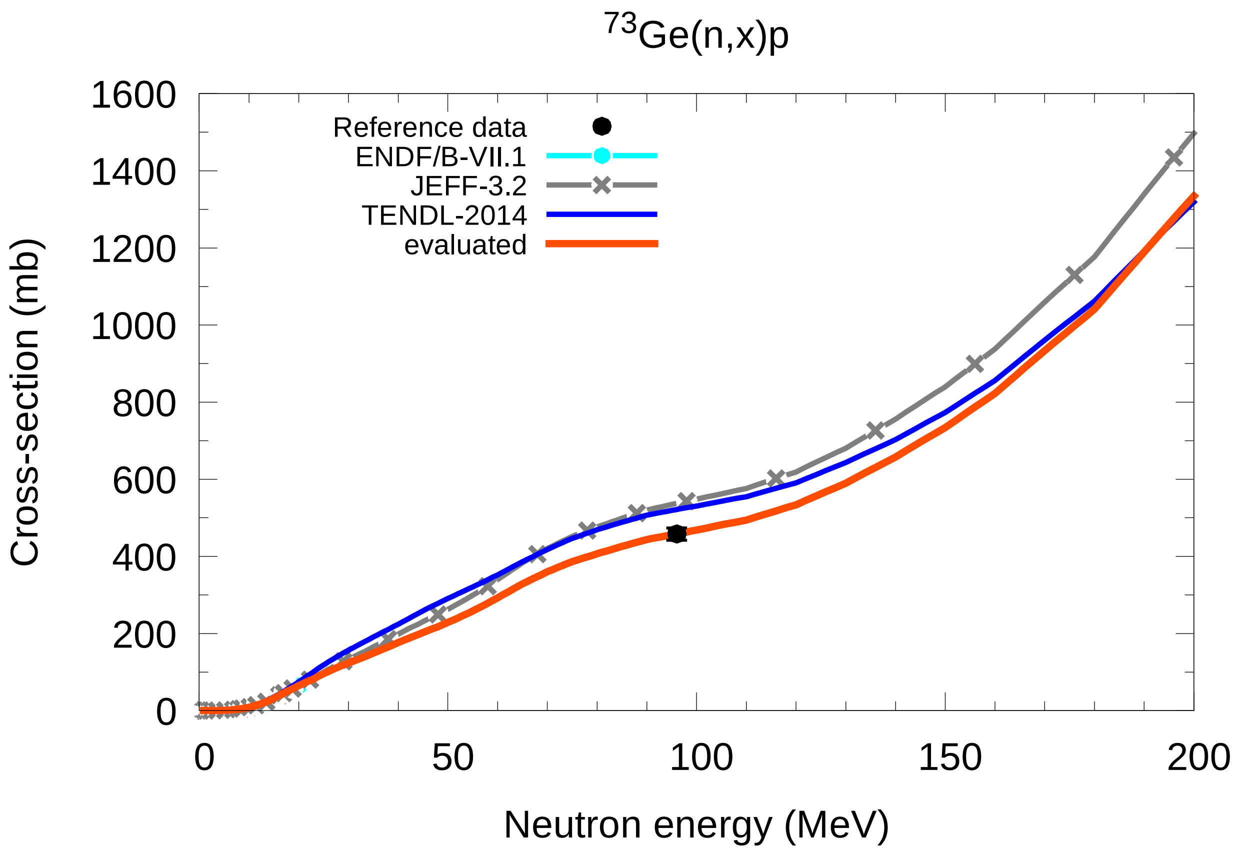

^{71}Ga(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
1400
1200
1000
800
600
400
200
0
0
50
100
150
200



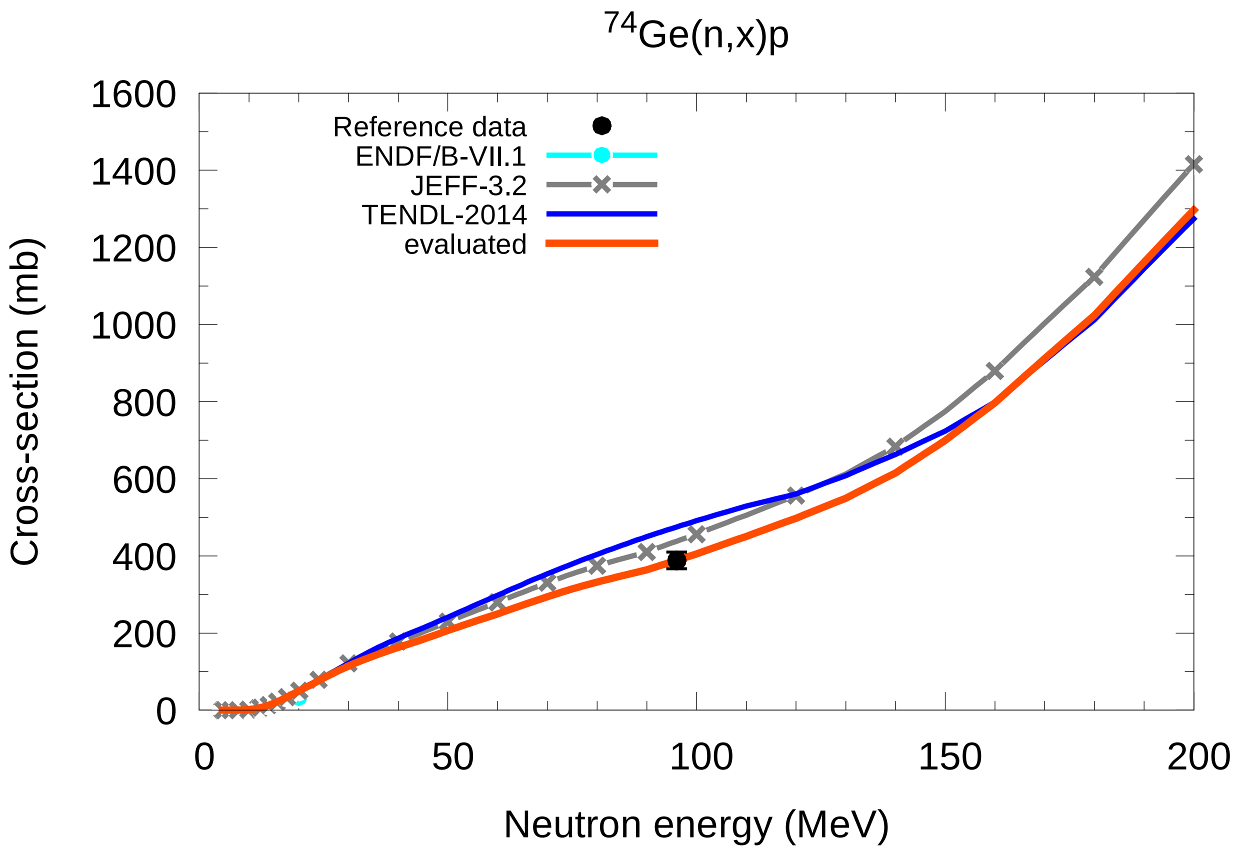
^{70}Ge(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0
50
100
150
200



^{72}Ge(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
0
50
100
150
200



^{73}Ge(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
200
400
600
800
1000
1200
1400
1600
0
50
100
150
200



^{74}Ge(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
200
400
600
800
1000
1200
1400
1600
0
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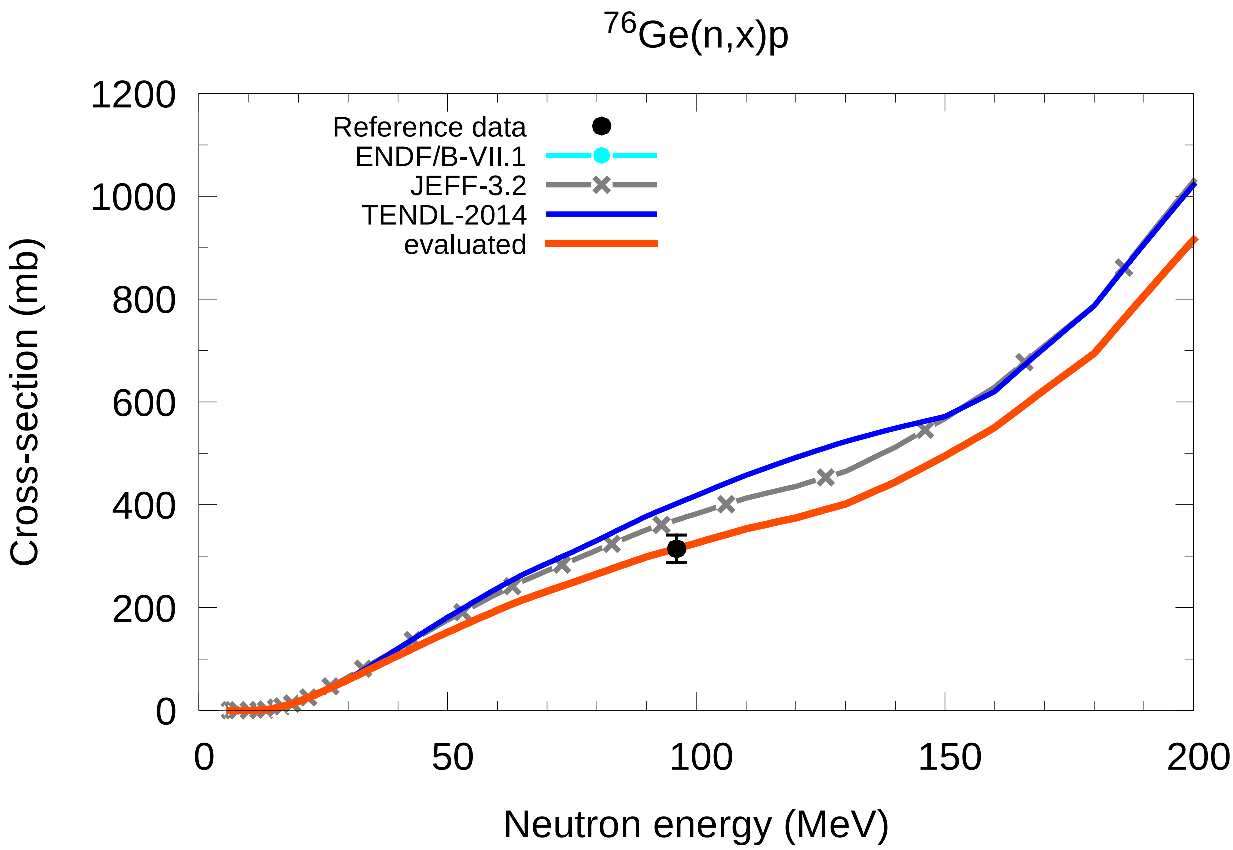
100
150
200



76Ge(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
0
50
100
150
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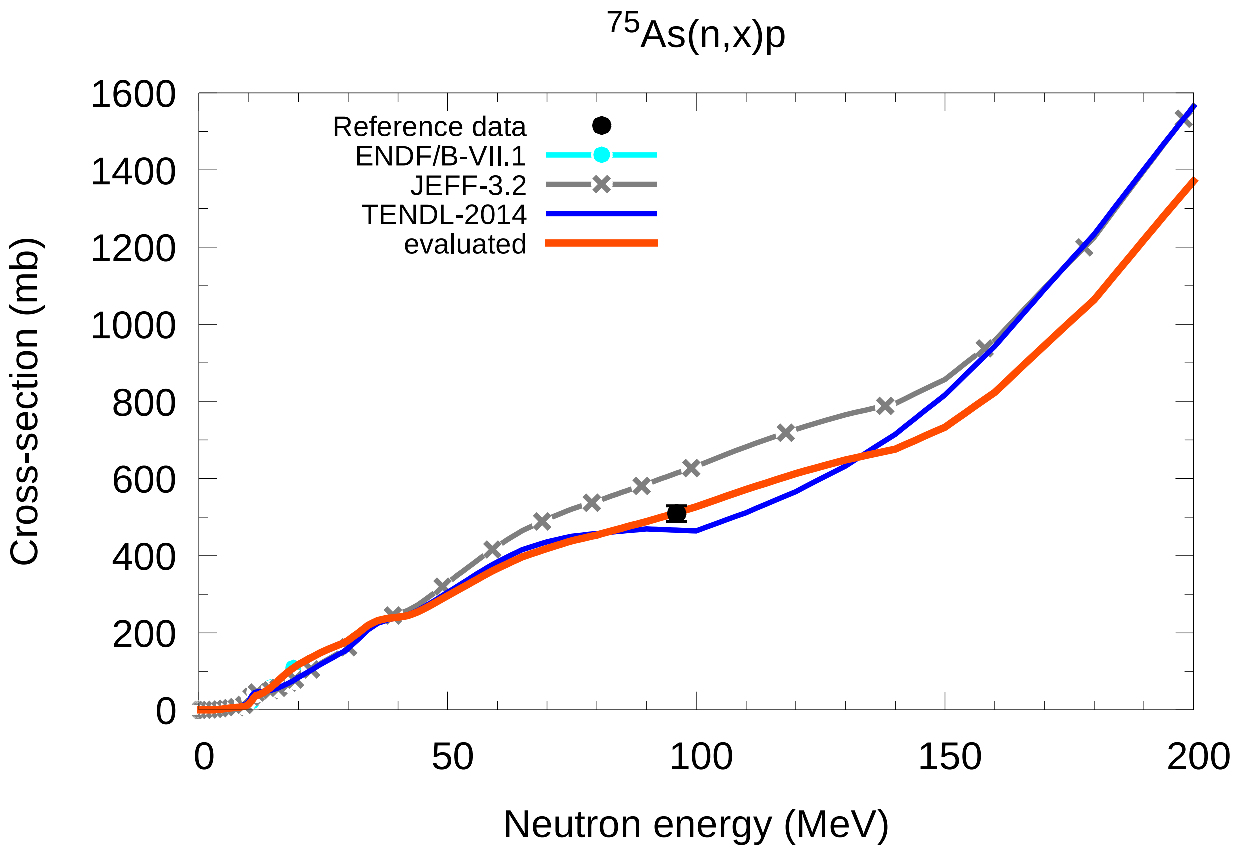

75As(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
0
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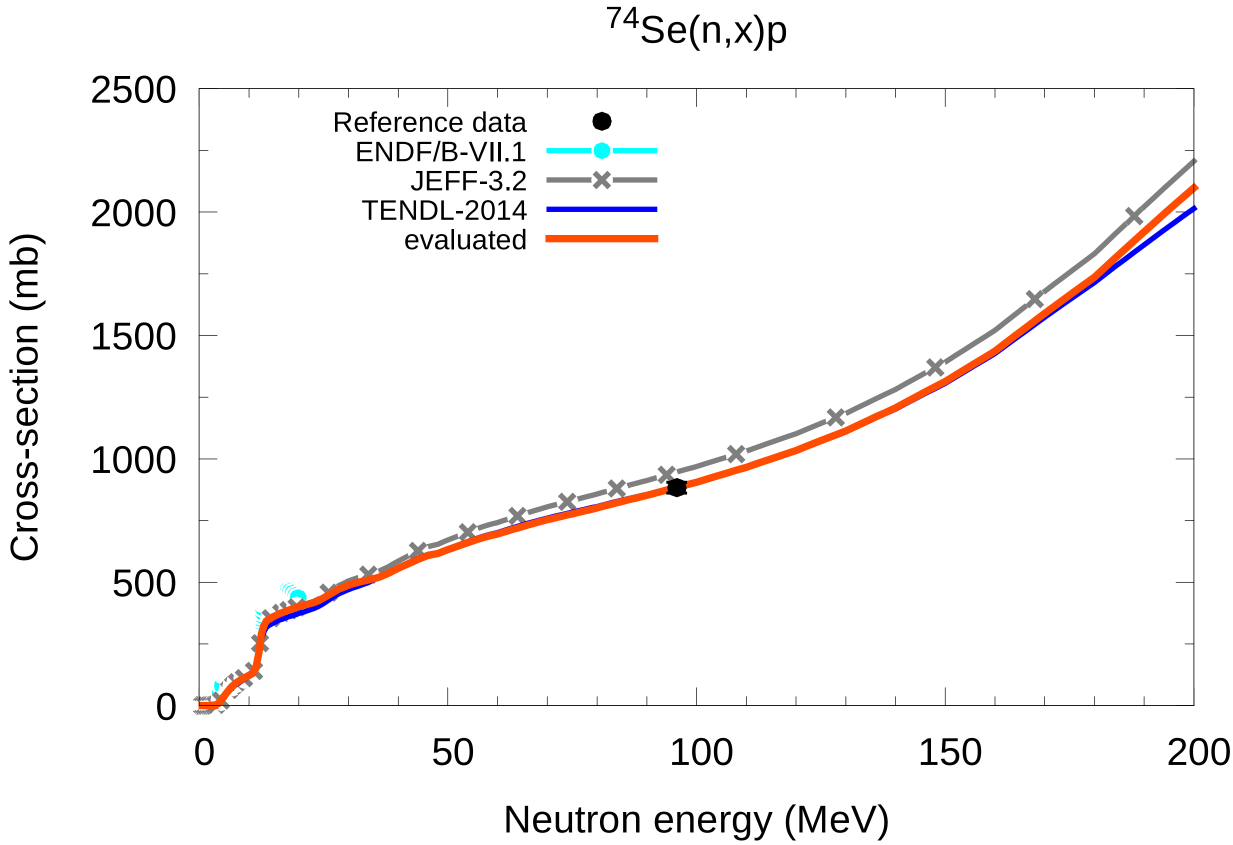
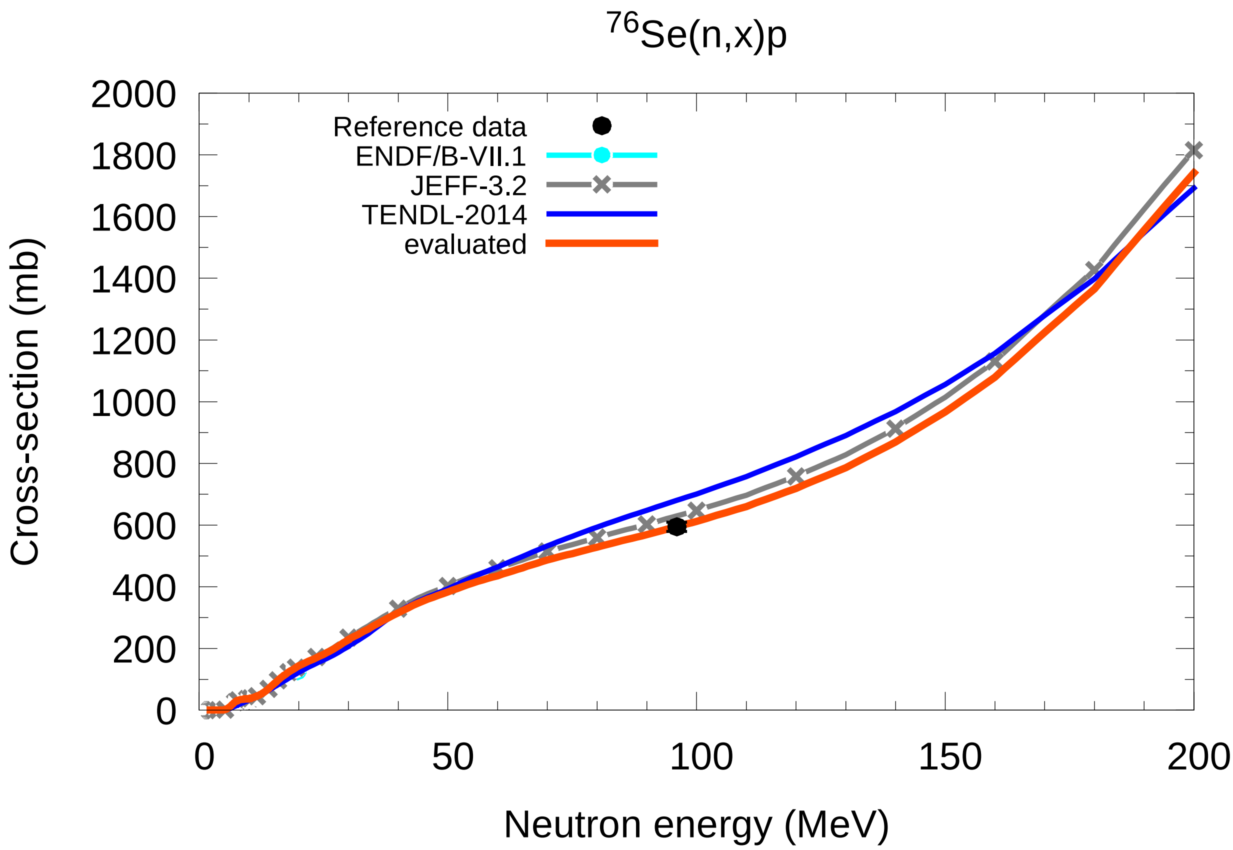
100
150
200



^{74}Se(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



^{76}Se(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0
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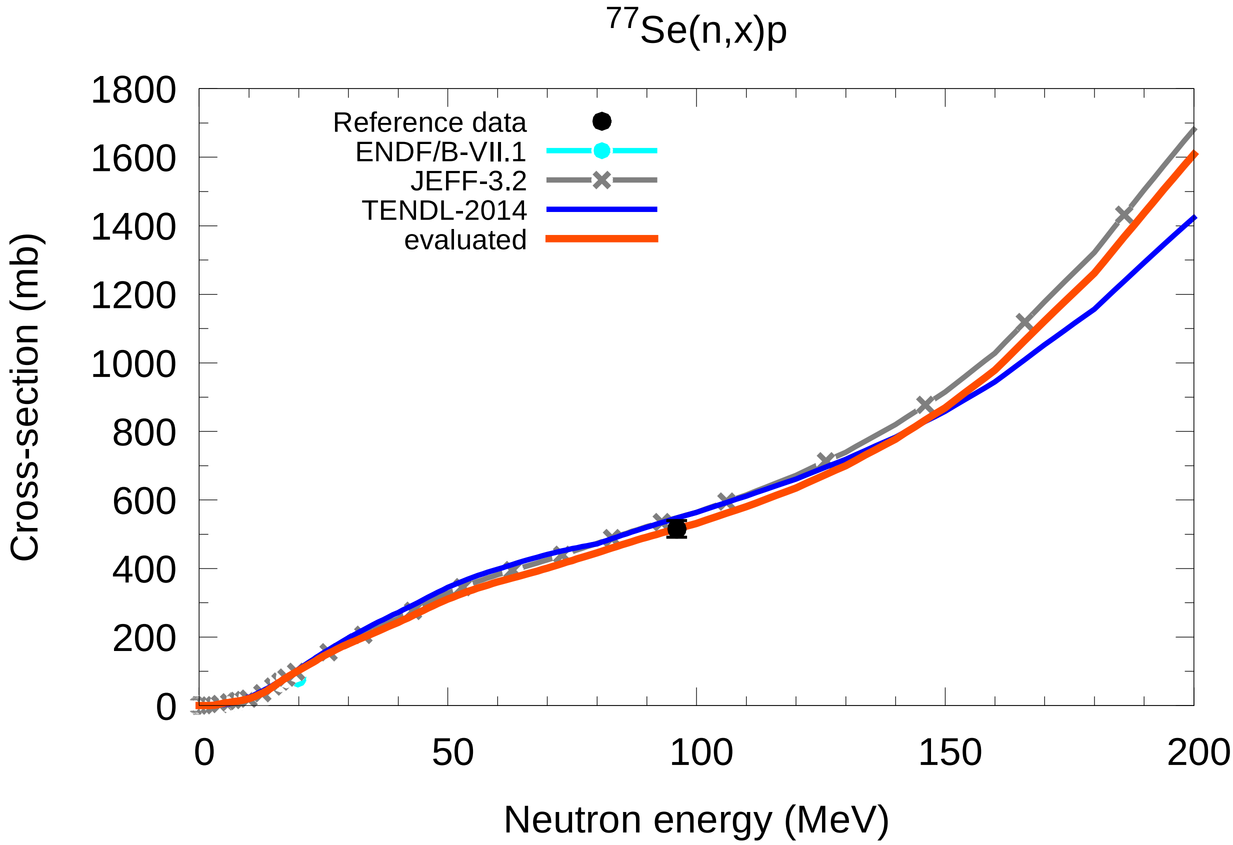
100
150
200



77Se(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
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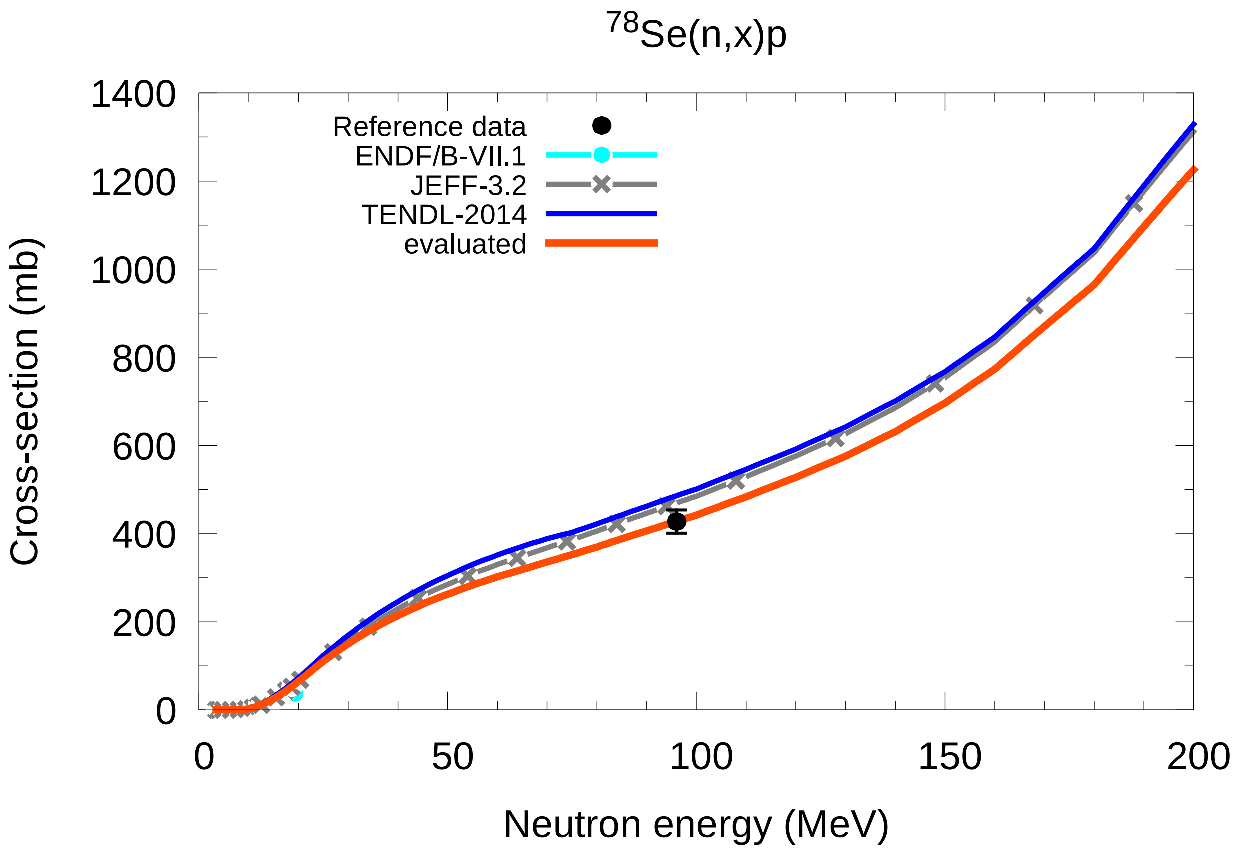
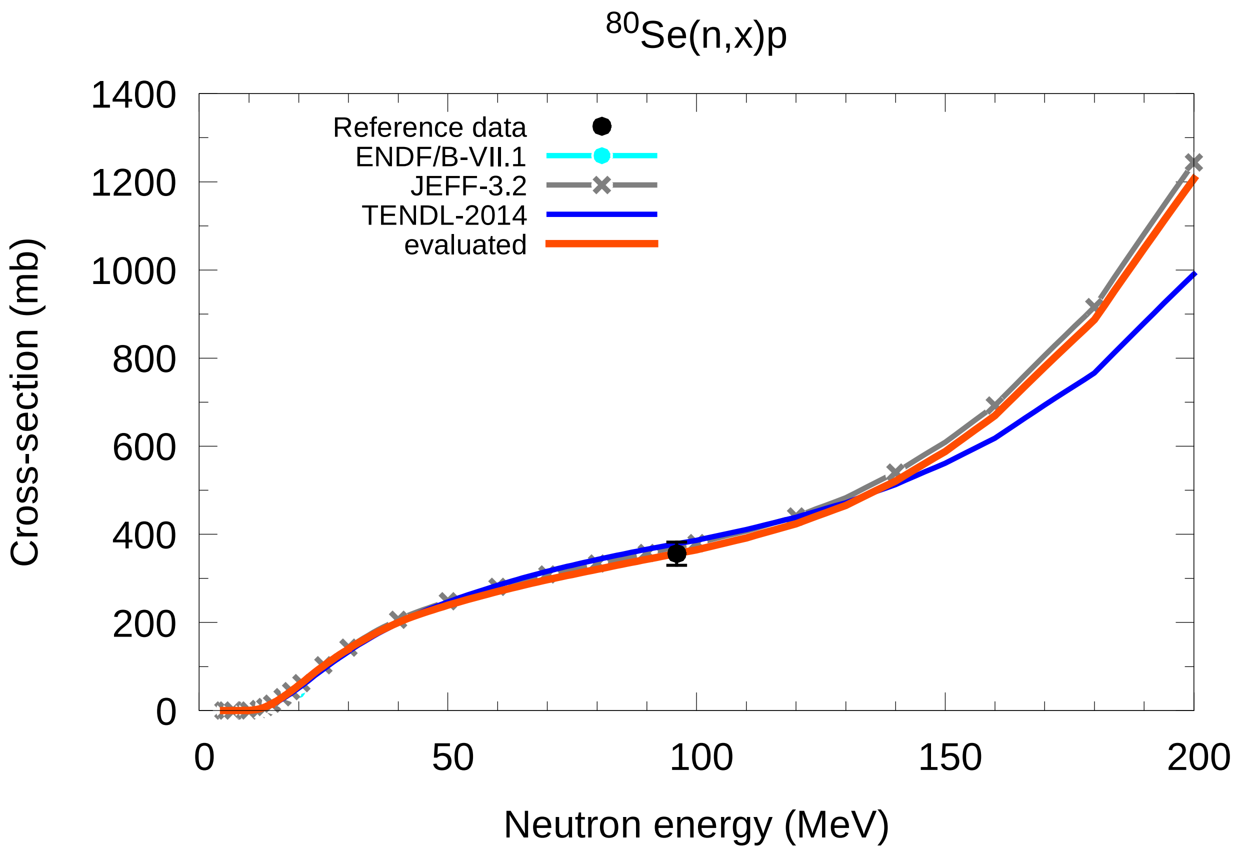
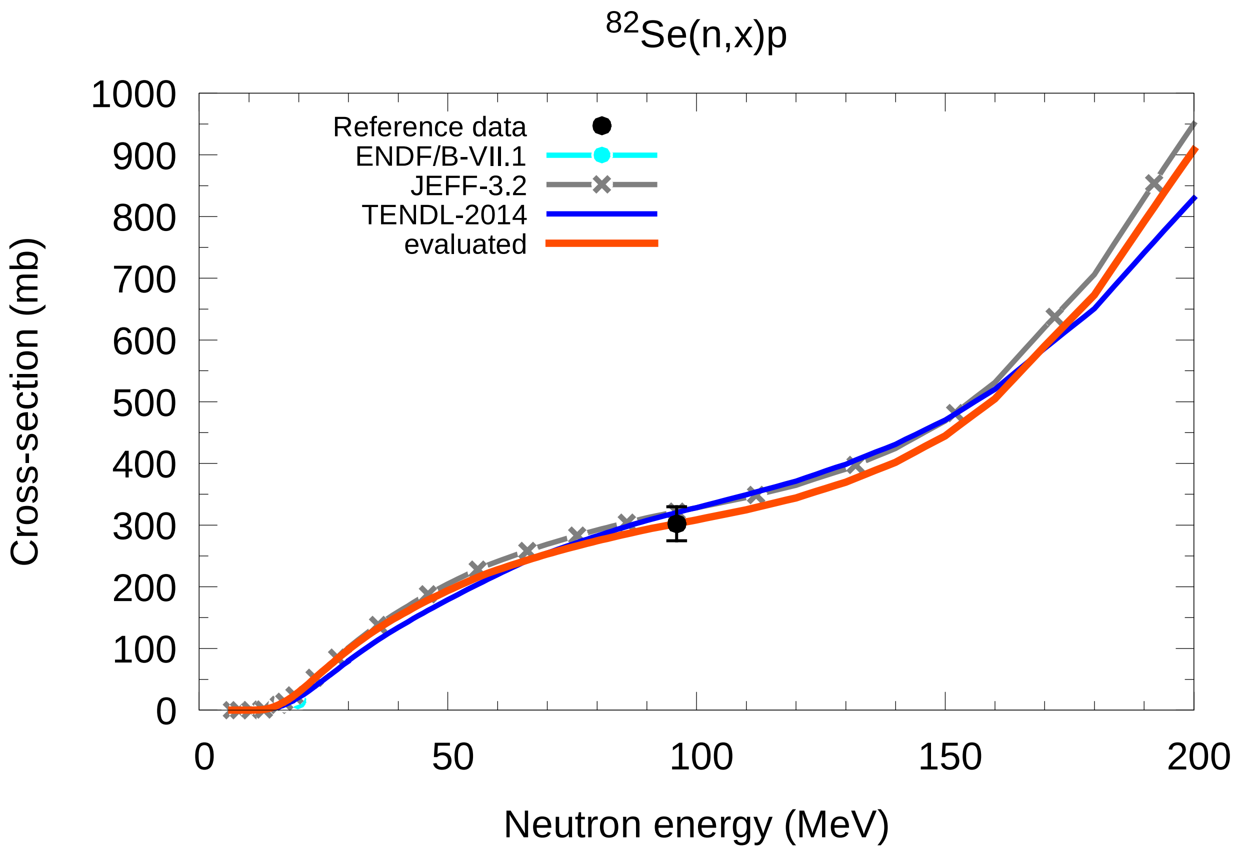
150
200



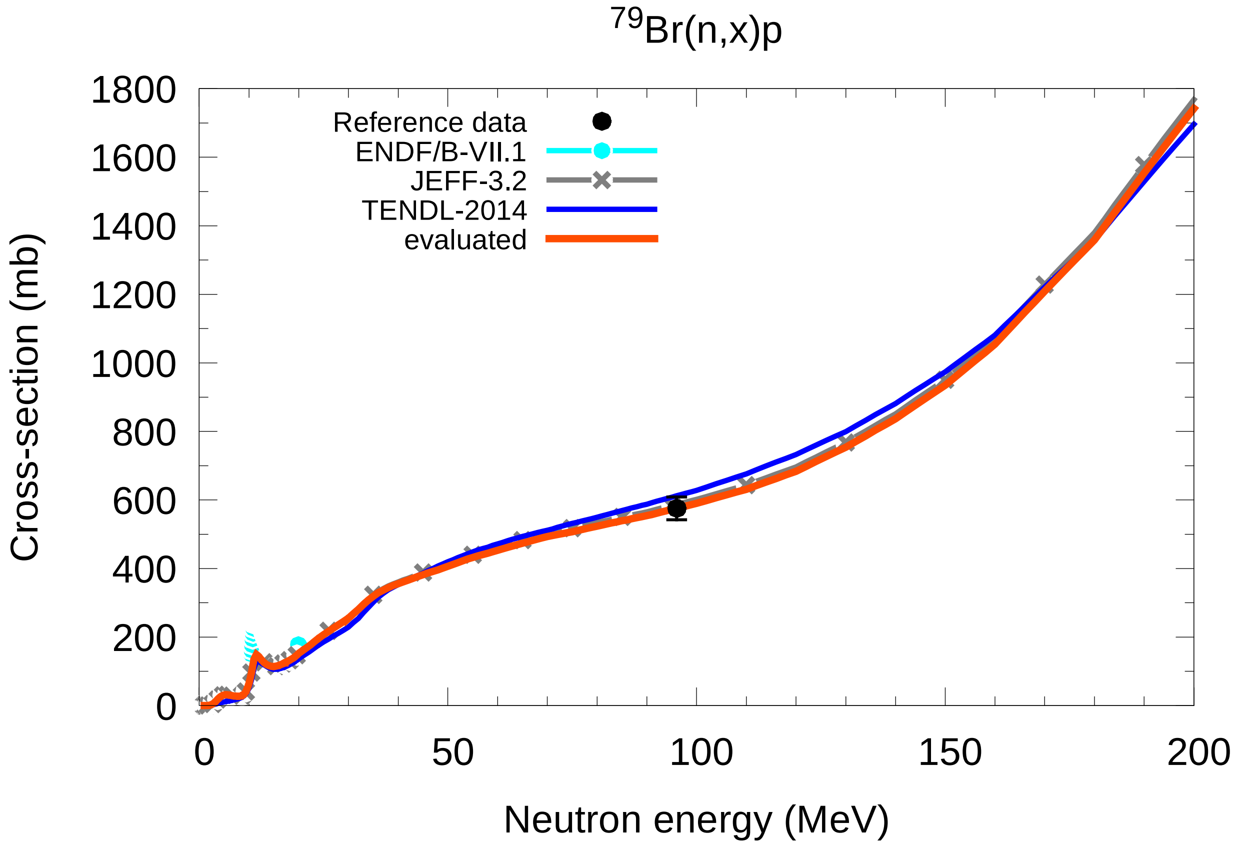
78Se(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
0
50
100
150
200



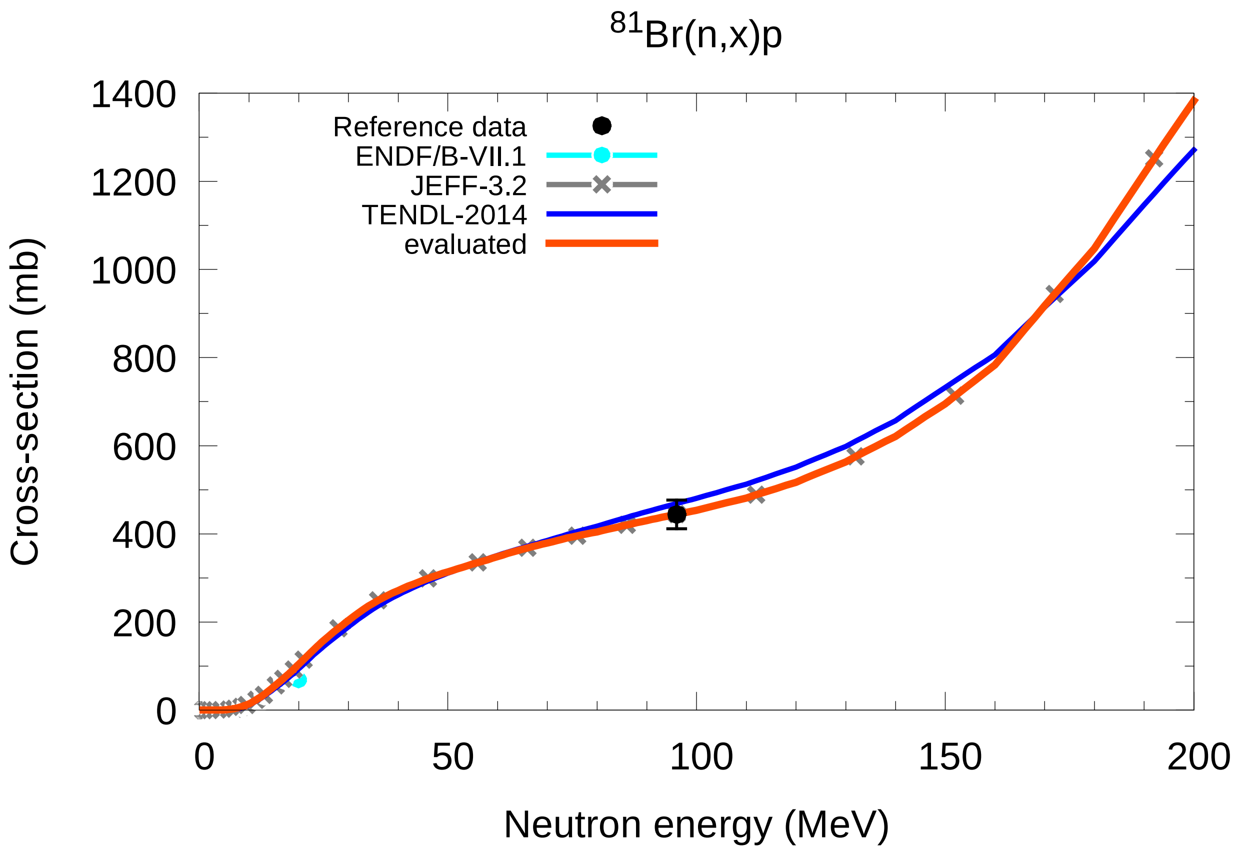
^{80}Se(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
0
50
100
150
200



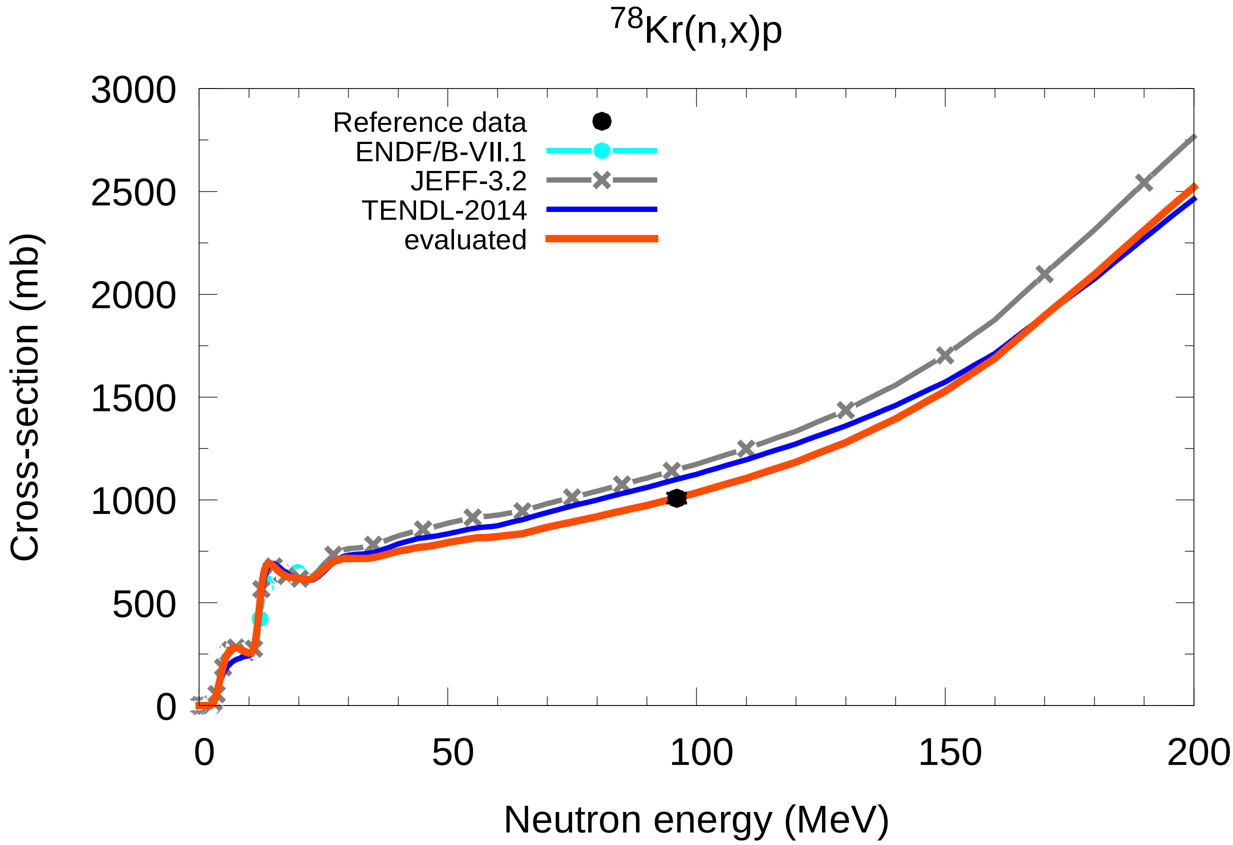
^{82}Se(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
1000
0
50
100
150
200



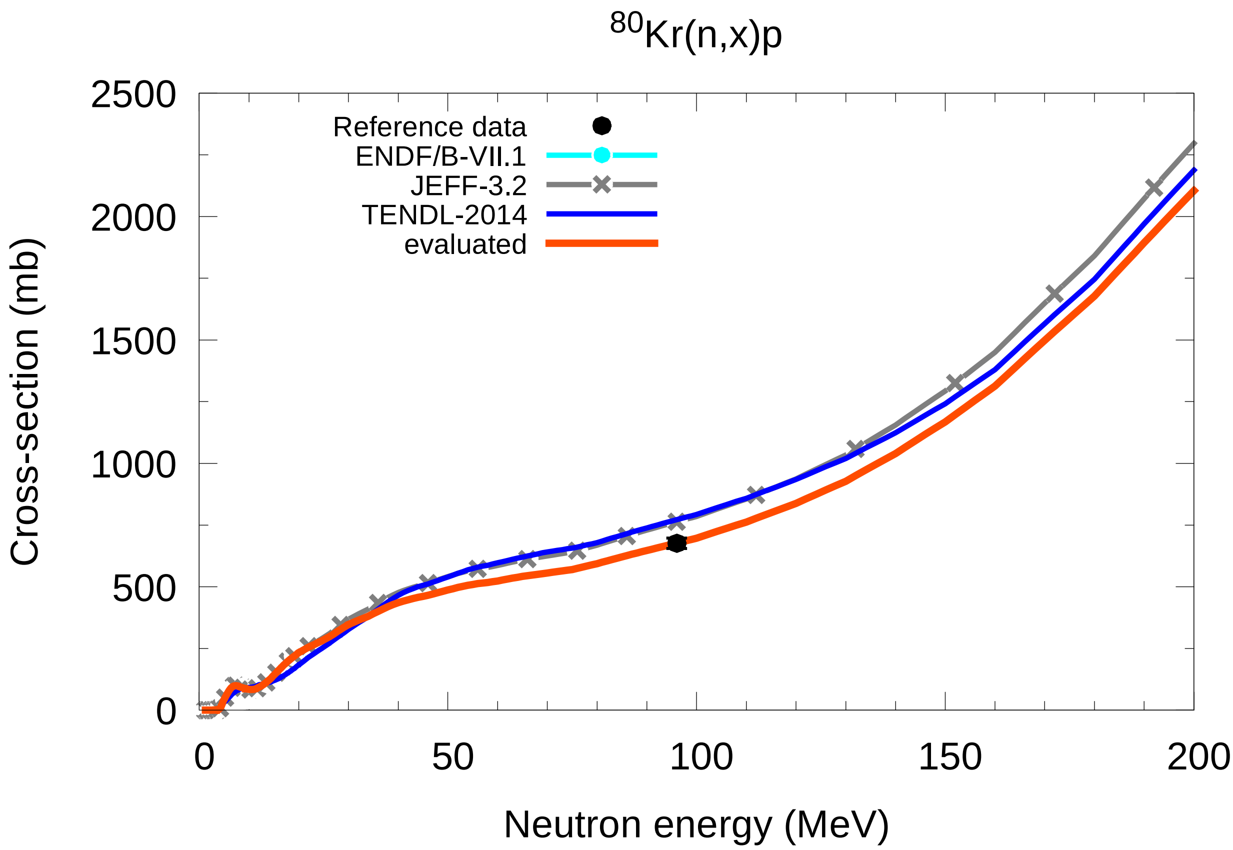
$^{79}Br(n,x)p$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
0
50
100
150
200



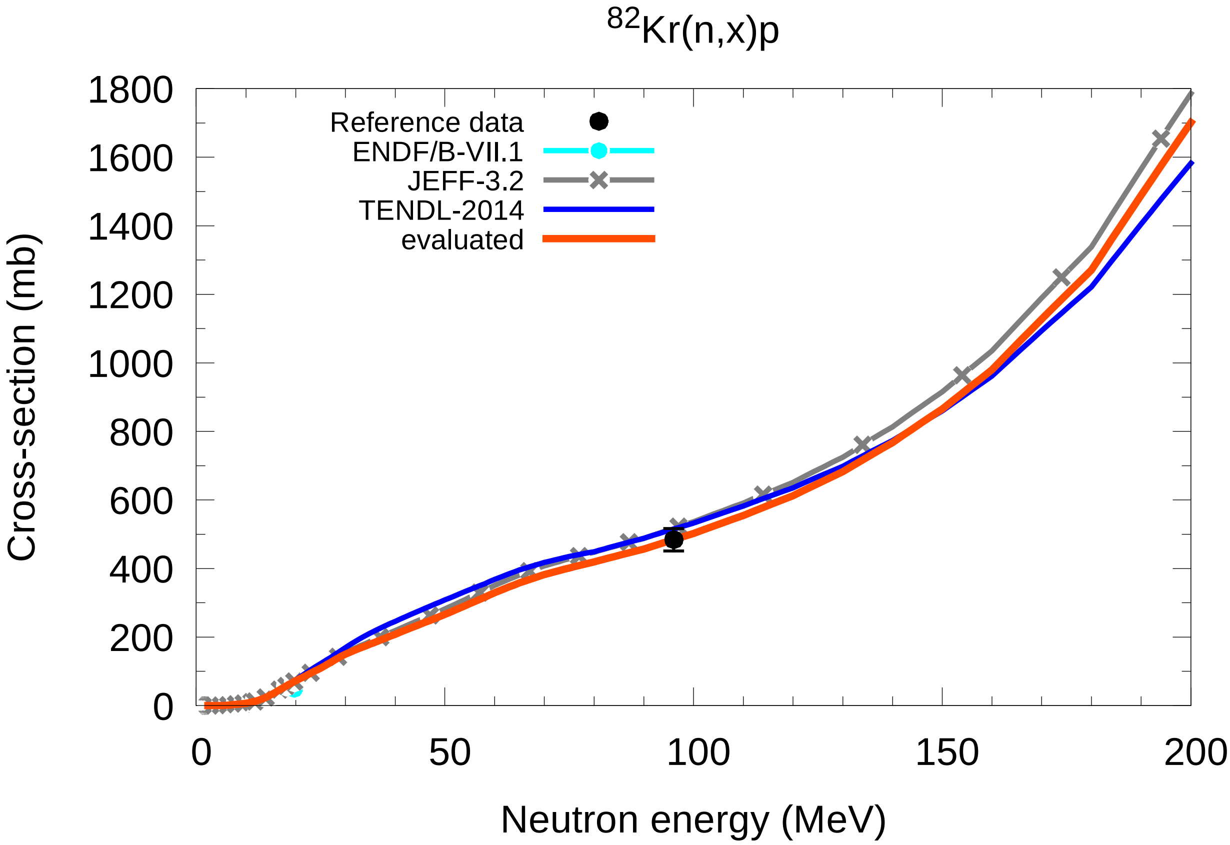
$^{81}Br(n,x)p$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
0
50
100
150
200



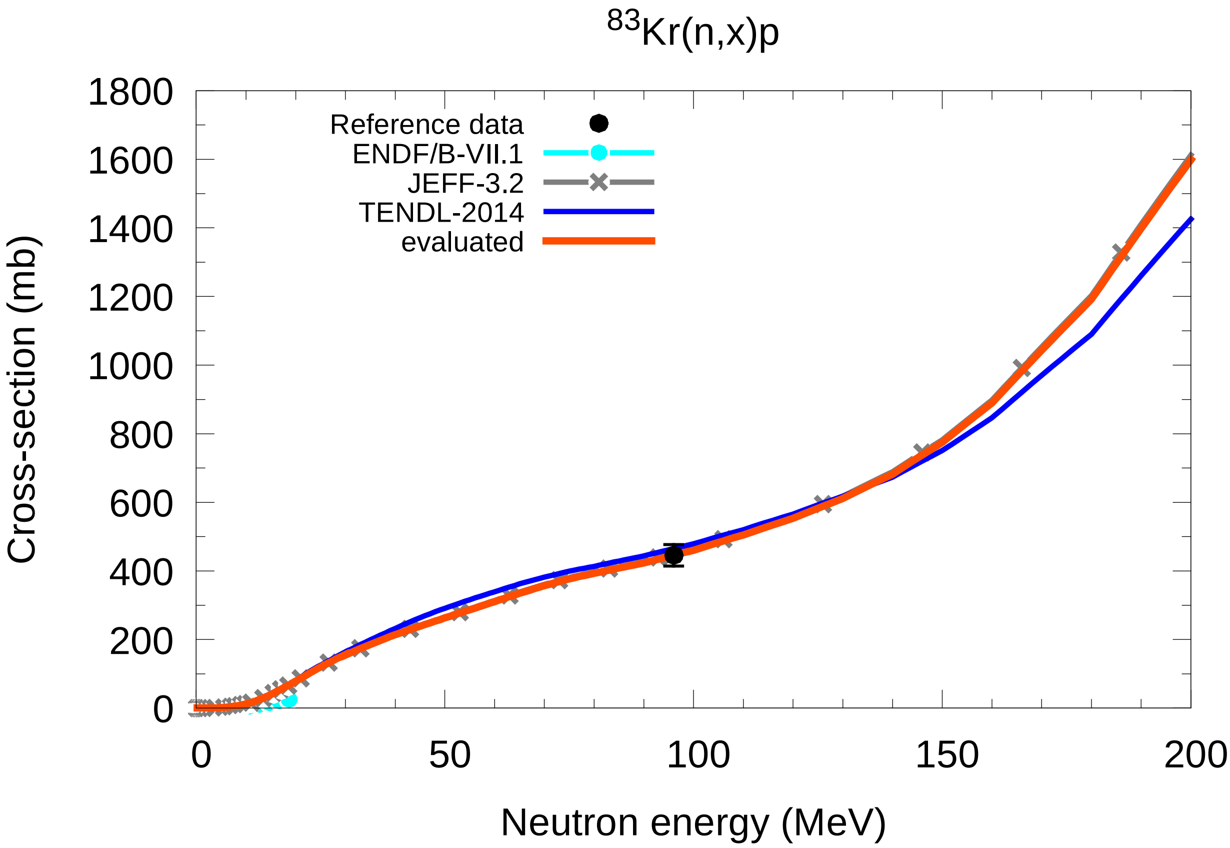
^{78}Kr(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
0
50
100
150
200



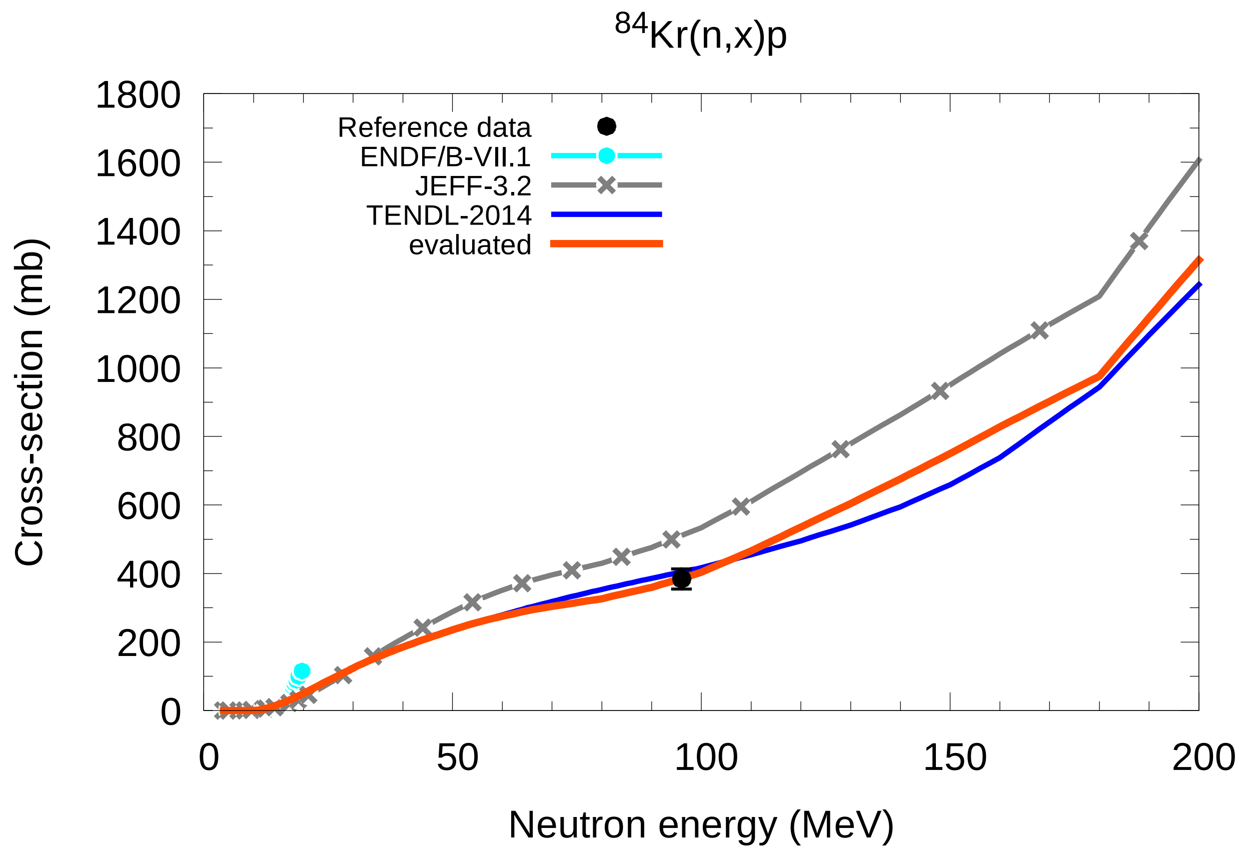
^{80}Kr(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200

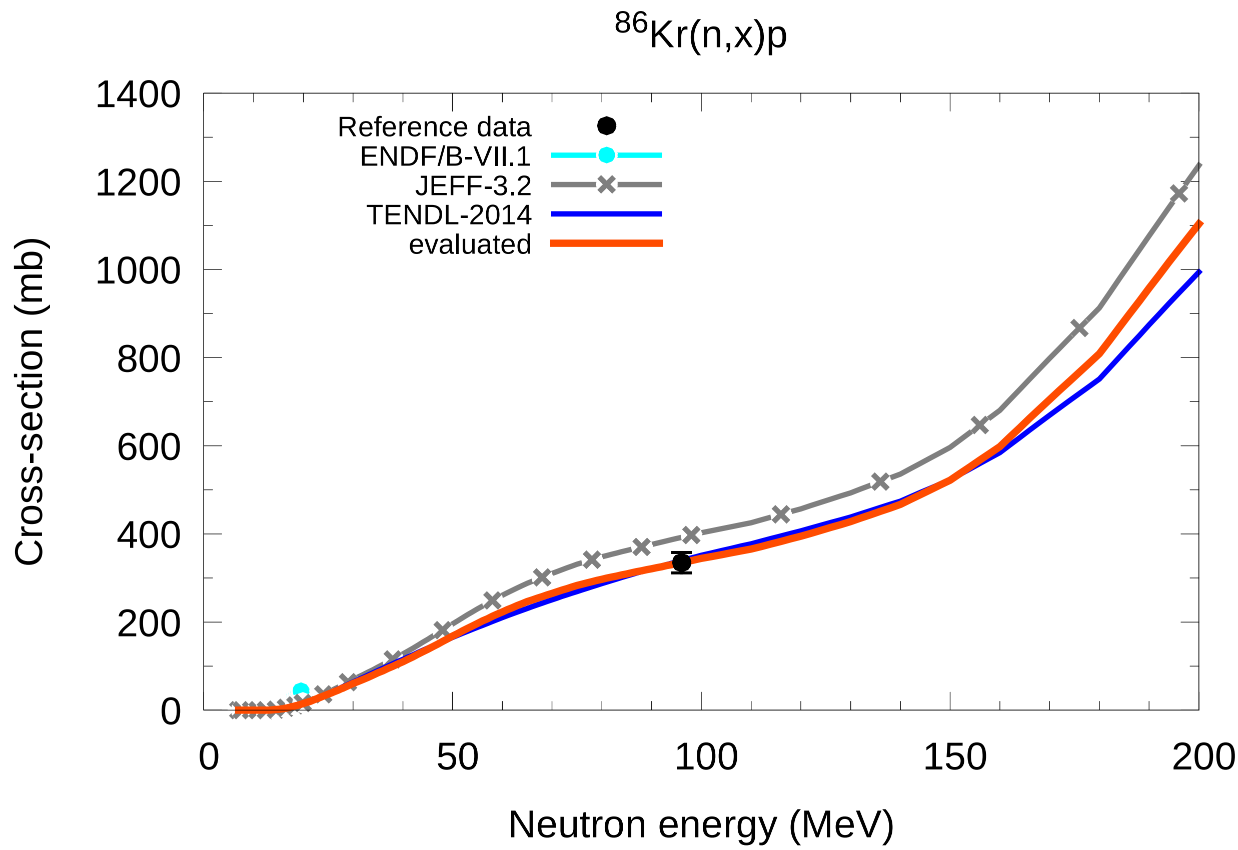


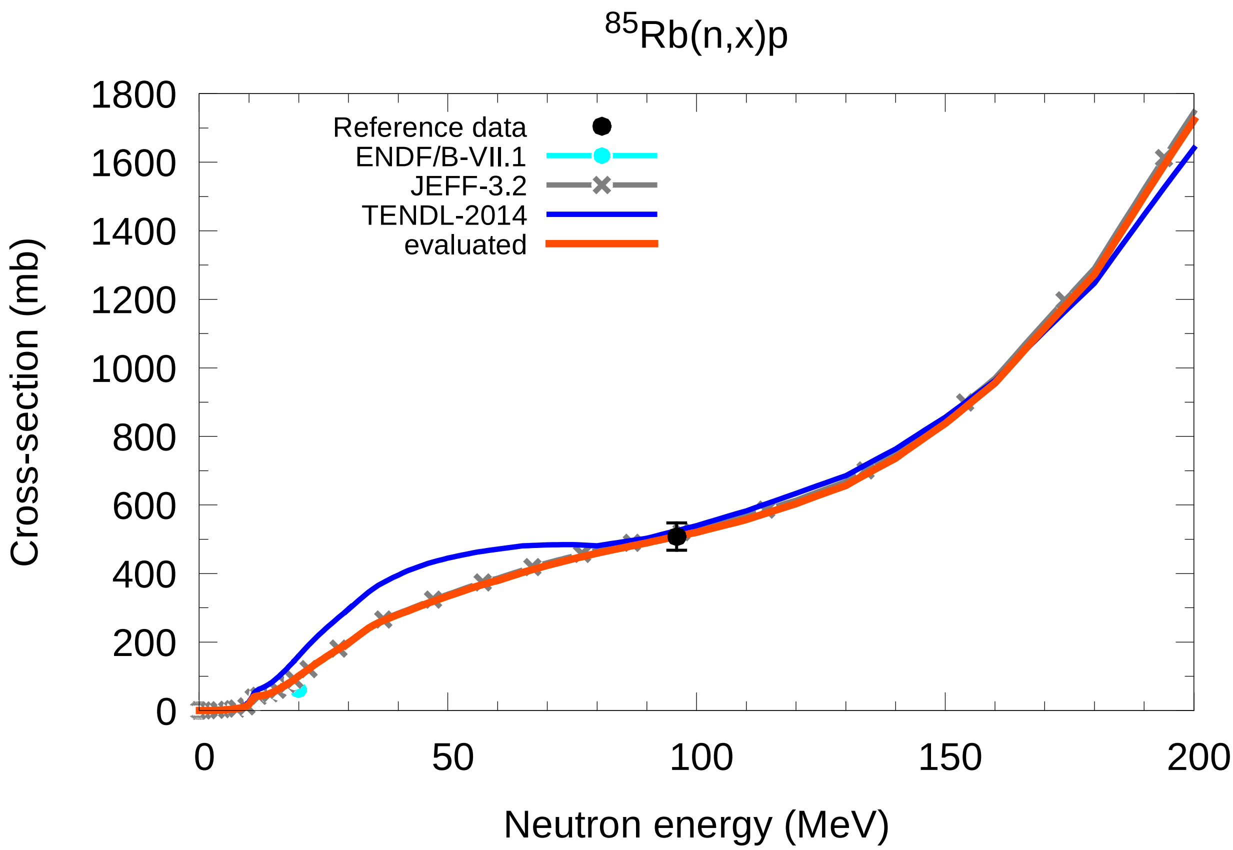
^{82}Kr(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)



^{83}Kr(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)


^{84}Kr(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
200
400
600
800
1000
1200
1400
1600
1800
0
50
100
150
200


^{86}Kr(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
200
400
600
800
1000
1200
1400
0
50
100
150
200



^{85}Rb(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
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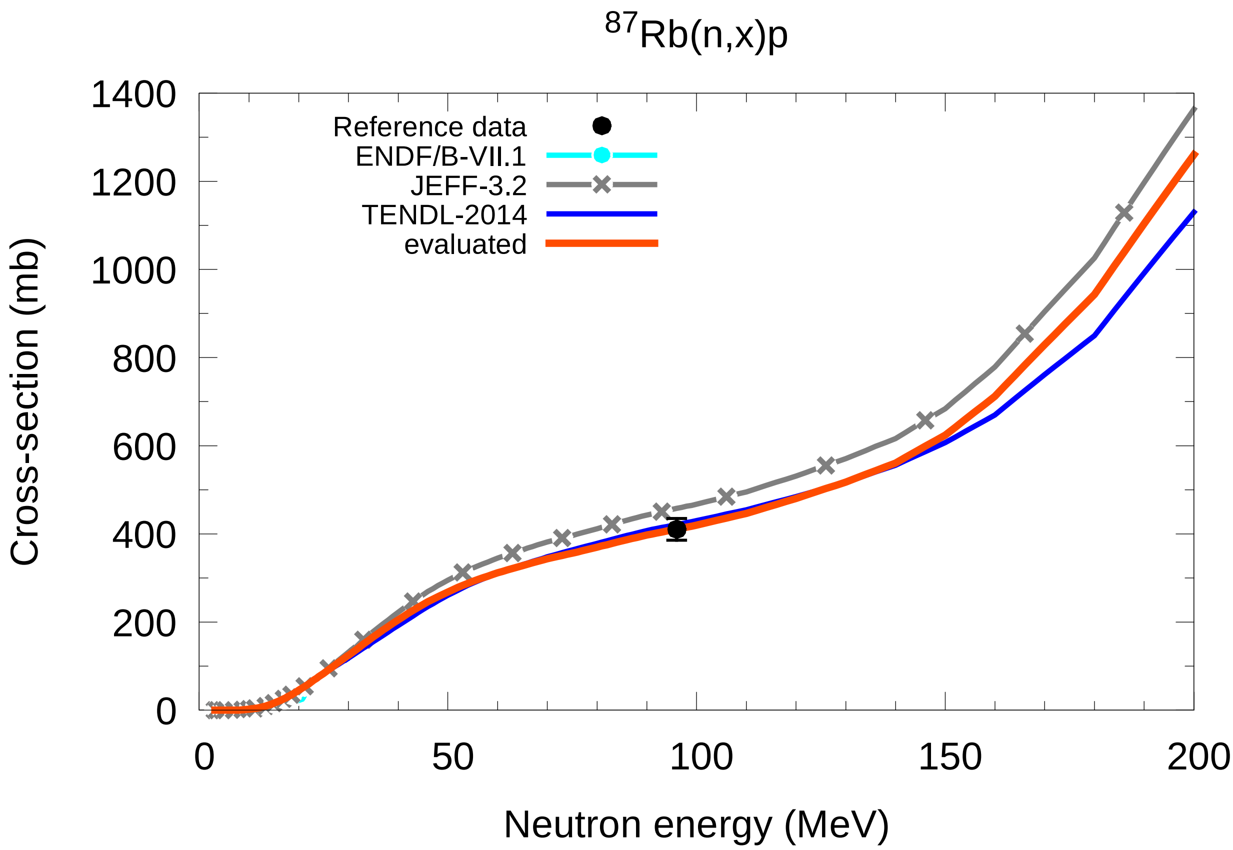

^{87}Rb(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
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150
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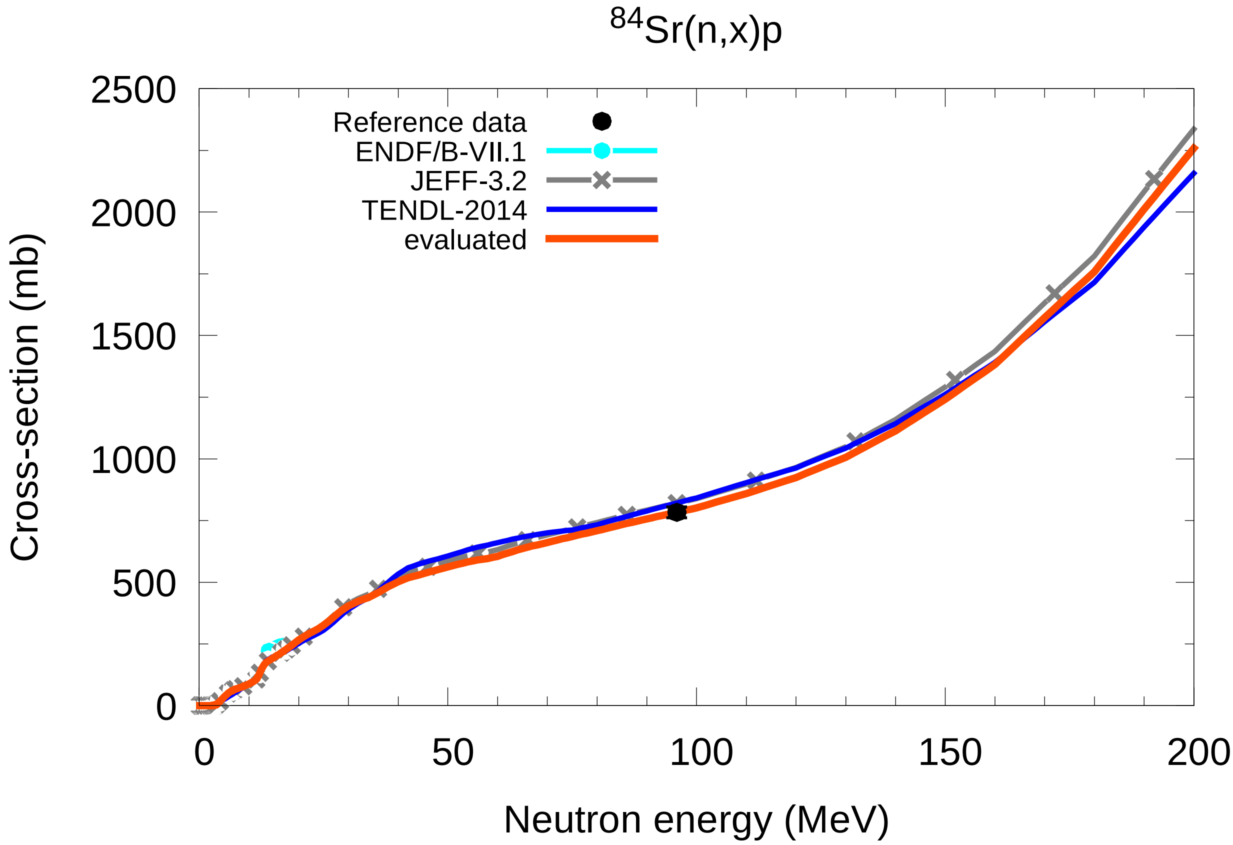

^{84}Sr(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
500
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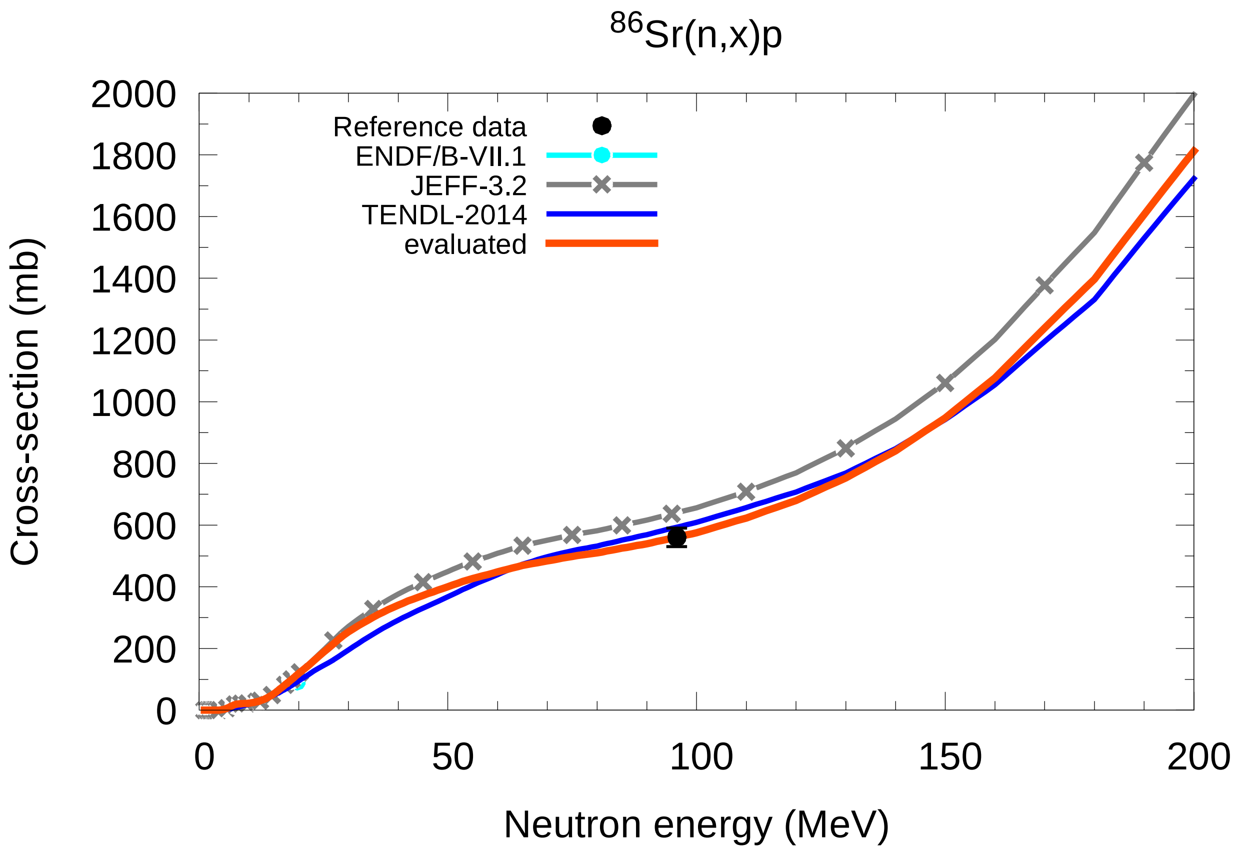
1500
2000
2500
0
50
100
150
200



^{86}Sr(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
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400
600
800
1000
1200
1400
1600
1800
2000
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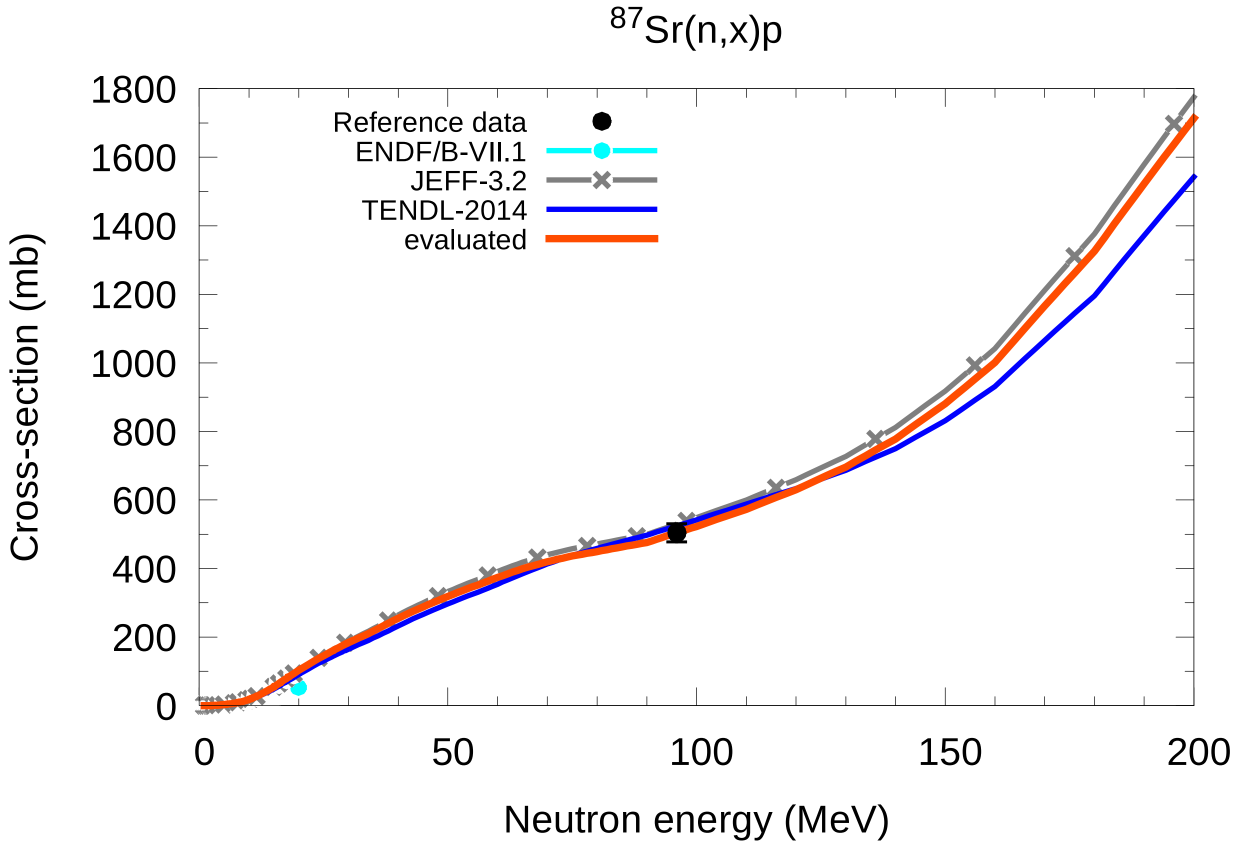
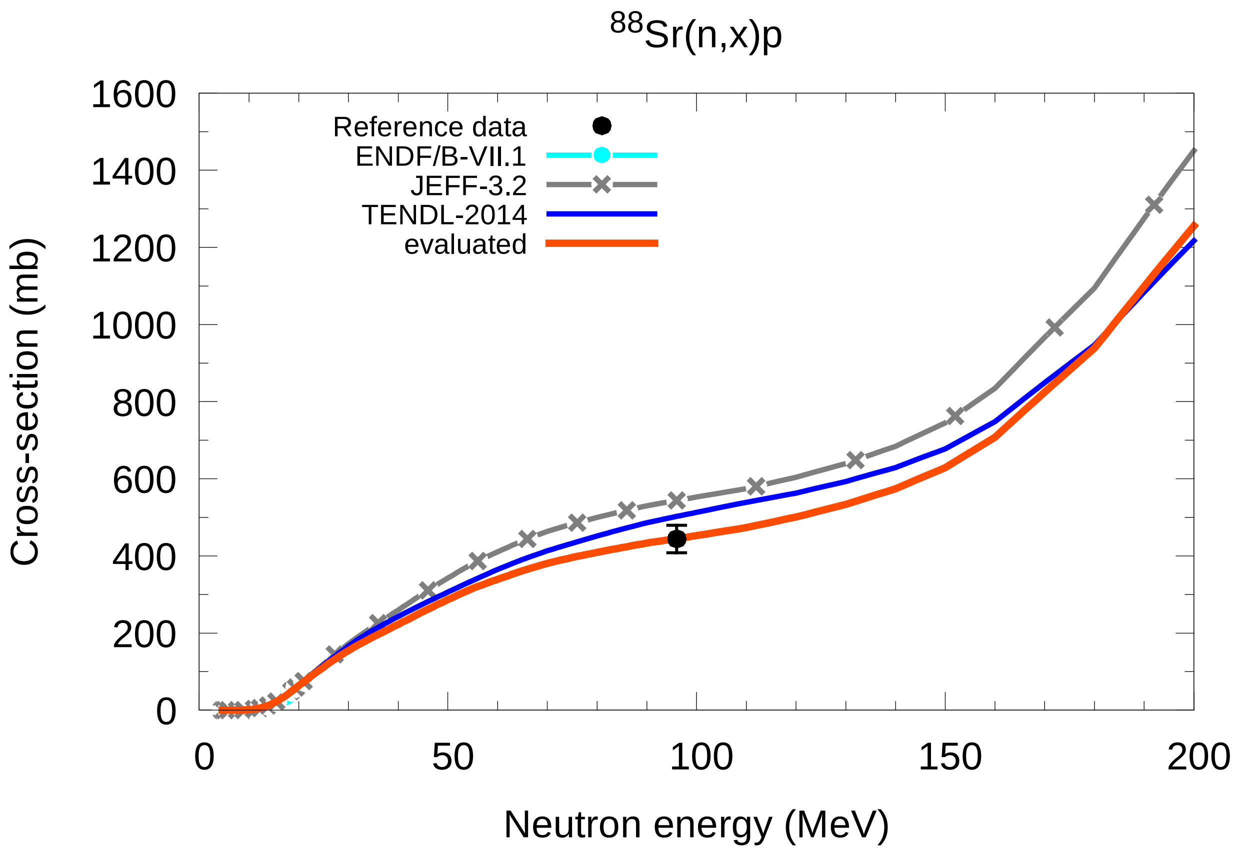


^{87}Sr(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
0
50
100
150
200



^{88}Sr(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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400
600
800
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1200
1400
1600
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50
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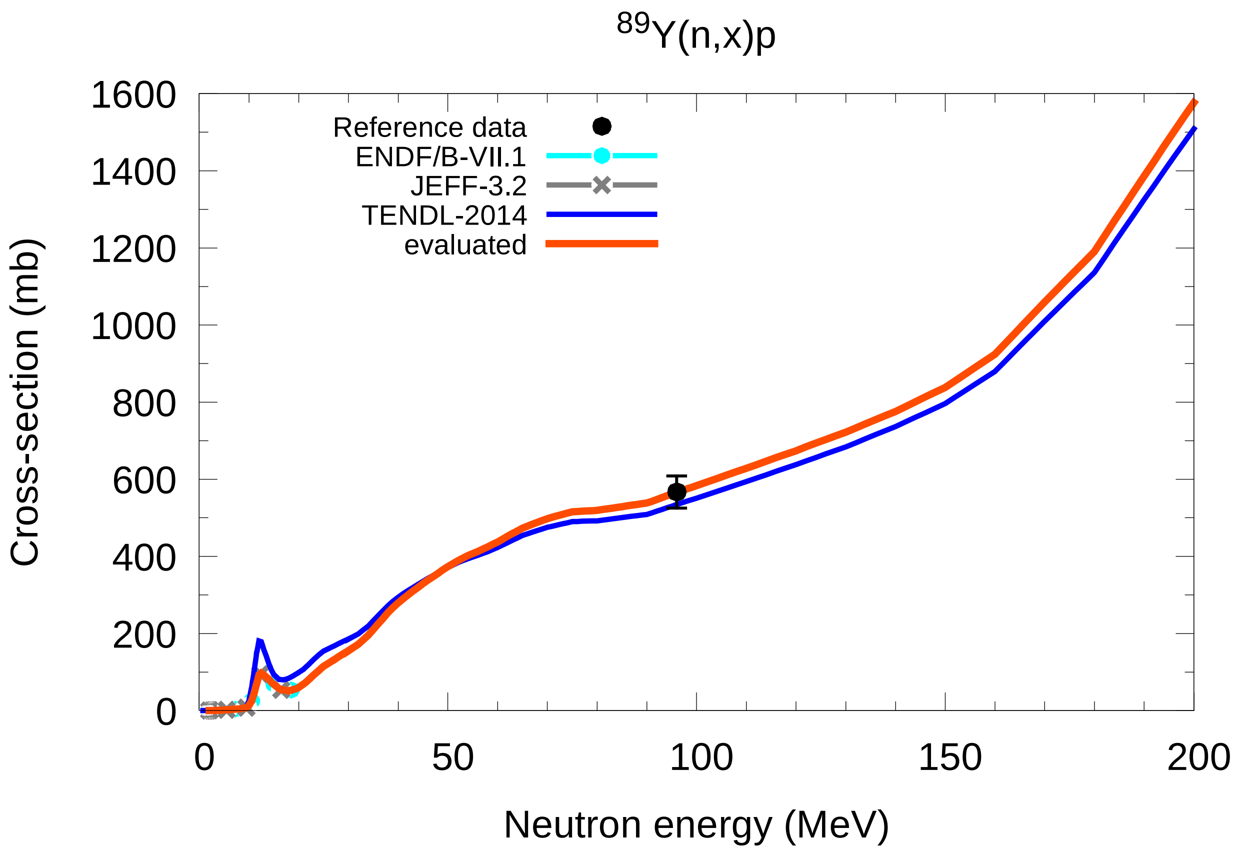
150
200



^{89}Y(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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400
600
800
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1200
1400
1600
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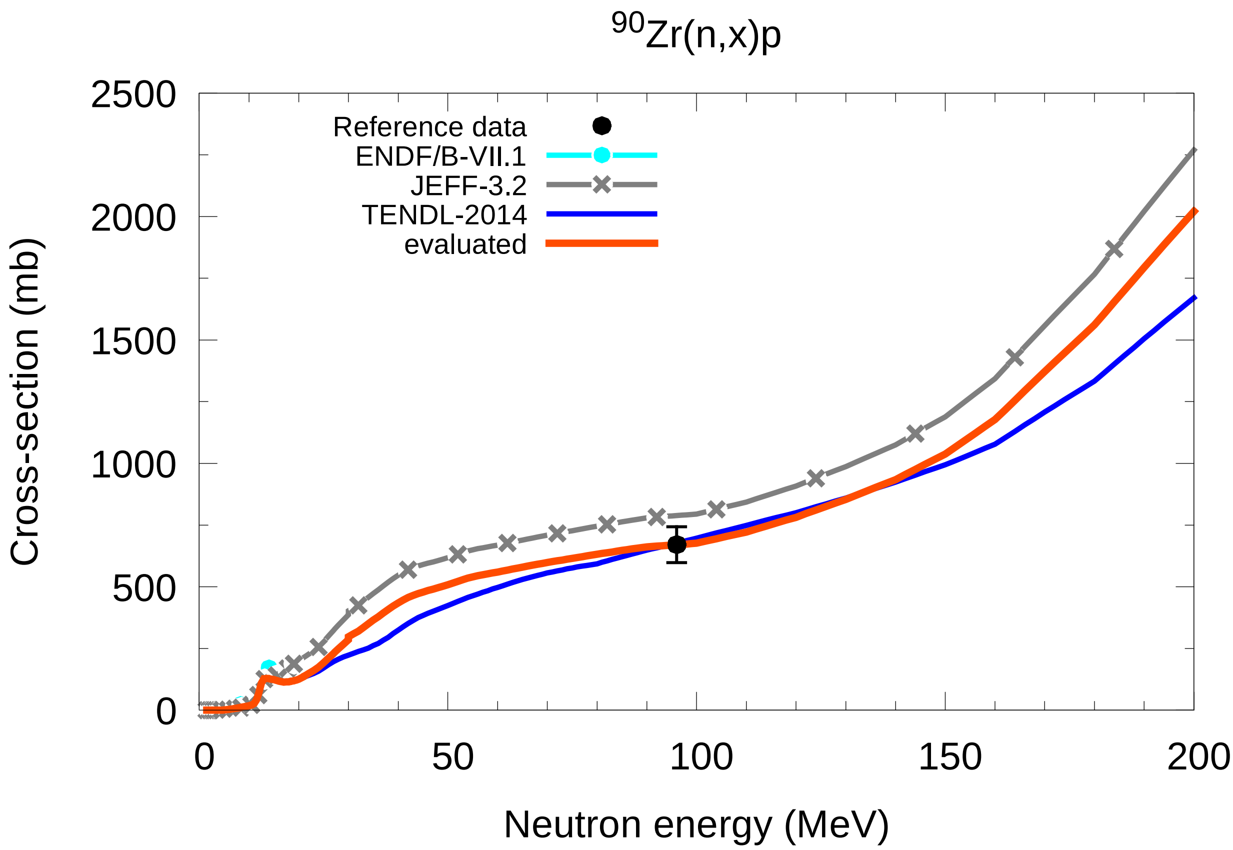
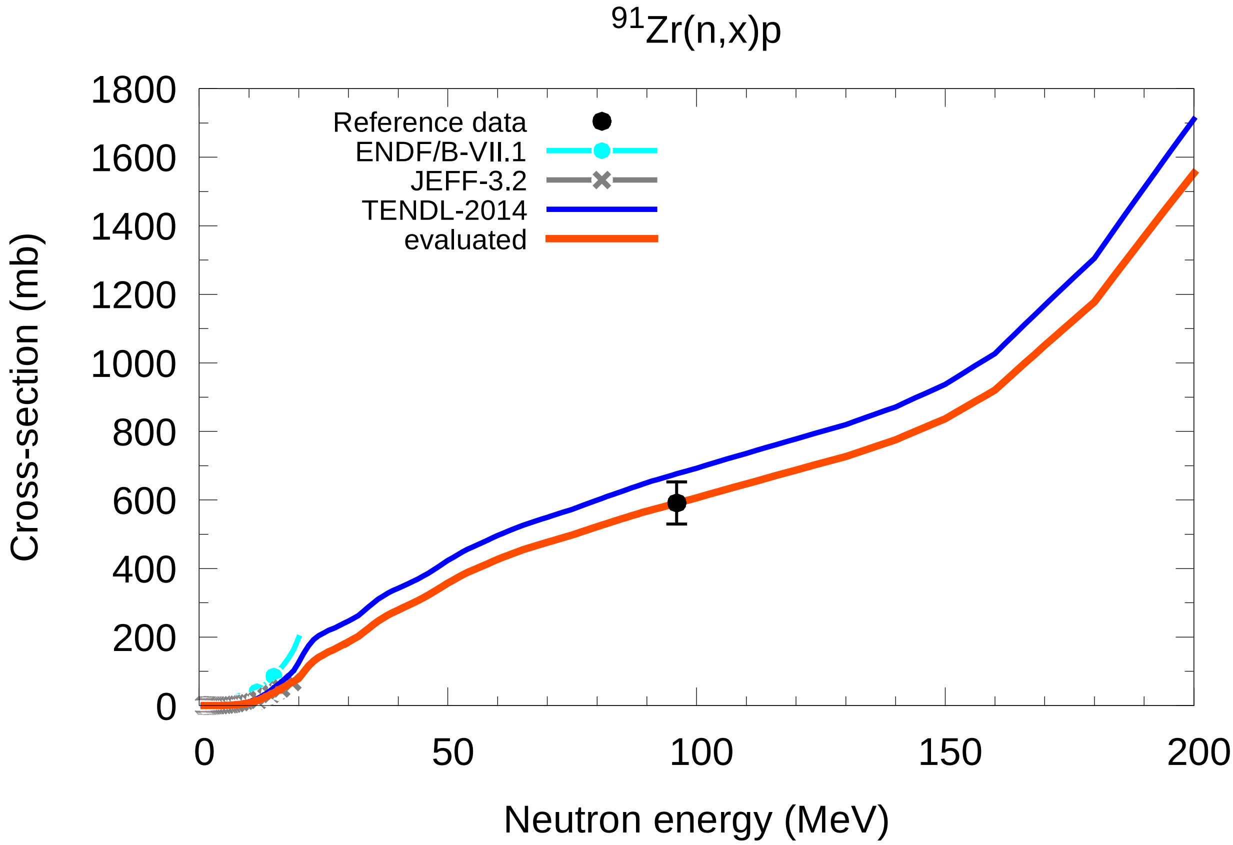
150
200



^{90}Zr(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



91Zr(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
0
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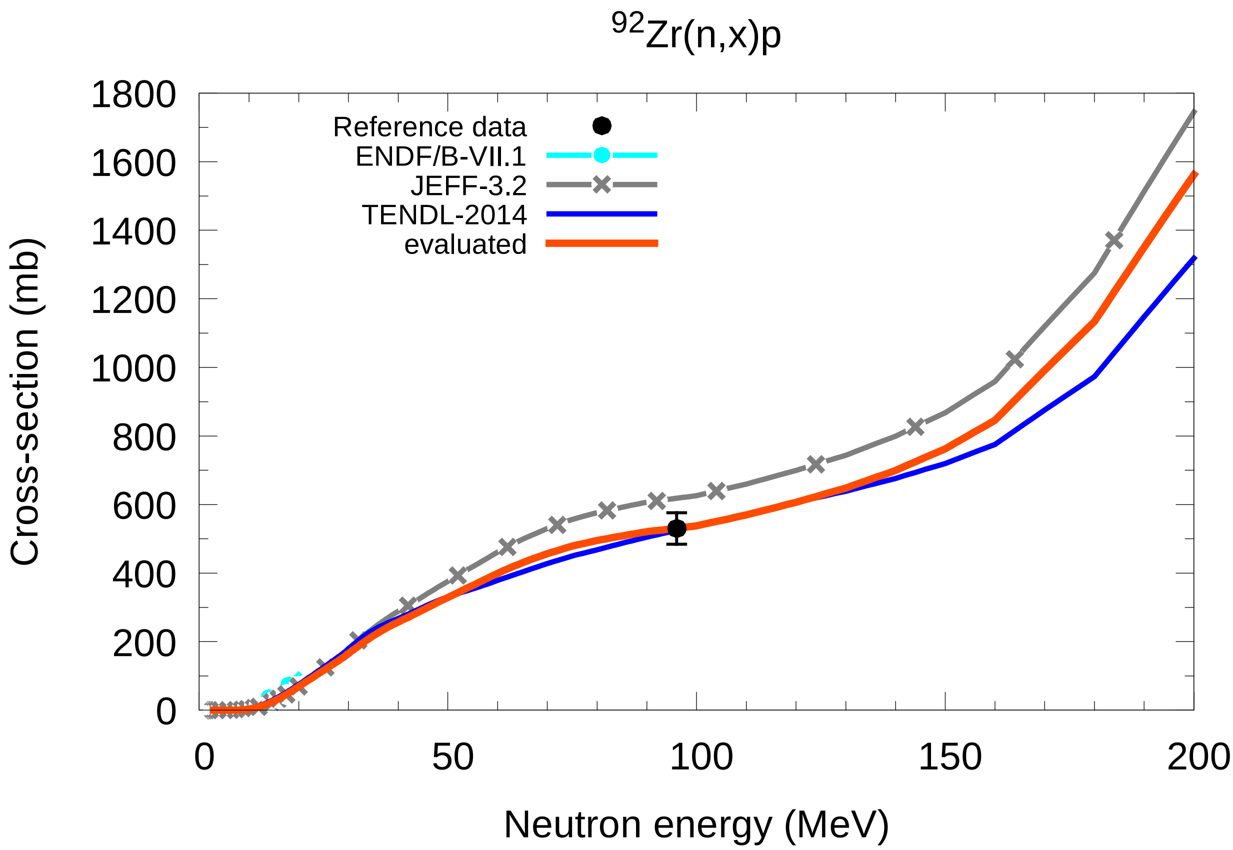
150
200



92Zr(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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400
600
800
1000
1200
1400
1600
1800
0
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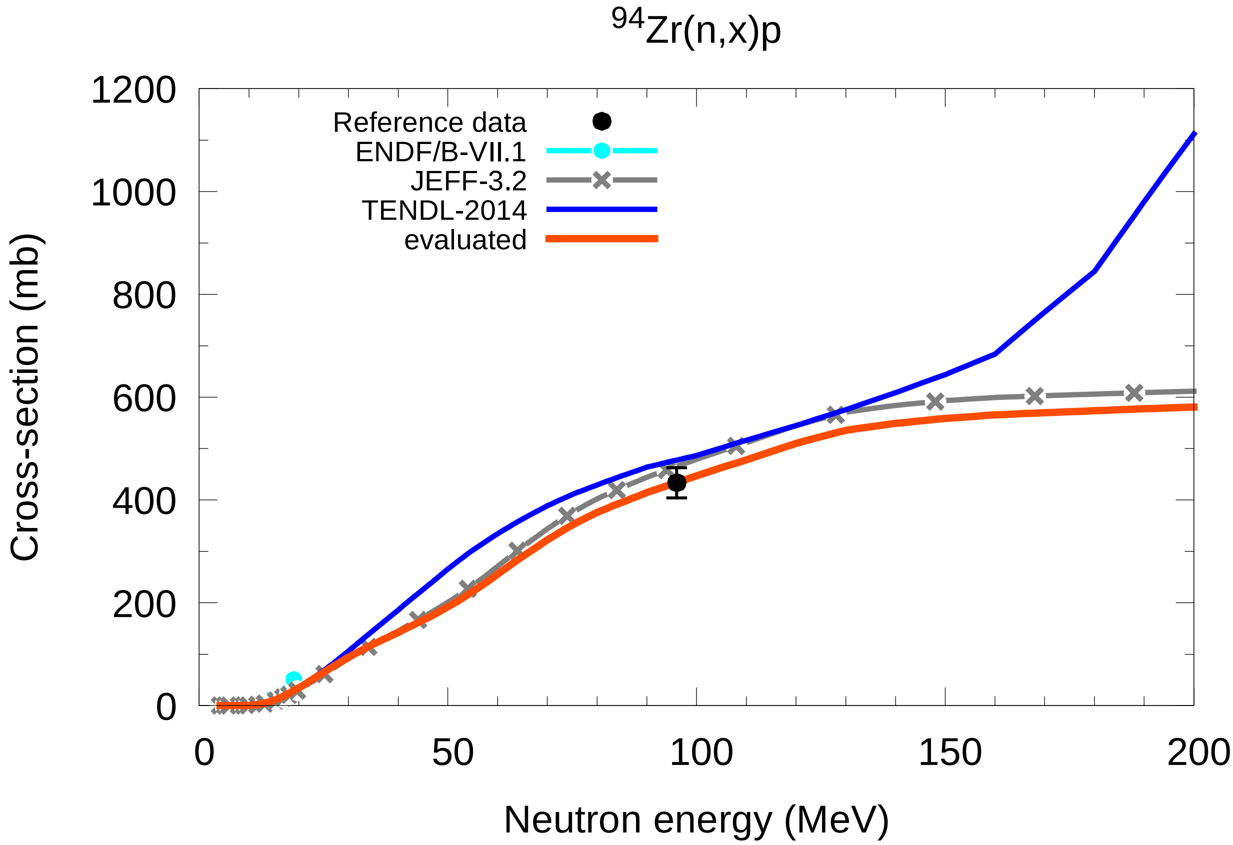
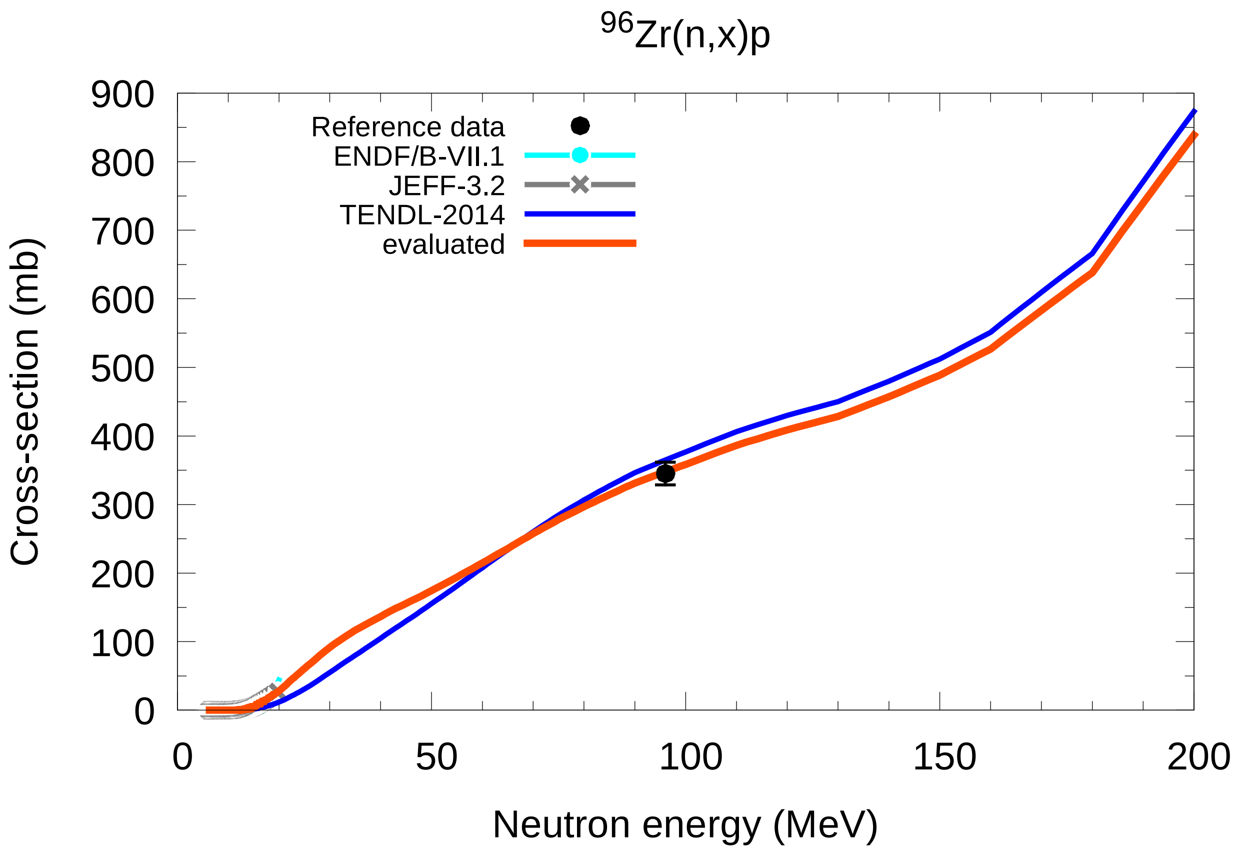
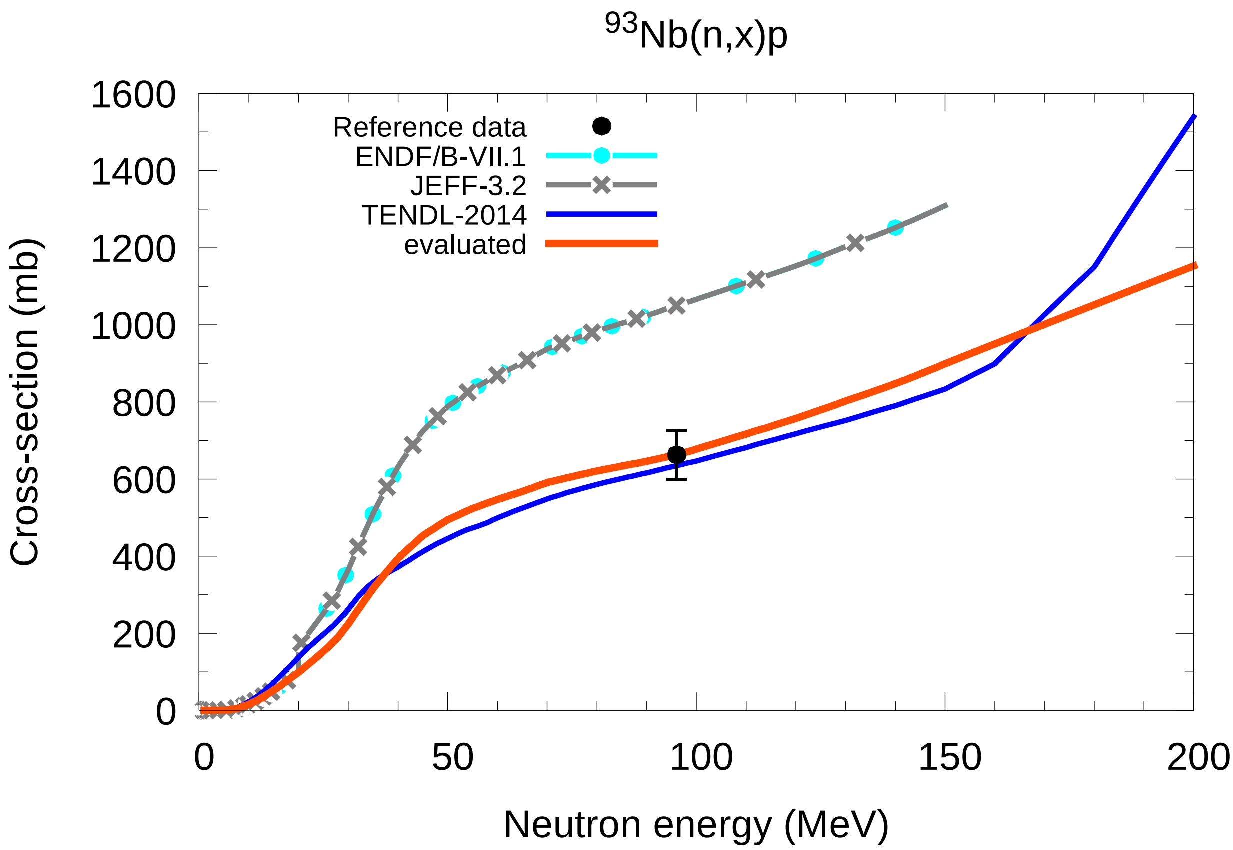
100
150
200



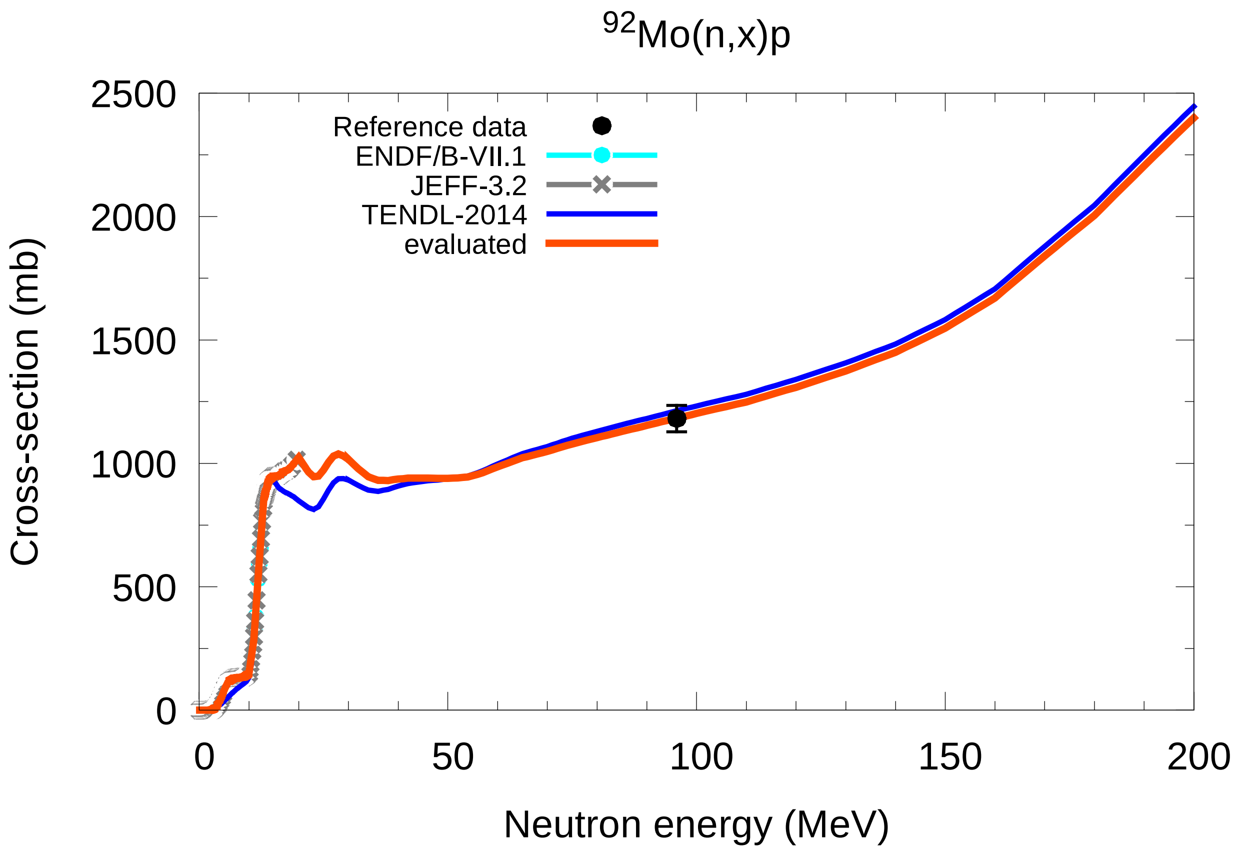
^{94}Zr(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
50
100
150
200



^{96}Zr(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
50
100
150
200



^{93}Nb(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
0
50
100
150
200



^{92}Mo(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
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1500
2000
2500
0
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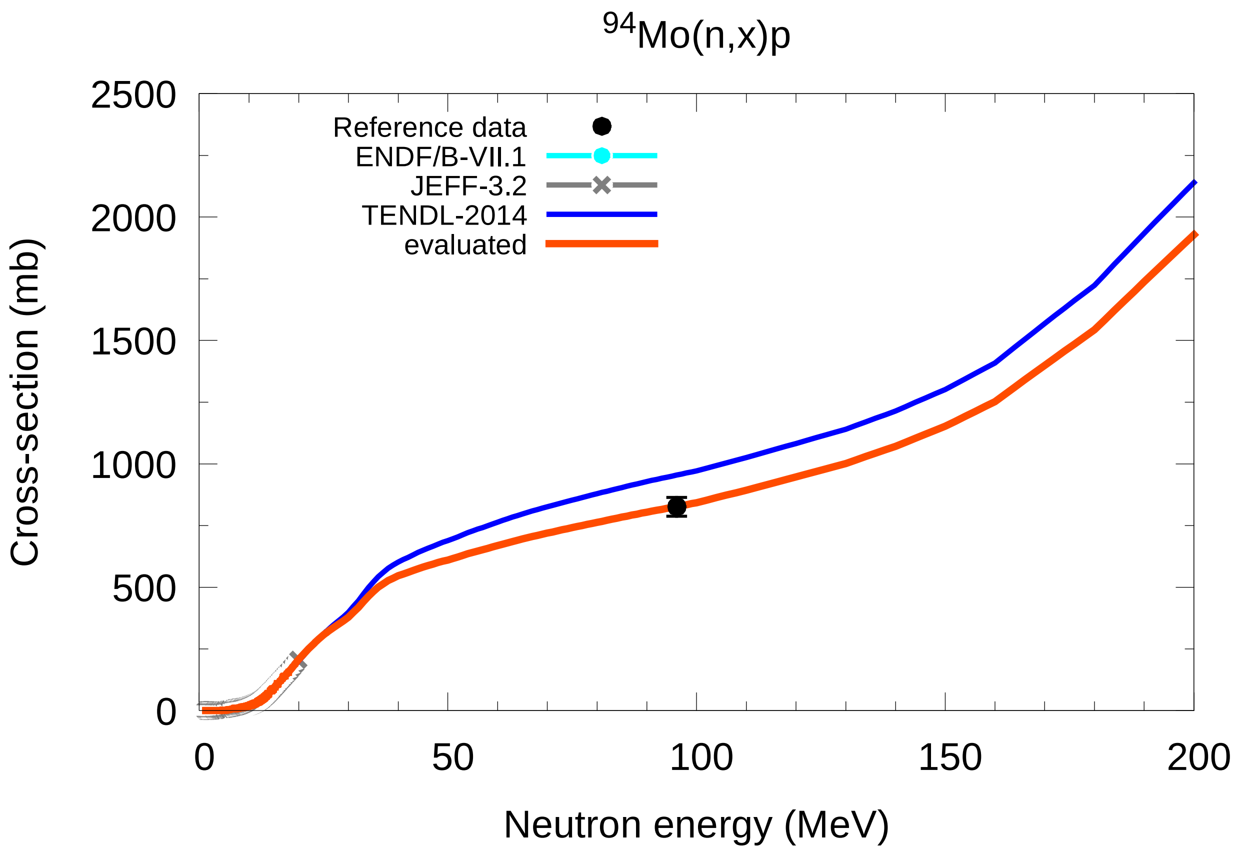
100
150
200



^{94}Mo(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
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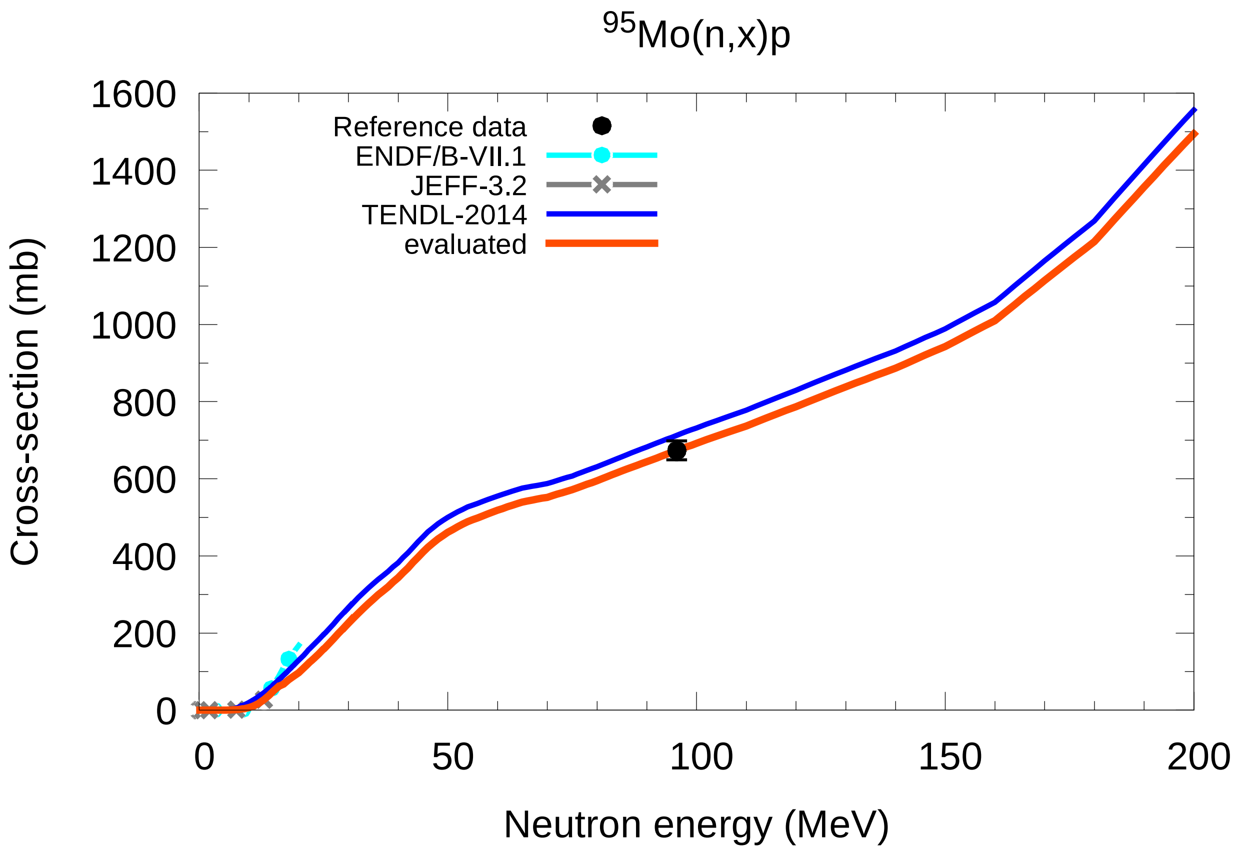
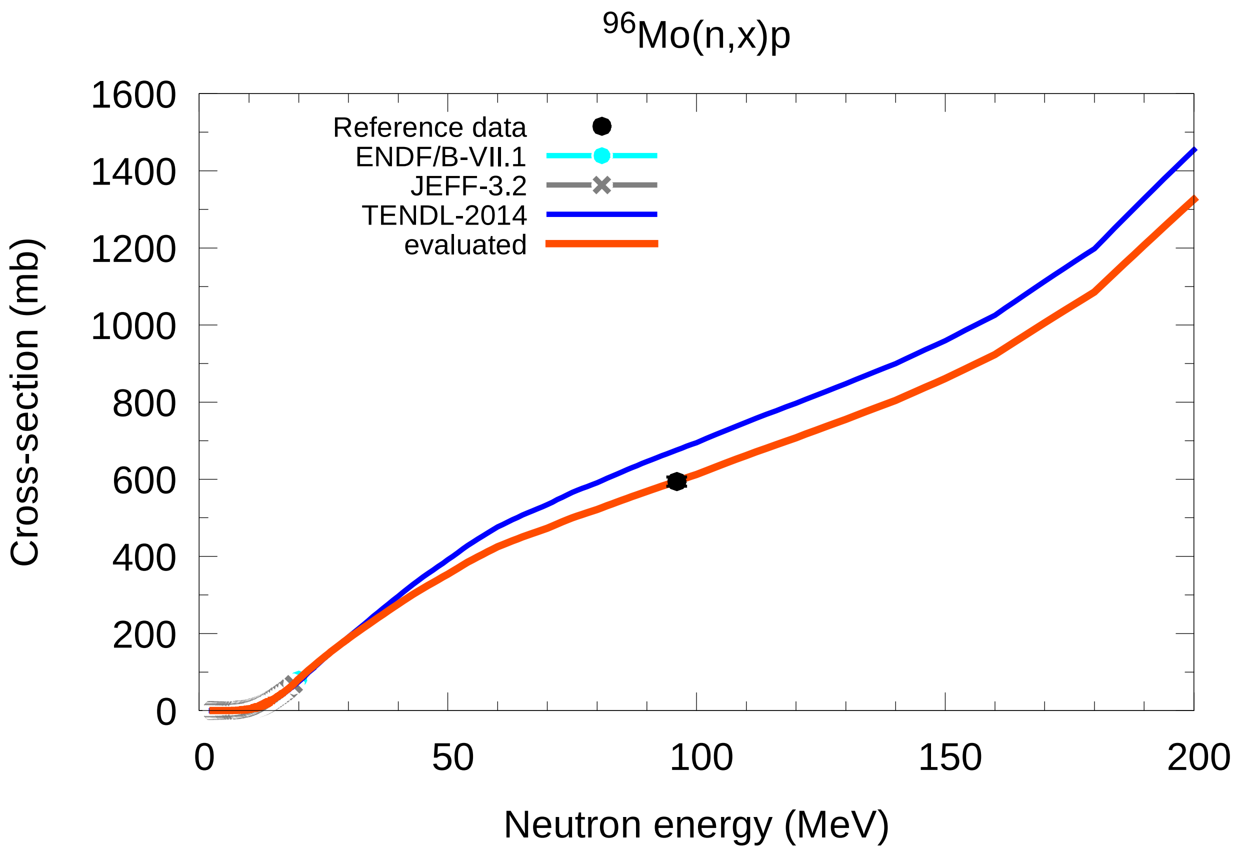
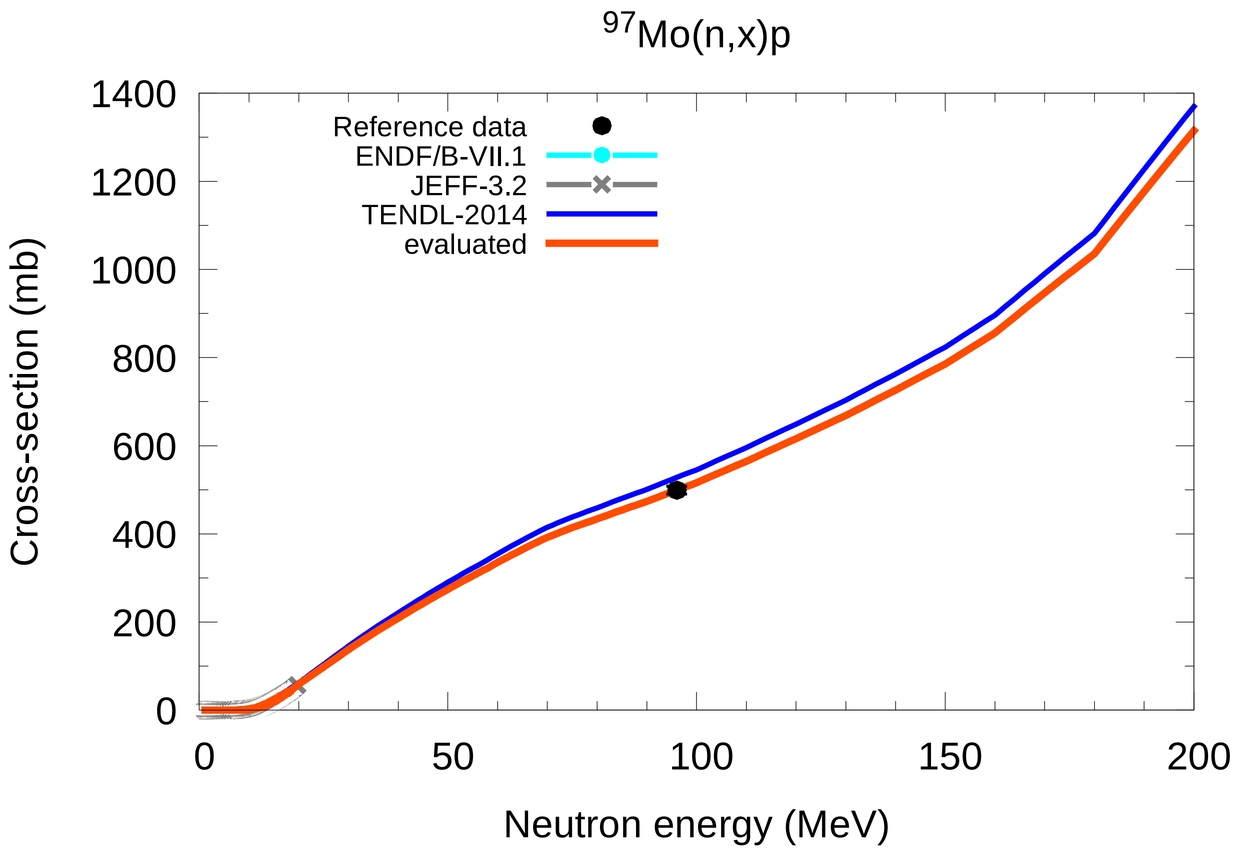
150
200



^{95}Mo(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
0
50
100
150
200



^{96}Mo(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
0
50
100
150
200



^{97}Mo(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
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1000
1200
1400
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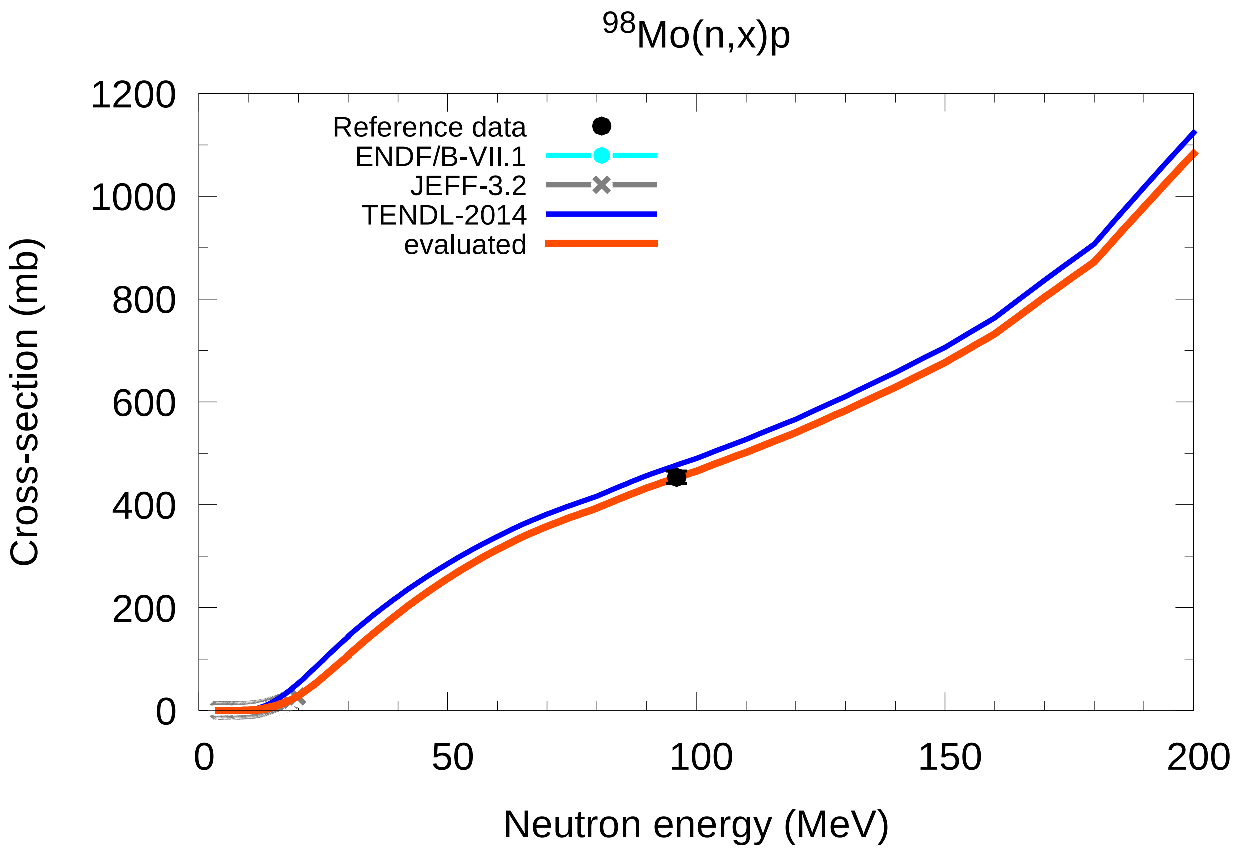
100
150
200


98Mo(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
0
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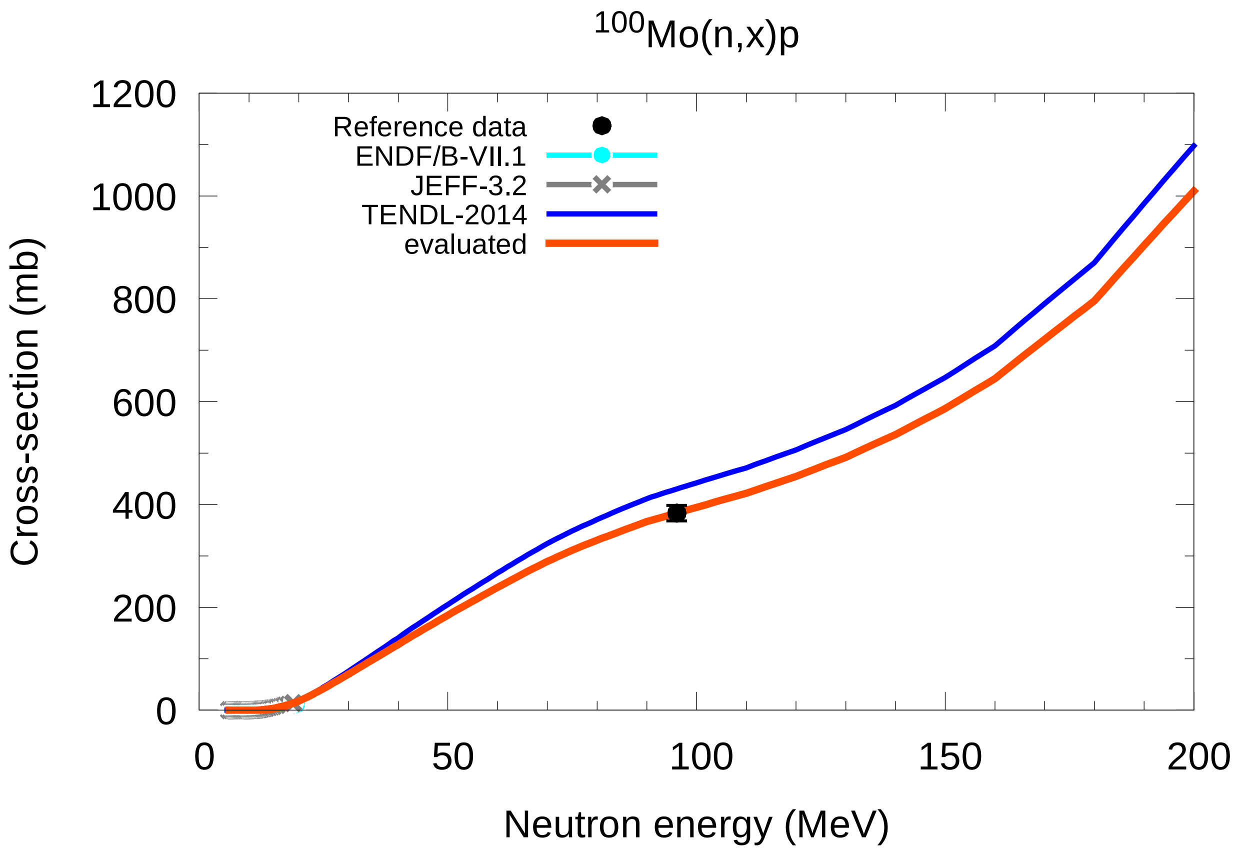
100
150
200


100Mo(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
0
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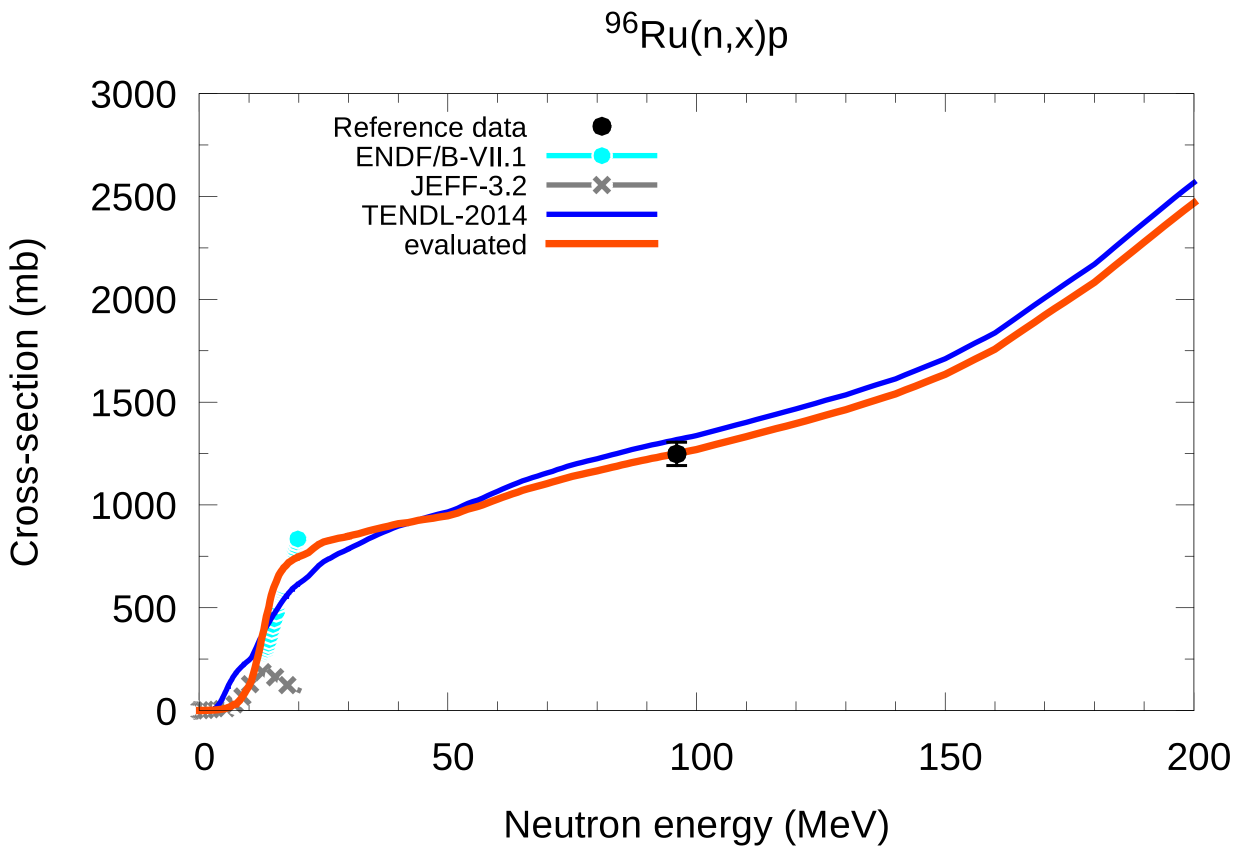
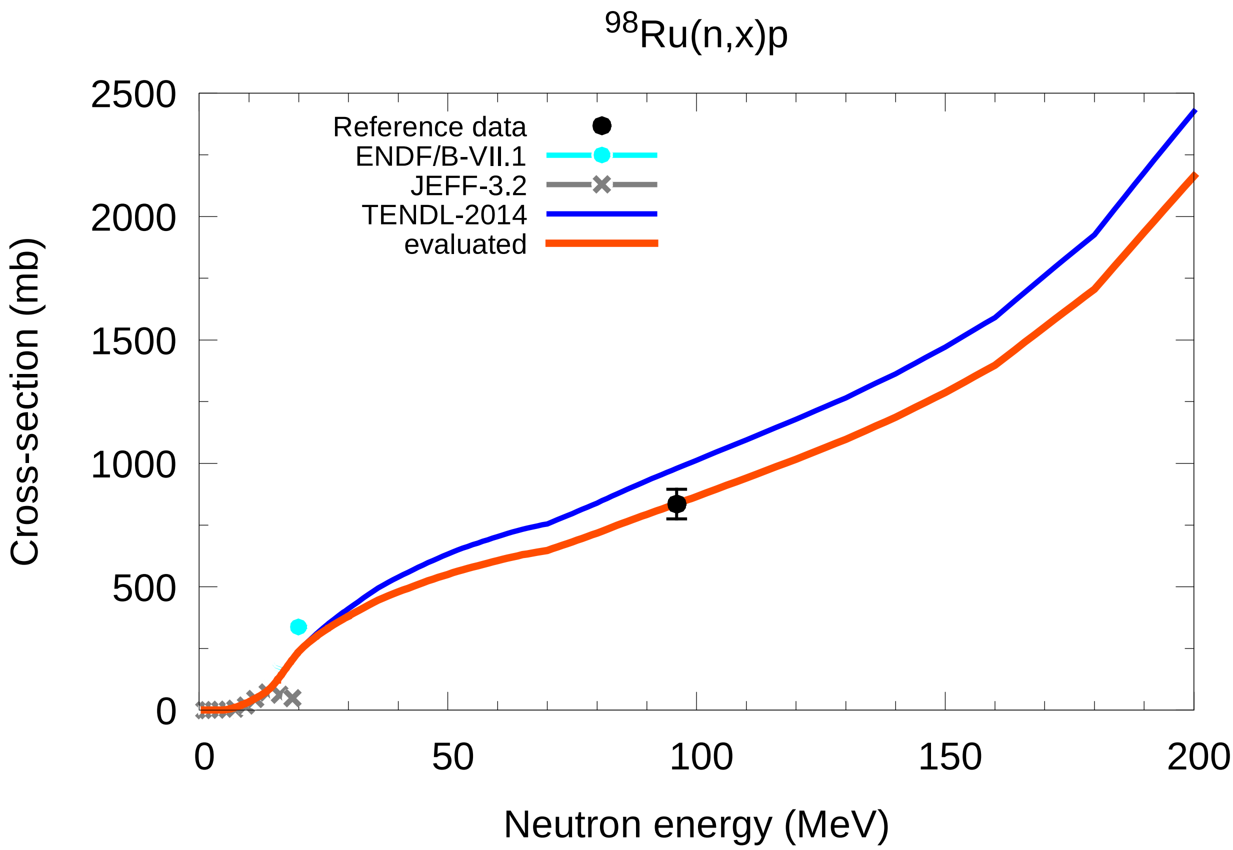
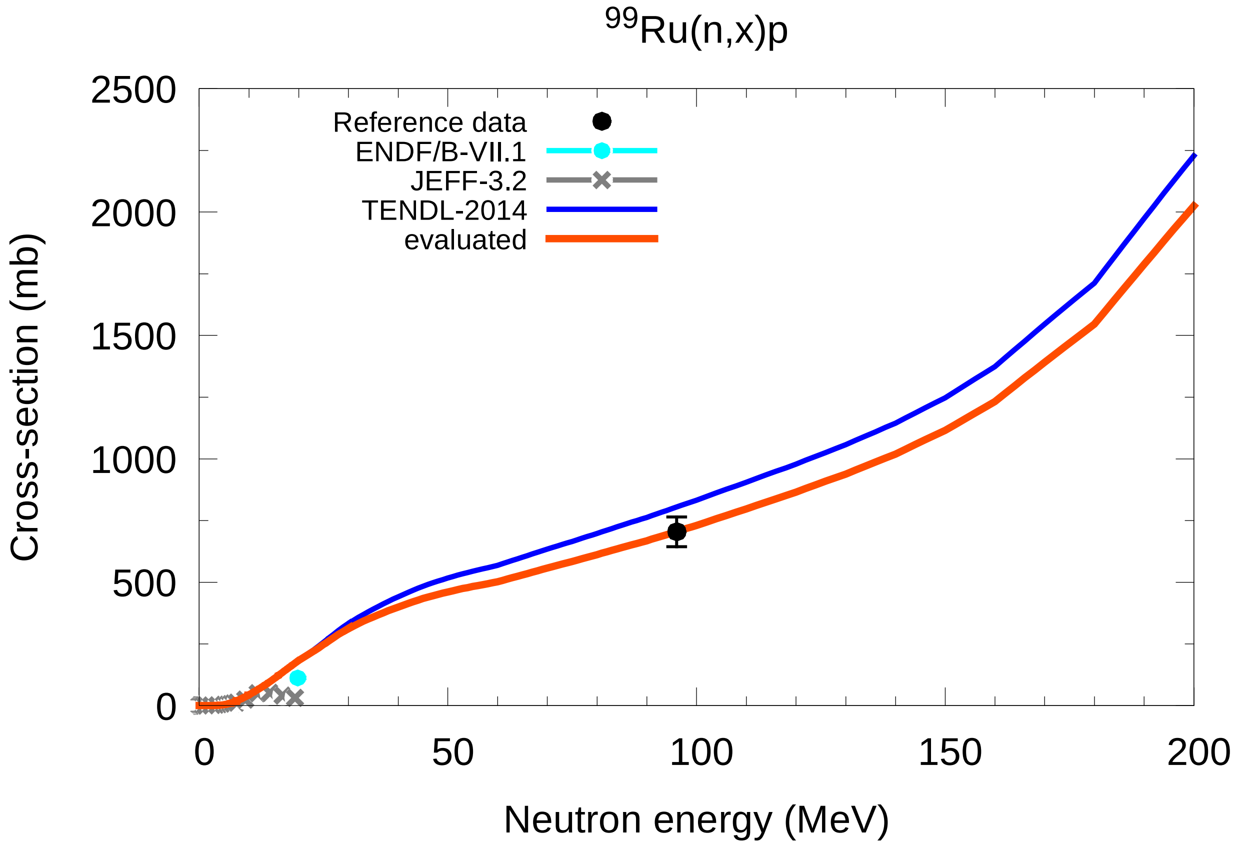
100
150
200



^{96}Ru(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
0
50
100
150
200



^{98}Ru(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



^{99}Ru(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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1000
1500
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2500
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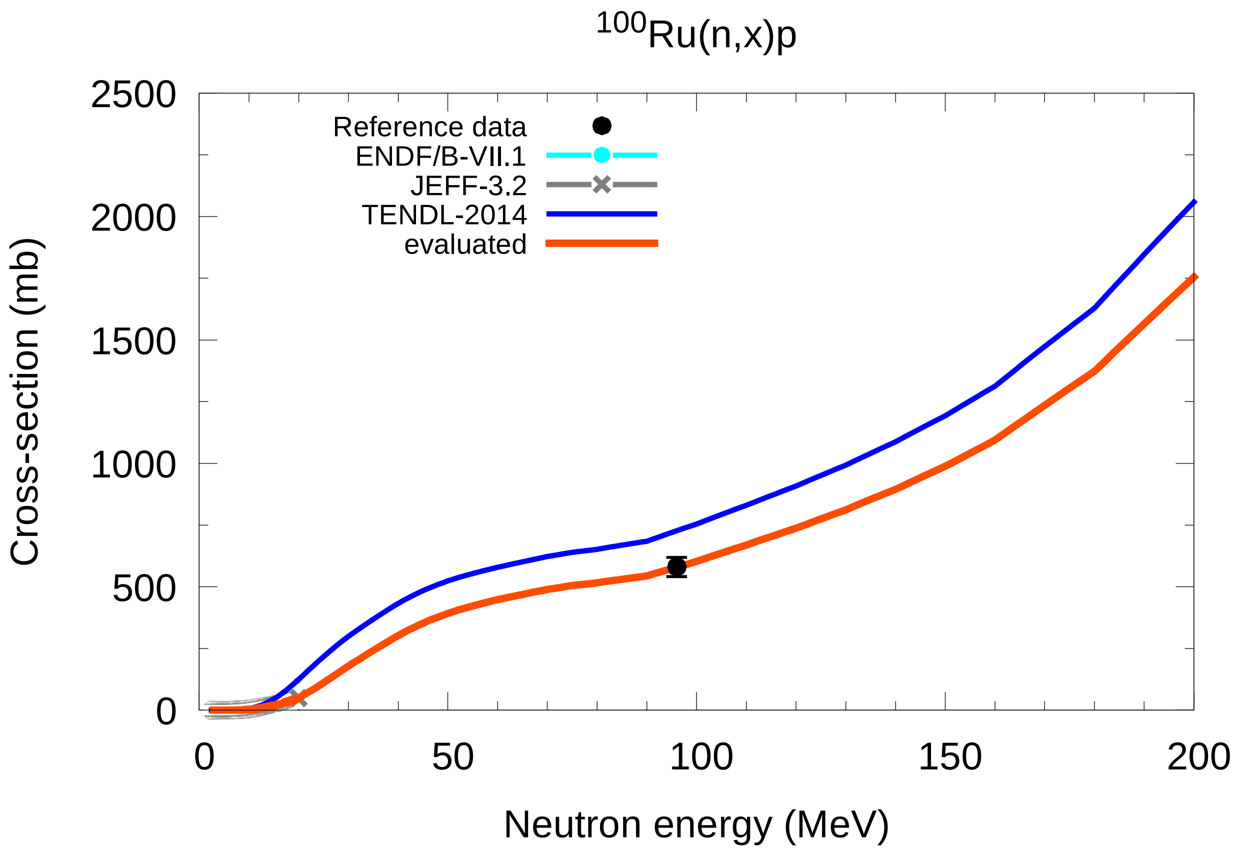

^{100}Ru(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
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2500
0
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150
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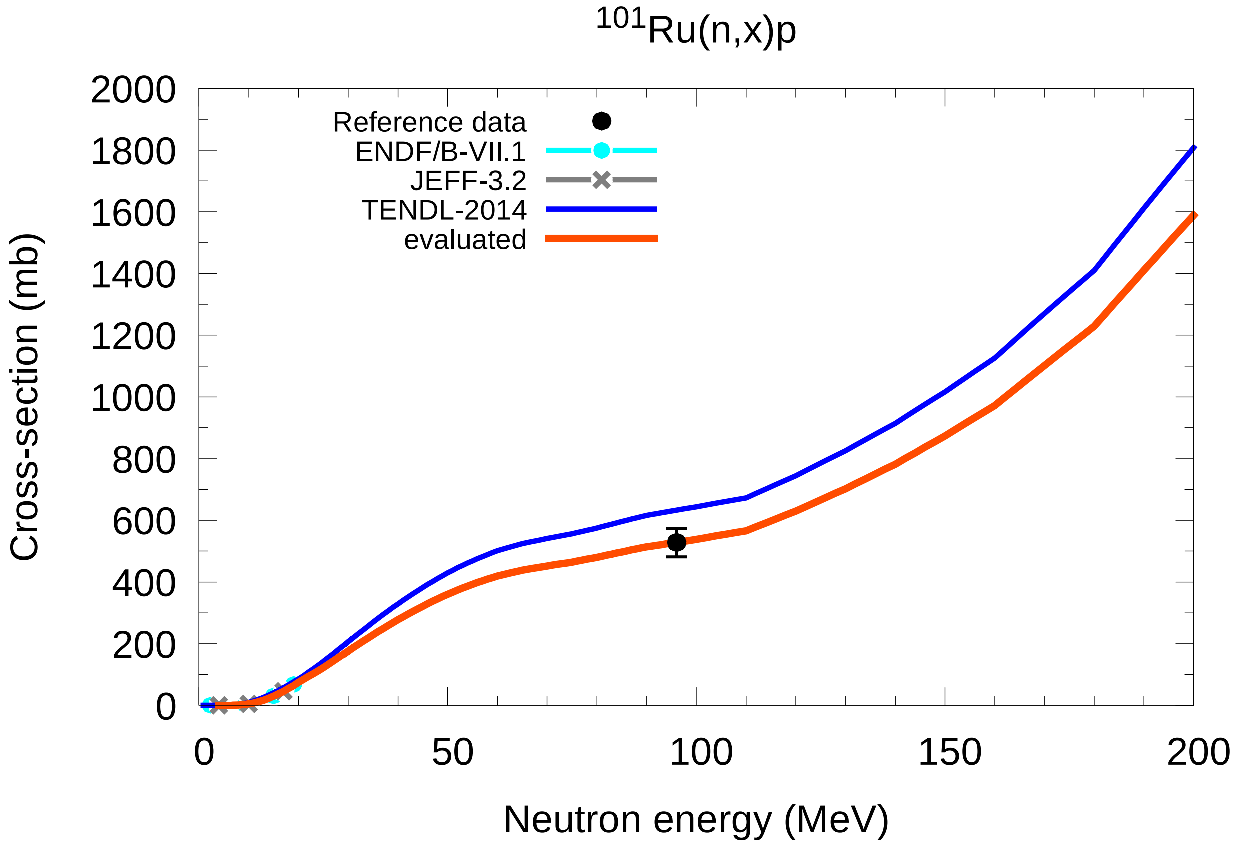
101Ru(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
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1200
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1600
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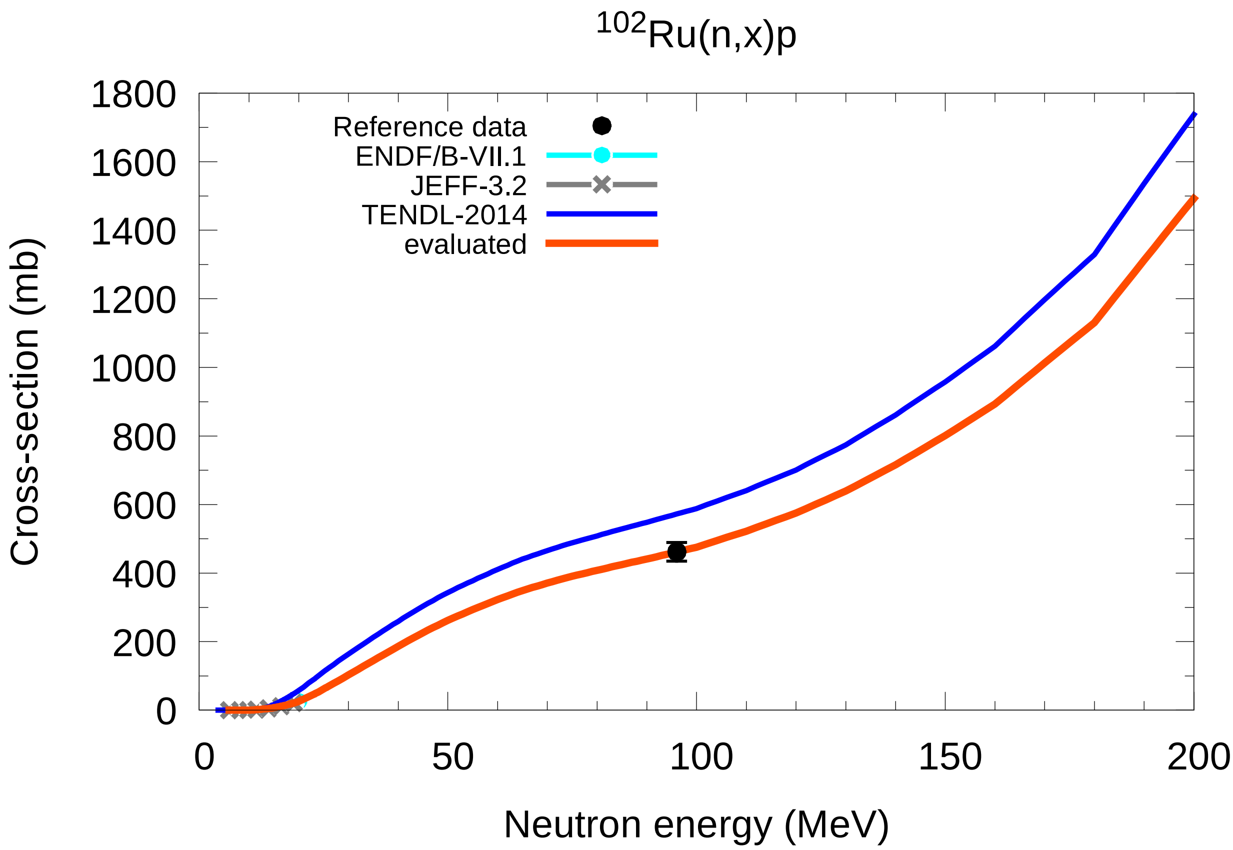
102Ru(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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200
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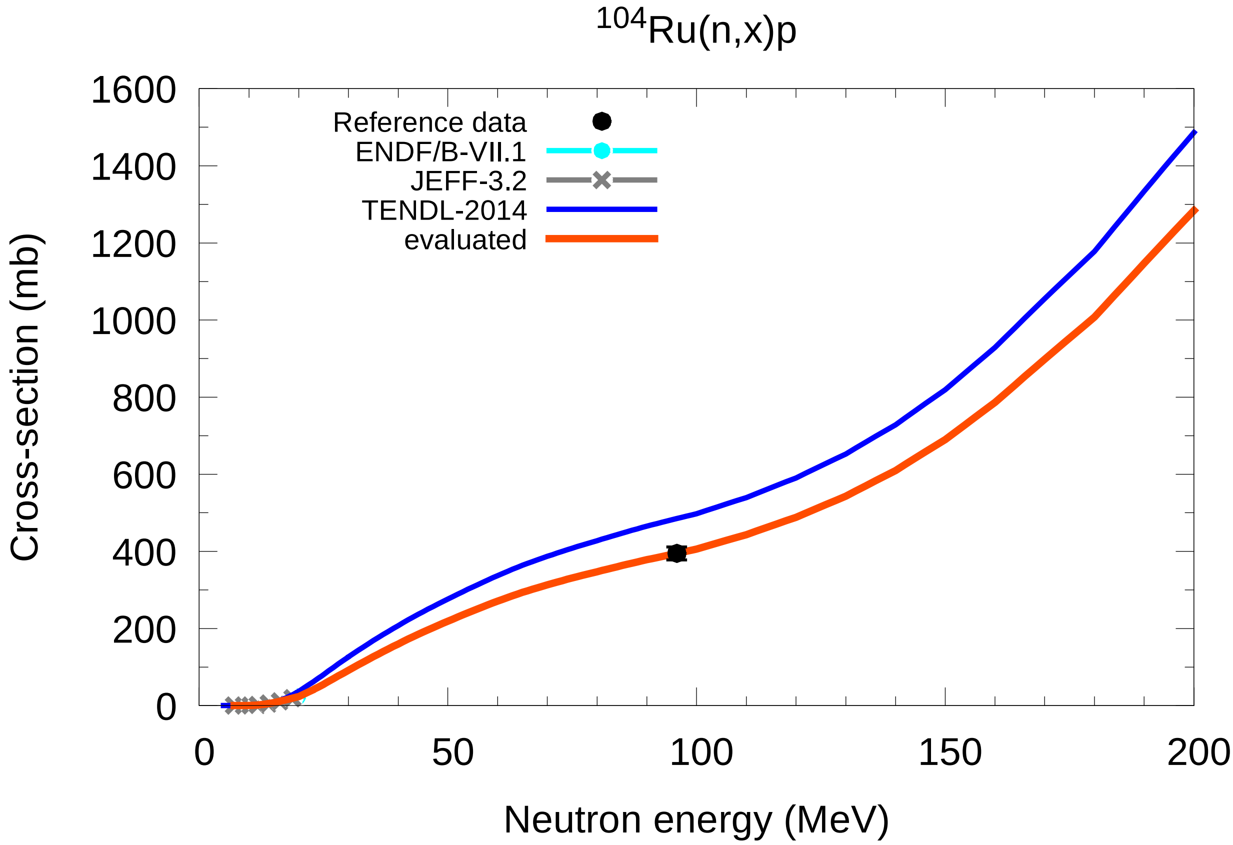

104Ru(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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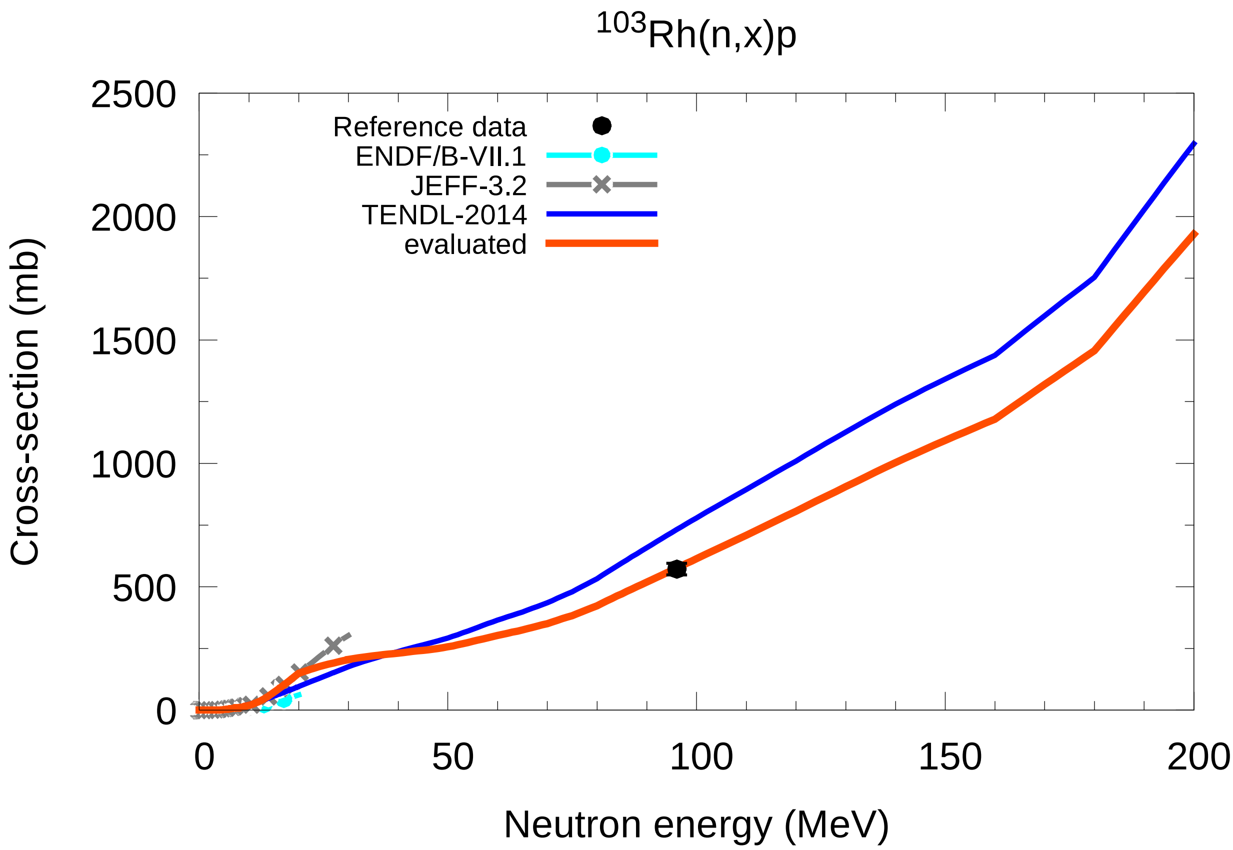

103Rh(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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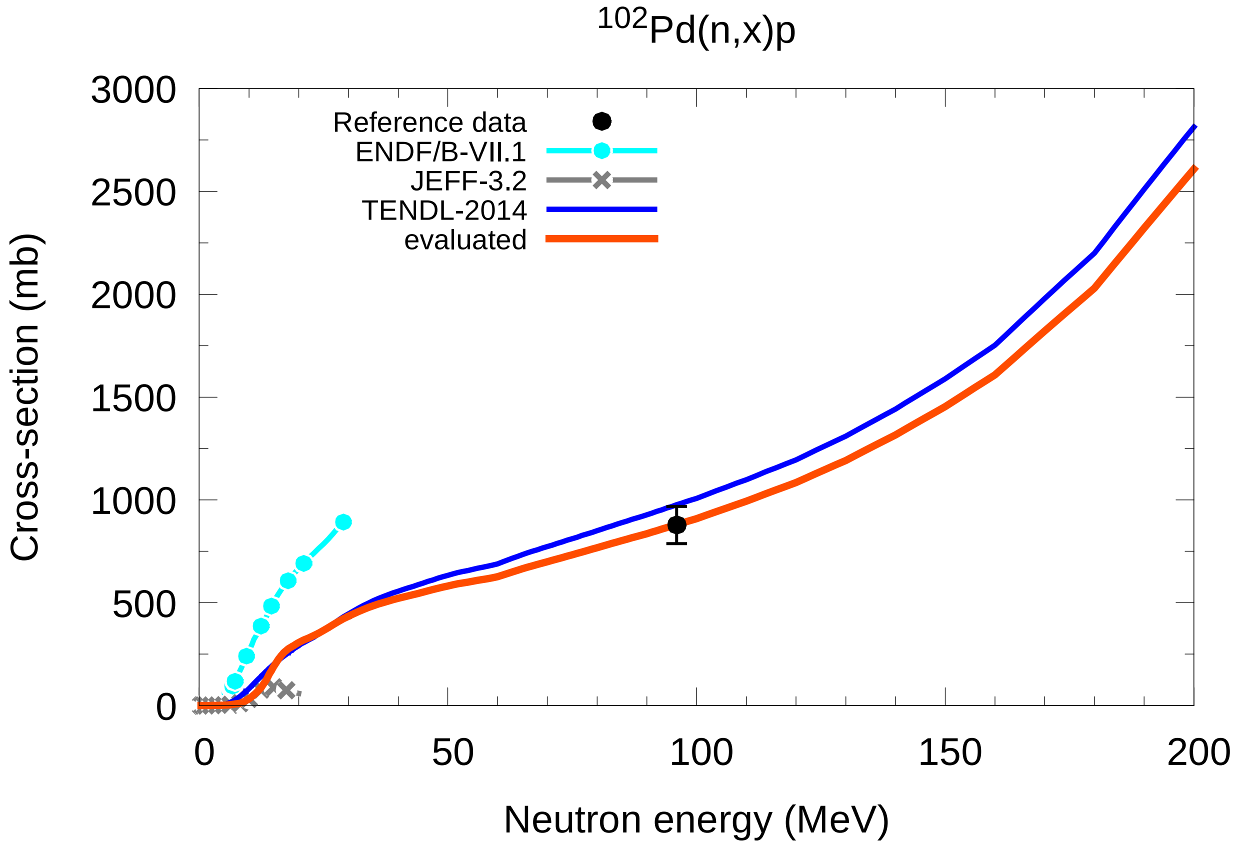

^{102}Pd(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
500
1000
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2000
2500
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0
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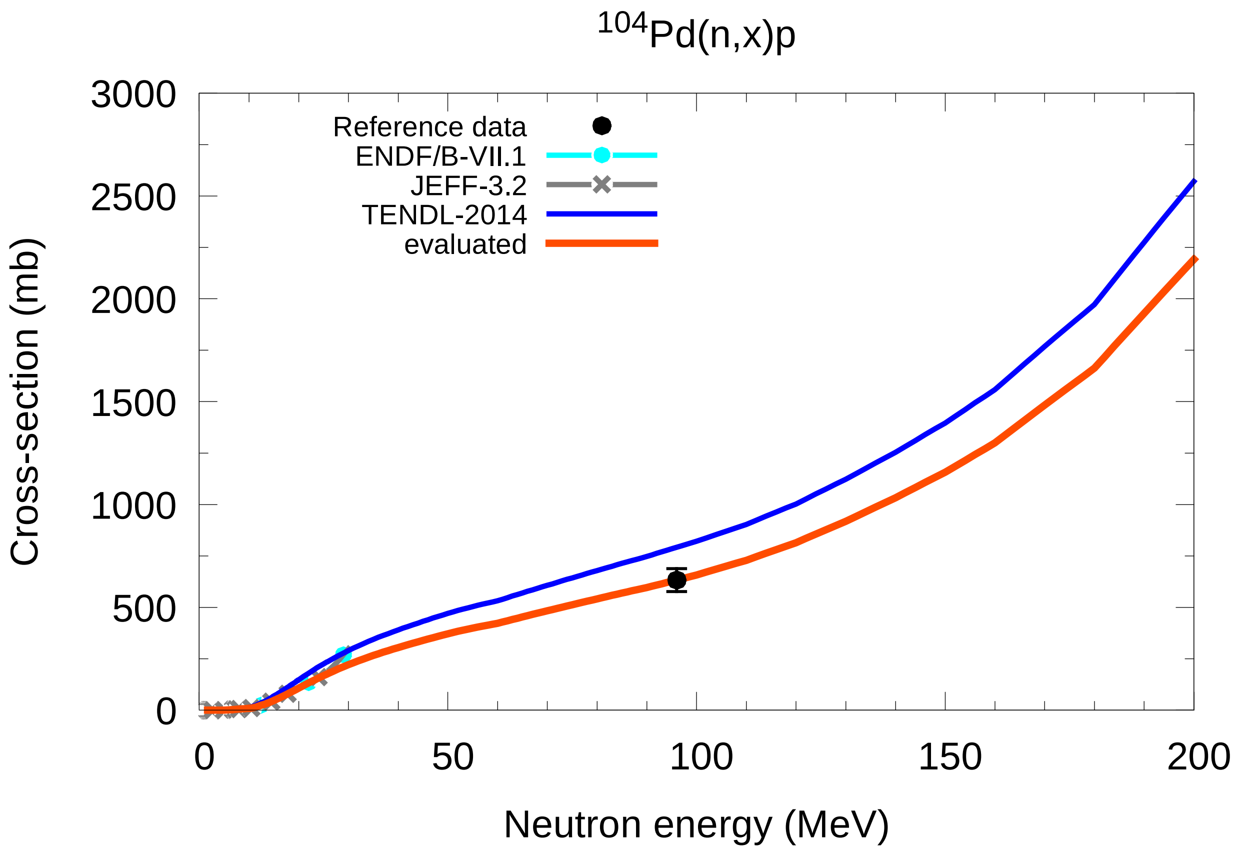

^{104}Pd(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
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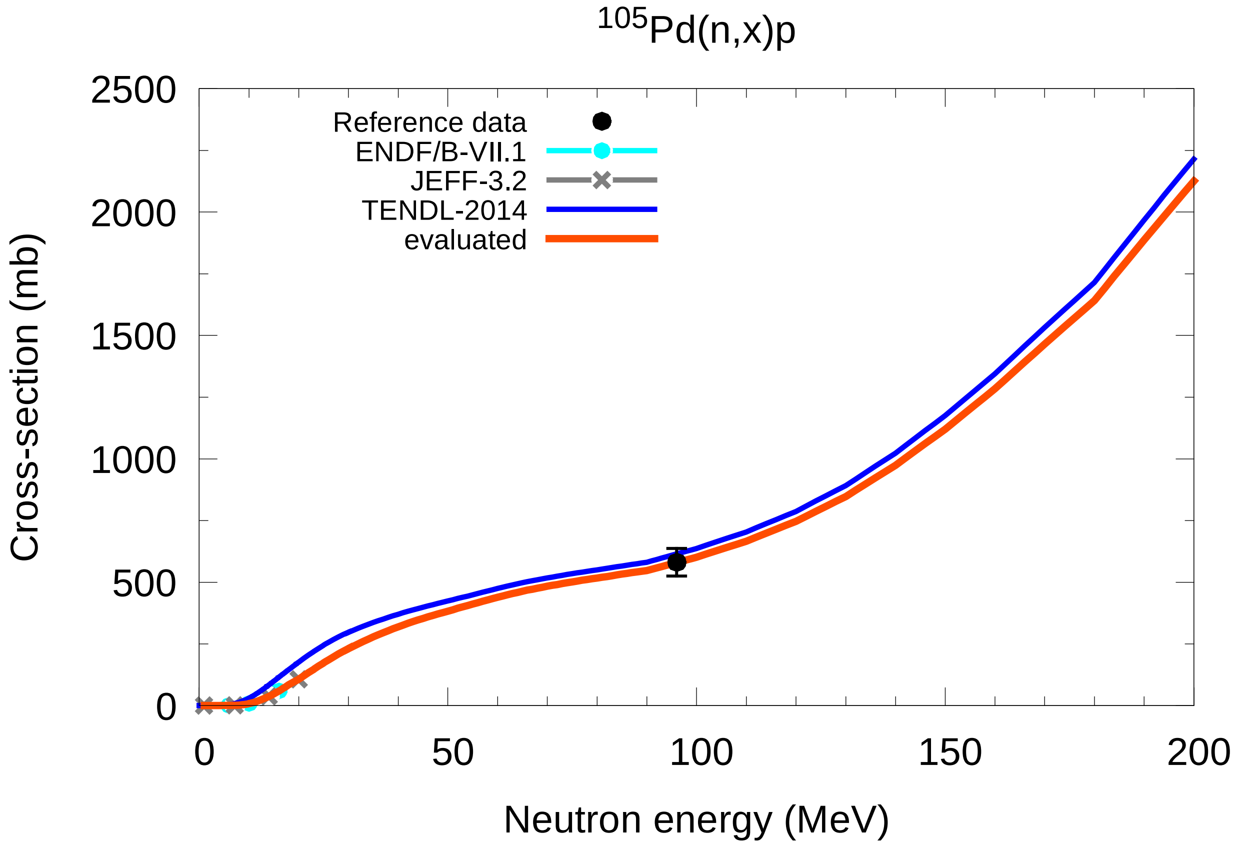

^{105}Pd(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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1500
2000
2500
0
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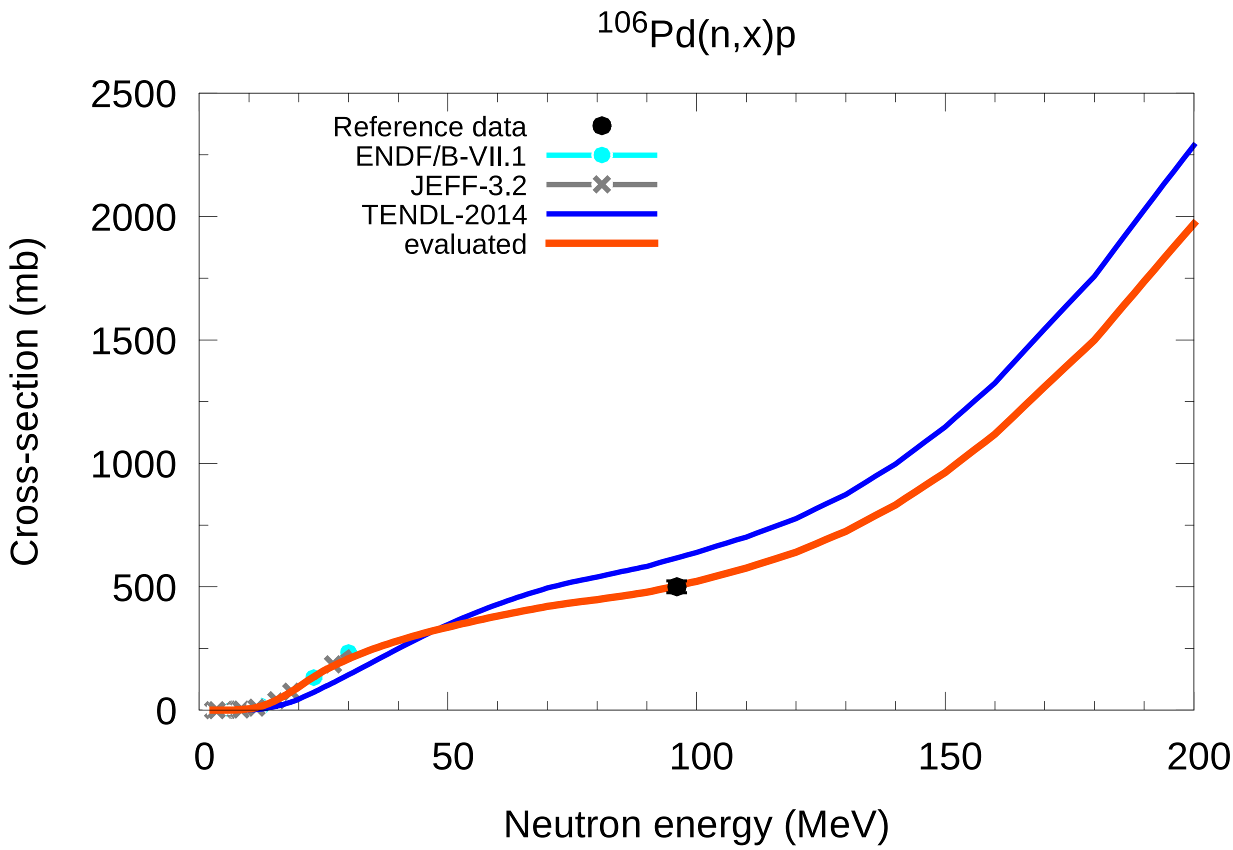

^{106}Pd(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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150
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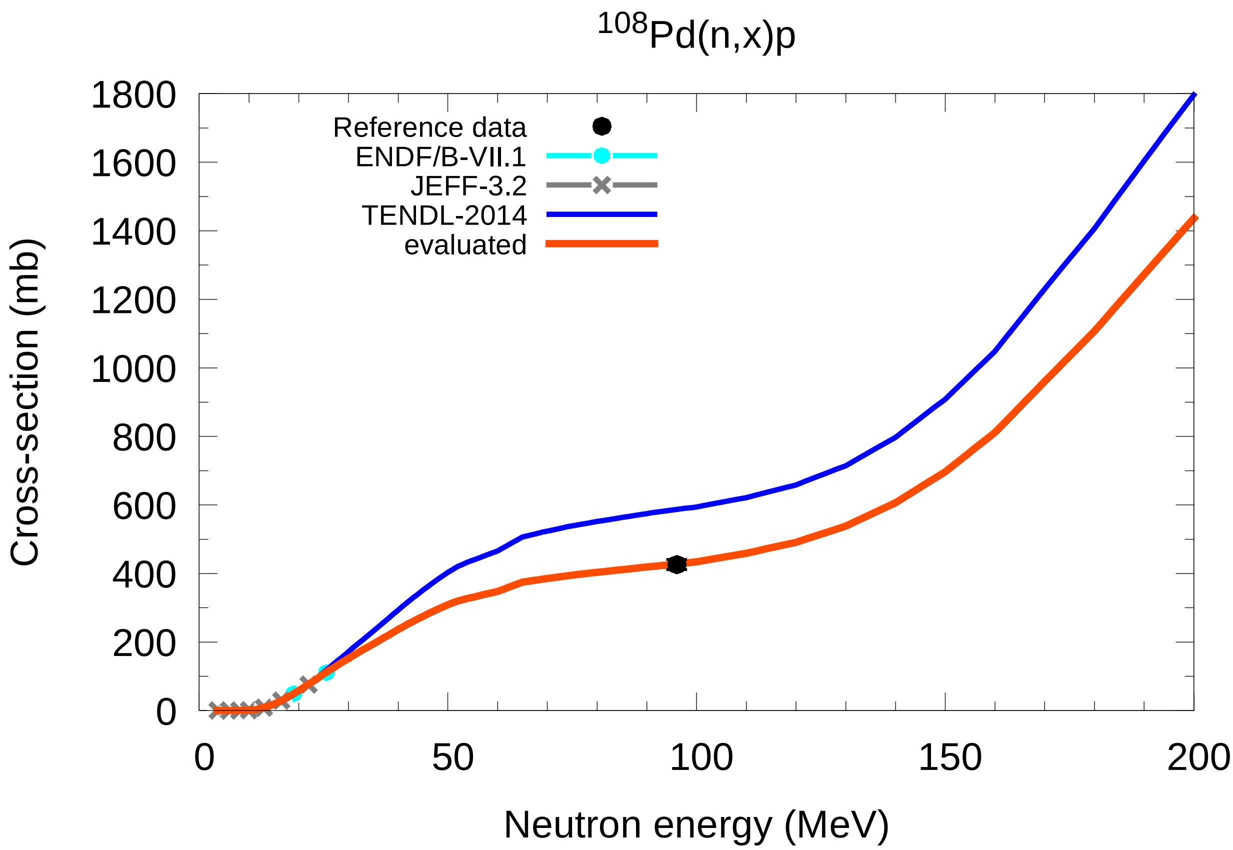

108Pd(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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1000
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1600
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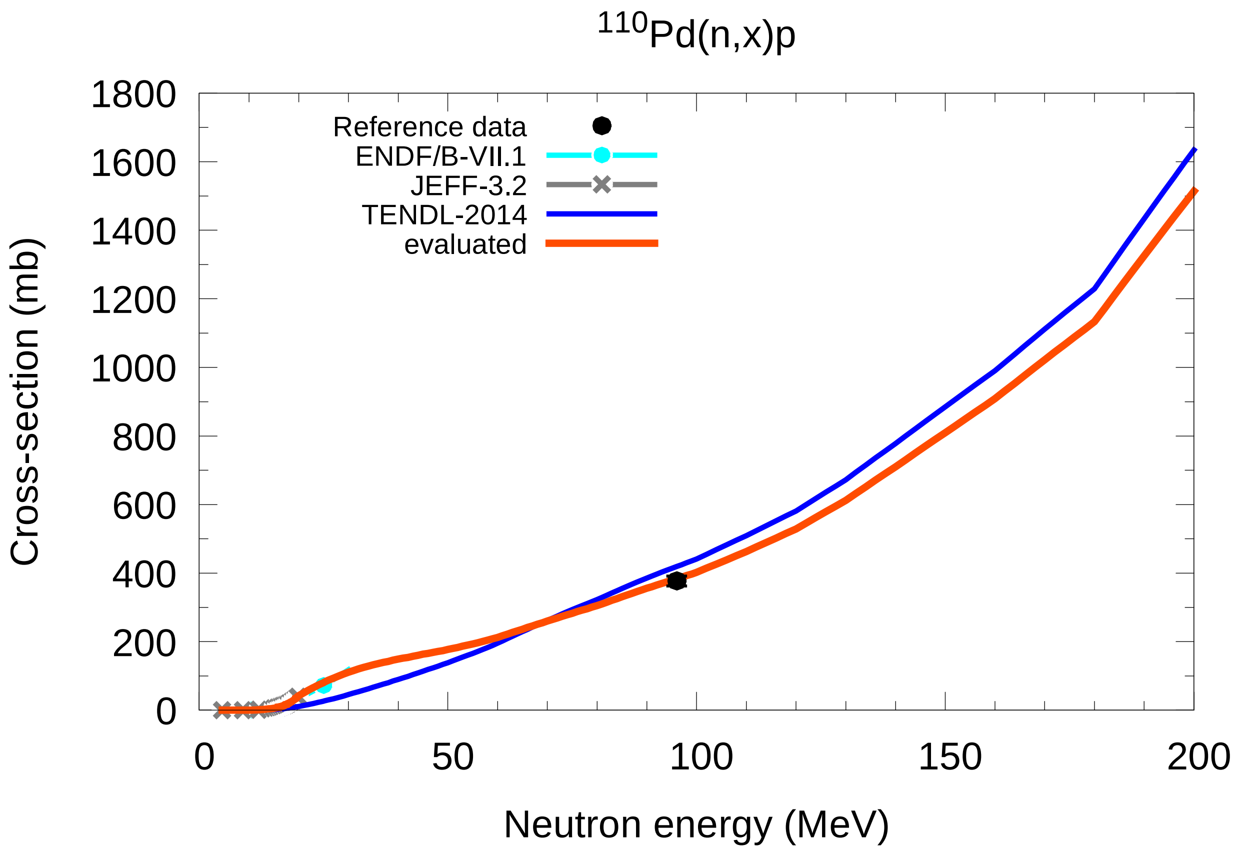

110Pd(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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400
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0
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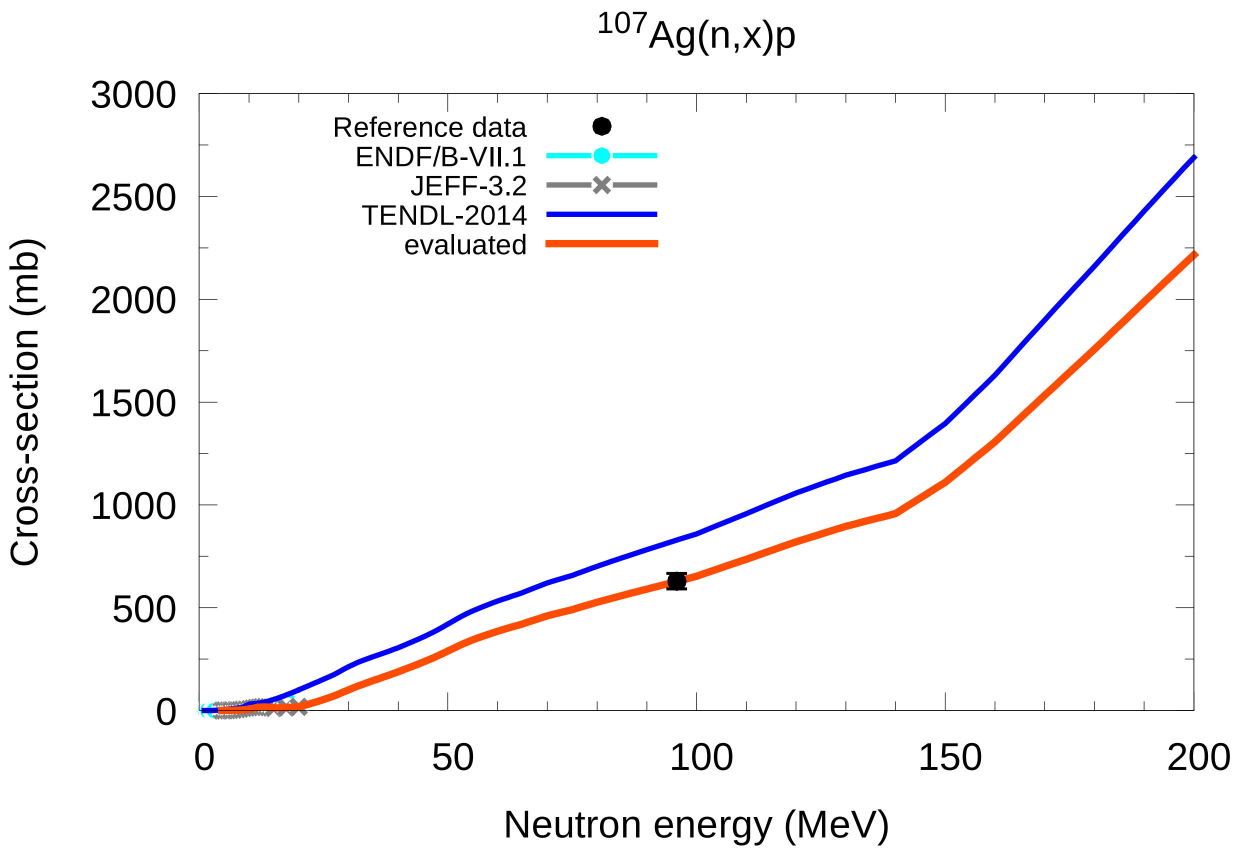

^{107}Ag(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
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1000
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2000
2500
3000
0
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100
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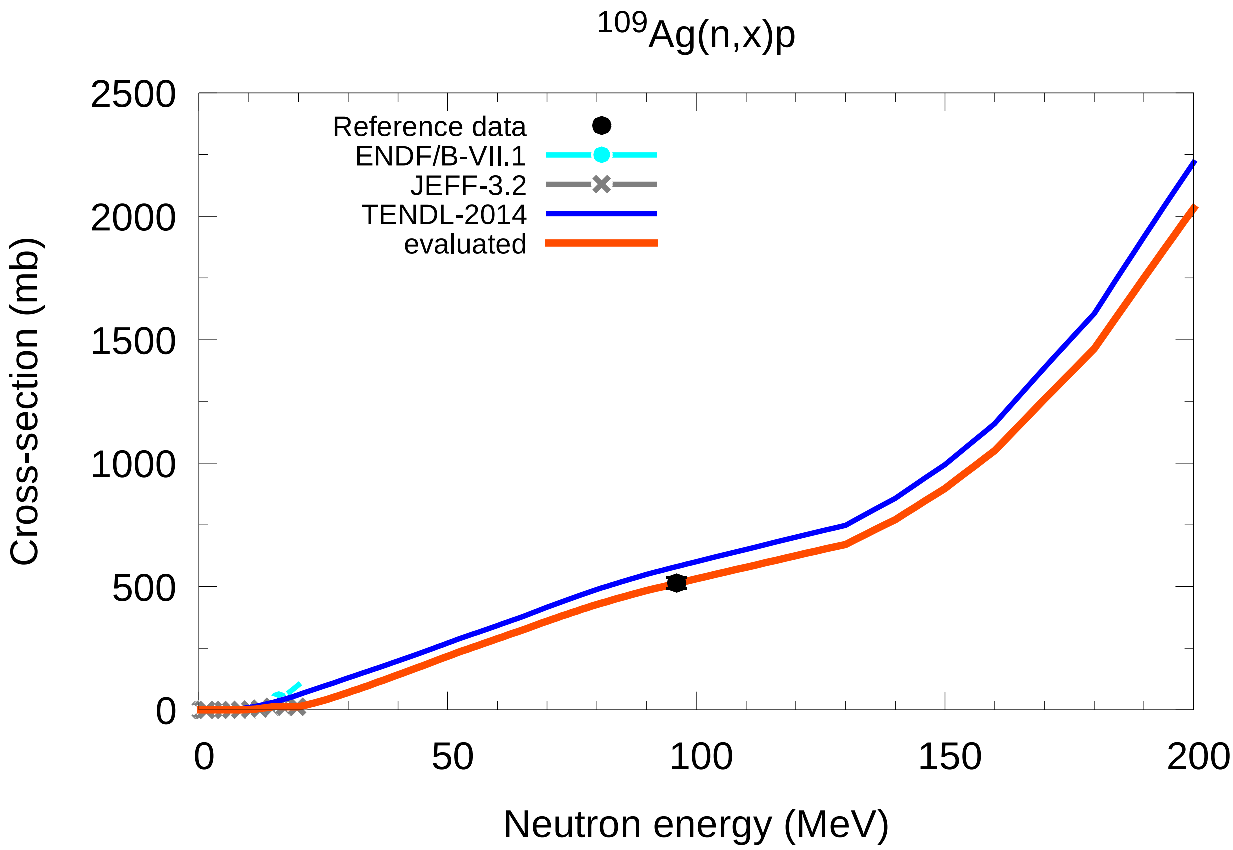
200



^{109}Ag(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
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1500
2000
2500
0
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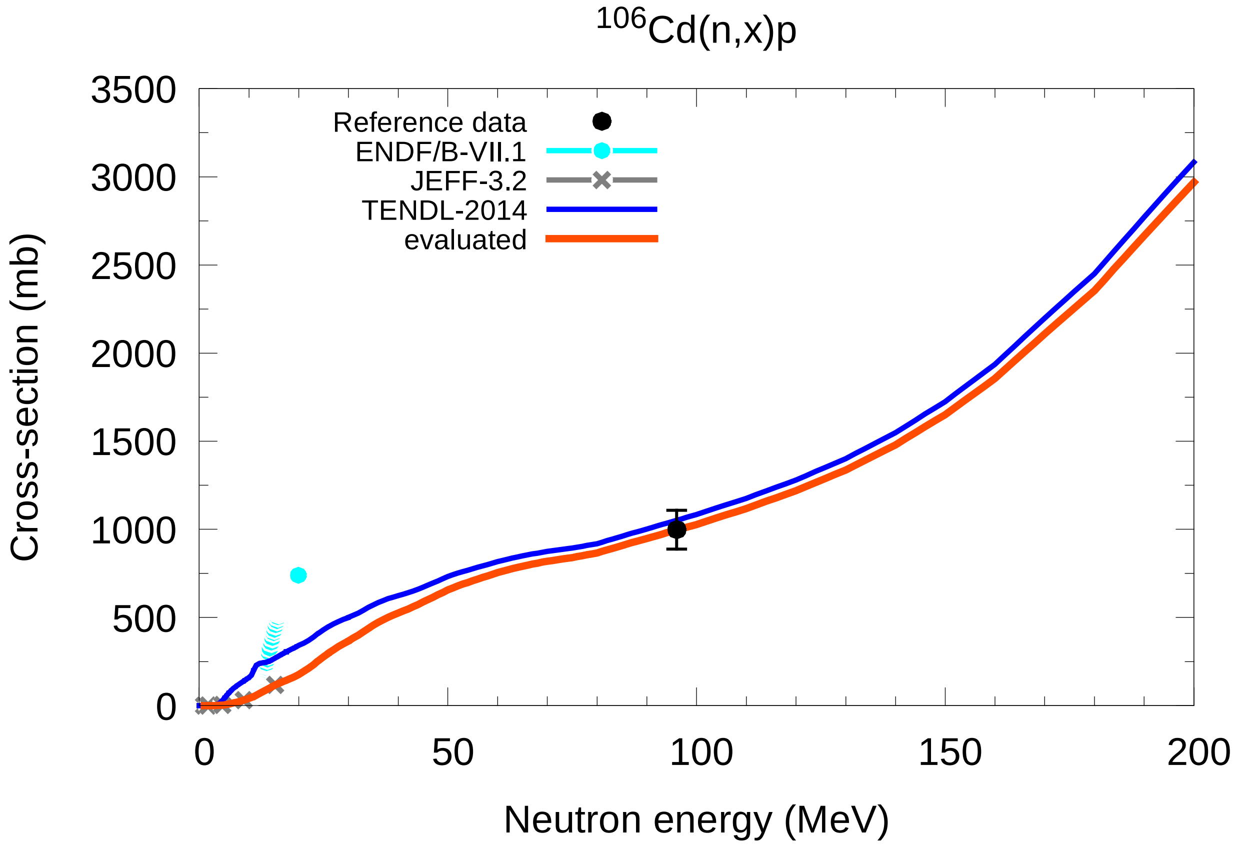
^{106}Cd(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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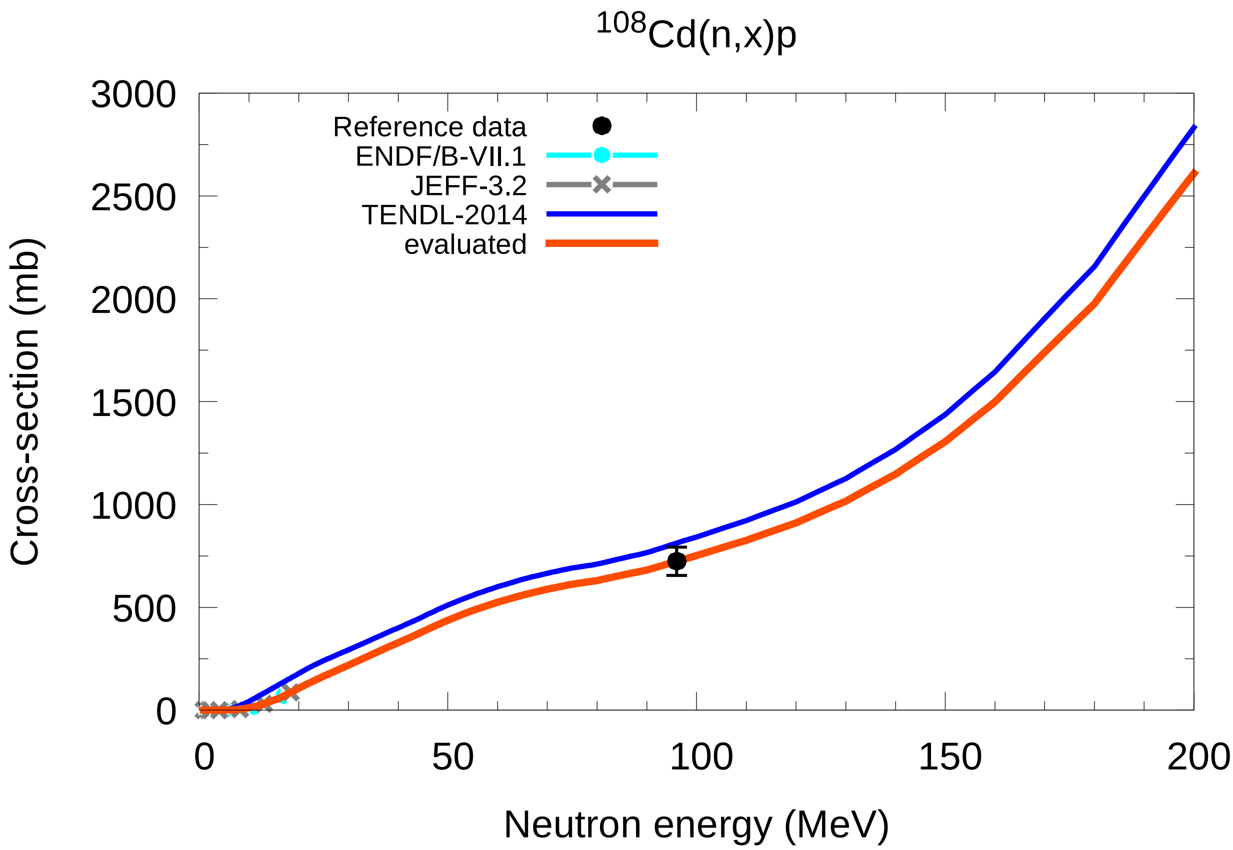
^{108}Cd(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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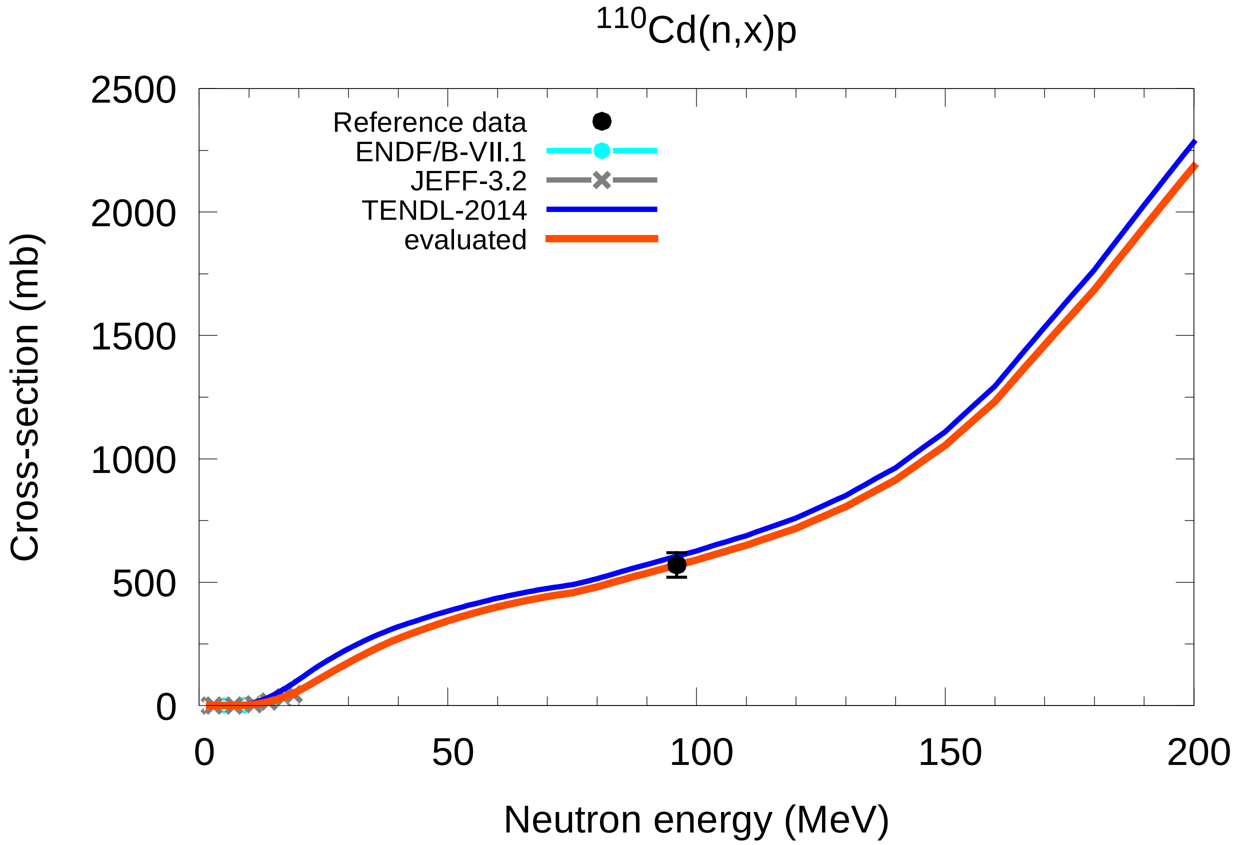

^{110}Cd(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
2500
2000
1500
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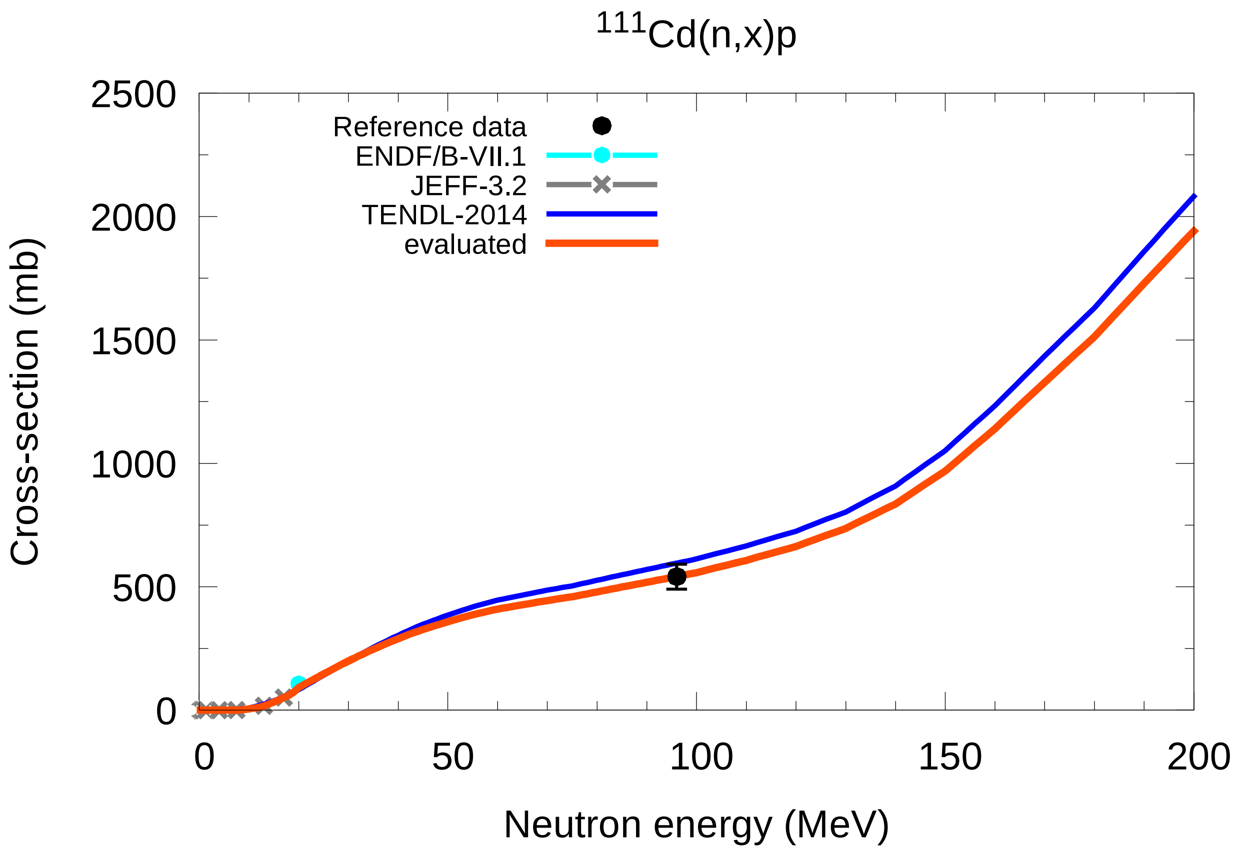
500
0
0
50
100
150
200
Neutron energy (MeV)



^{111}Cd(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
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2000
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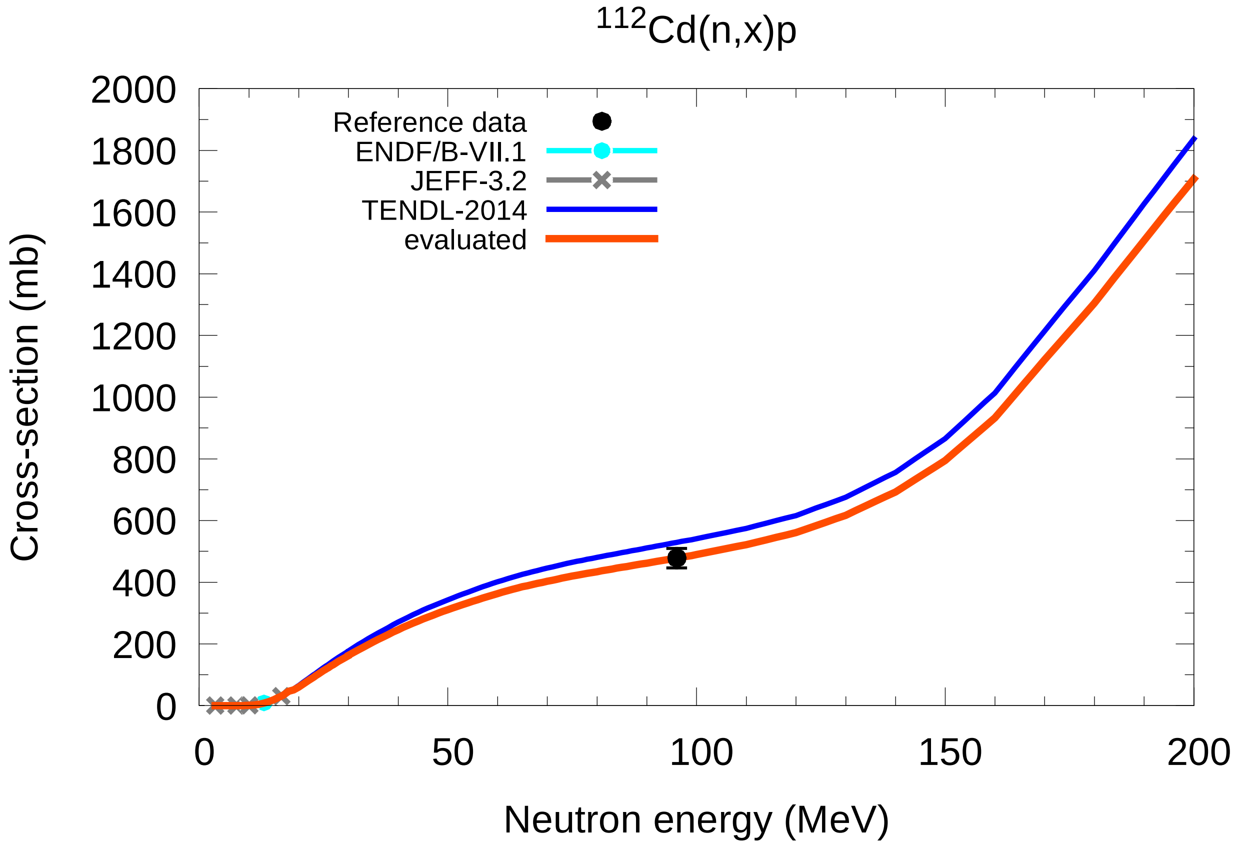
1000
500
0
0
50
100
150
200
Neutron energy (MeV)



$^{112}Cd(n,x)p$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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400
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800
1000
1200
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1600
1800
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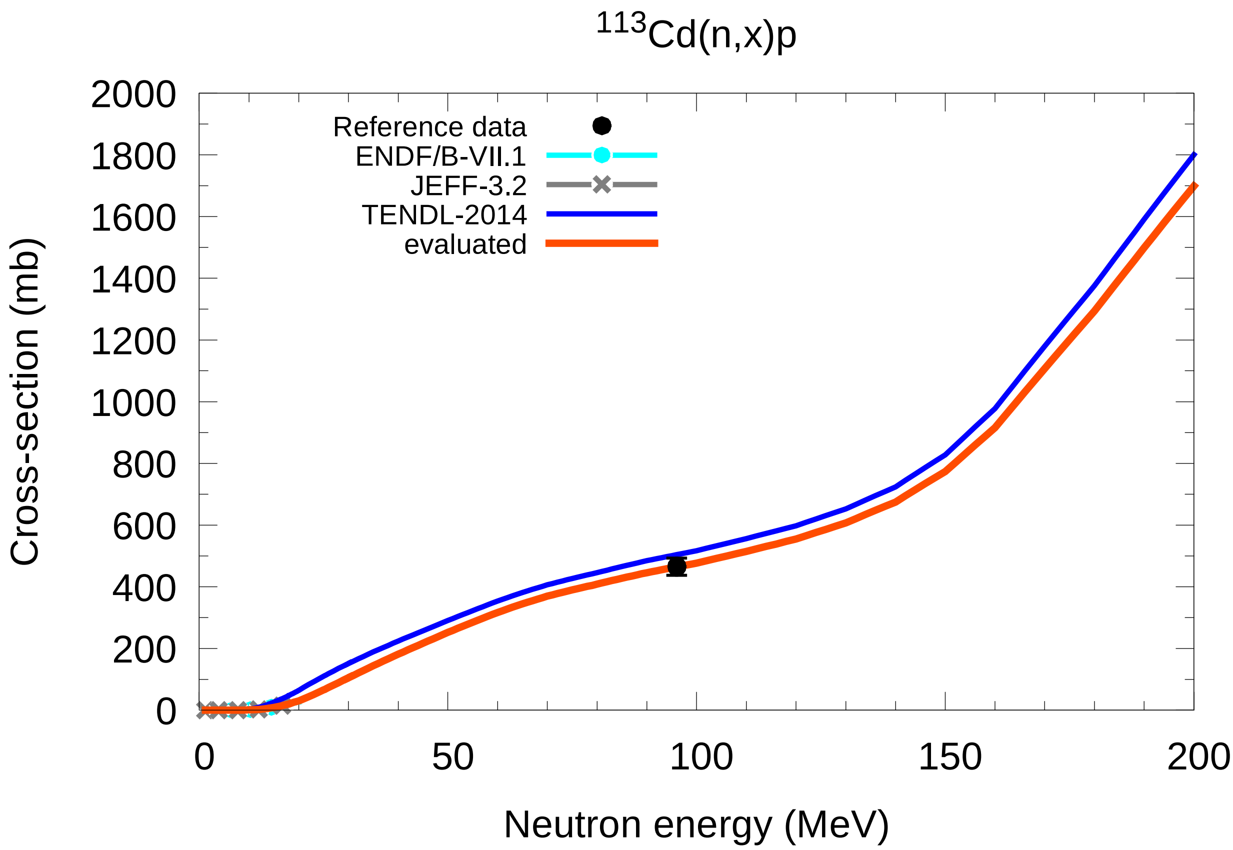

$^{113}Cd(n,x)p$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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400
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1200
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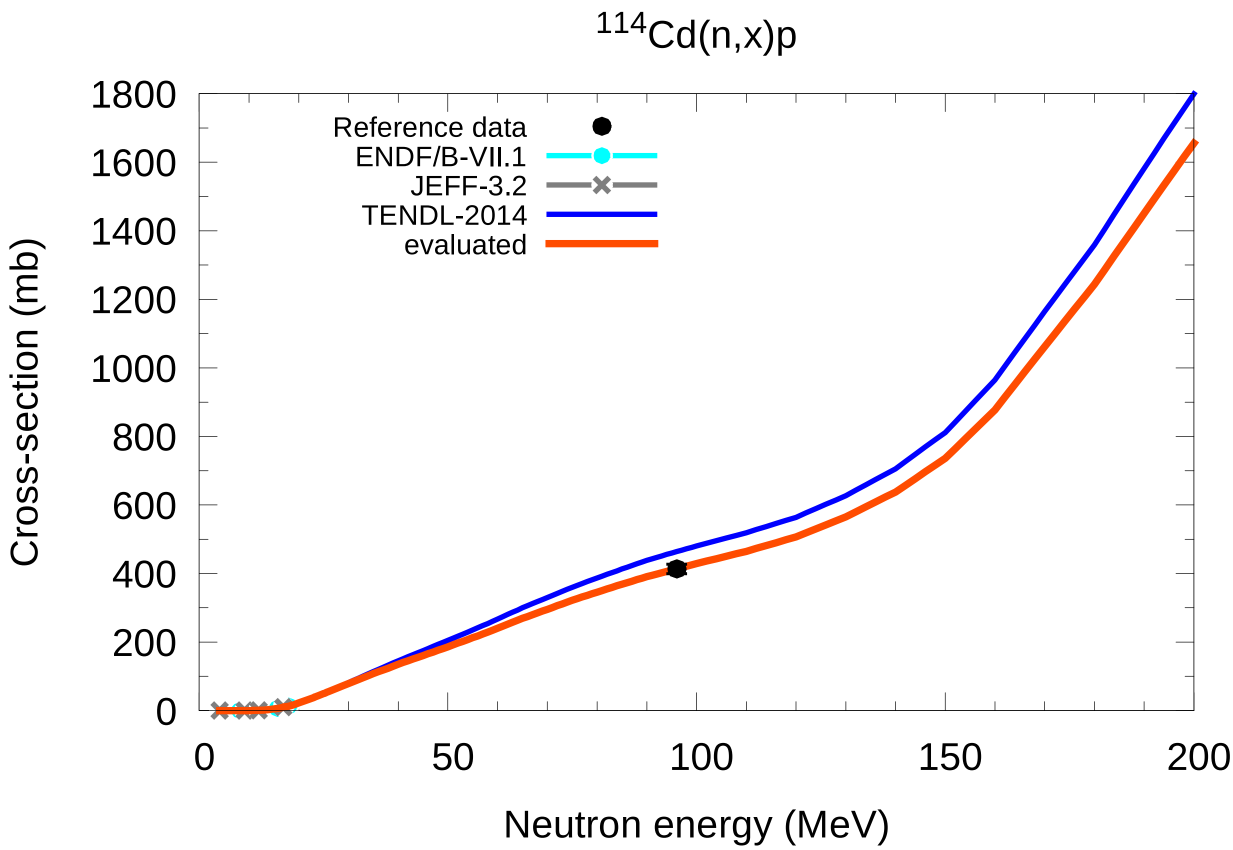

^{114}Cd(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
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1400
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150
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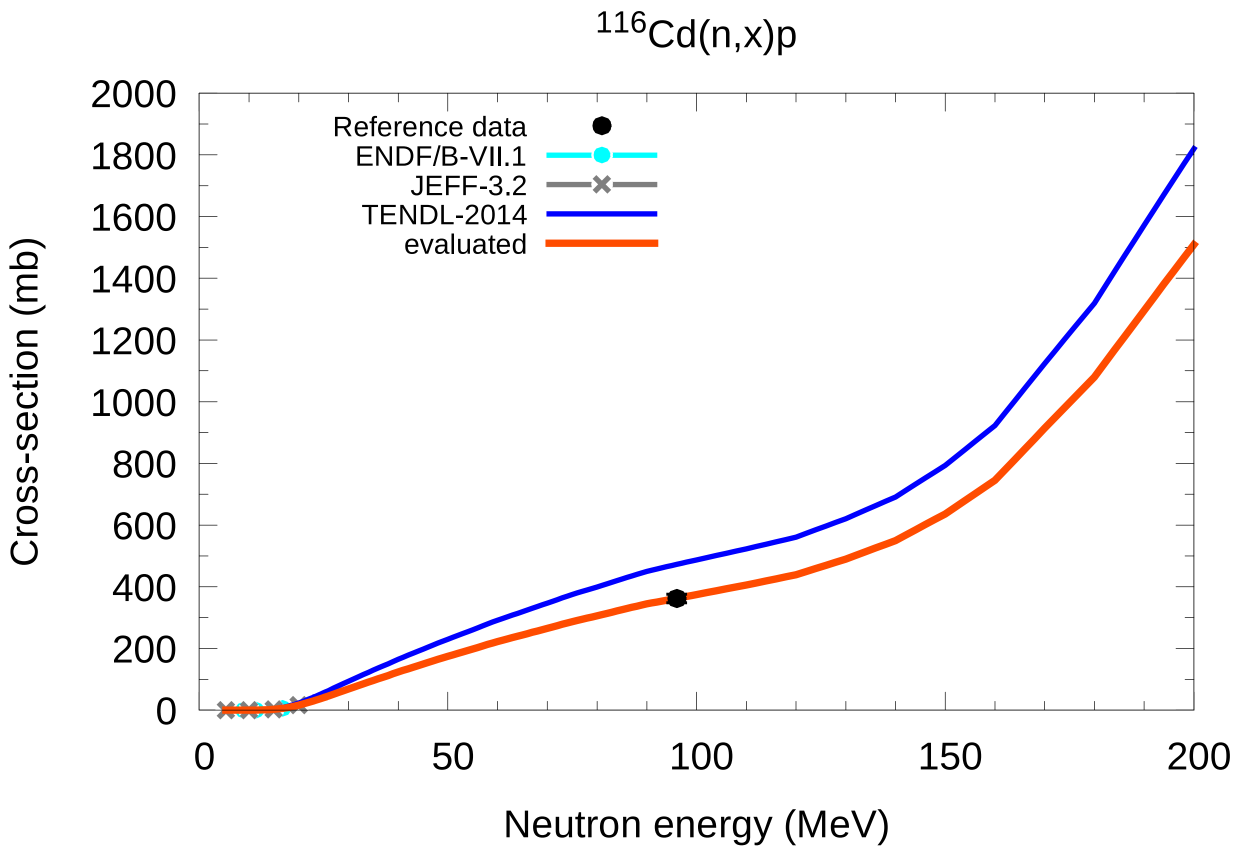

^{116}Cd(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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400
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800
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1200
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1600
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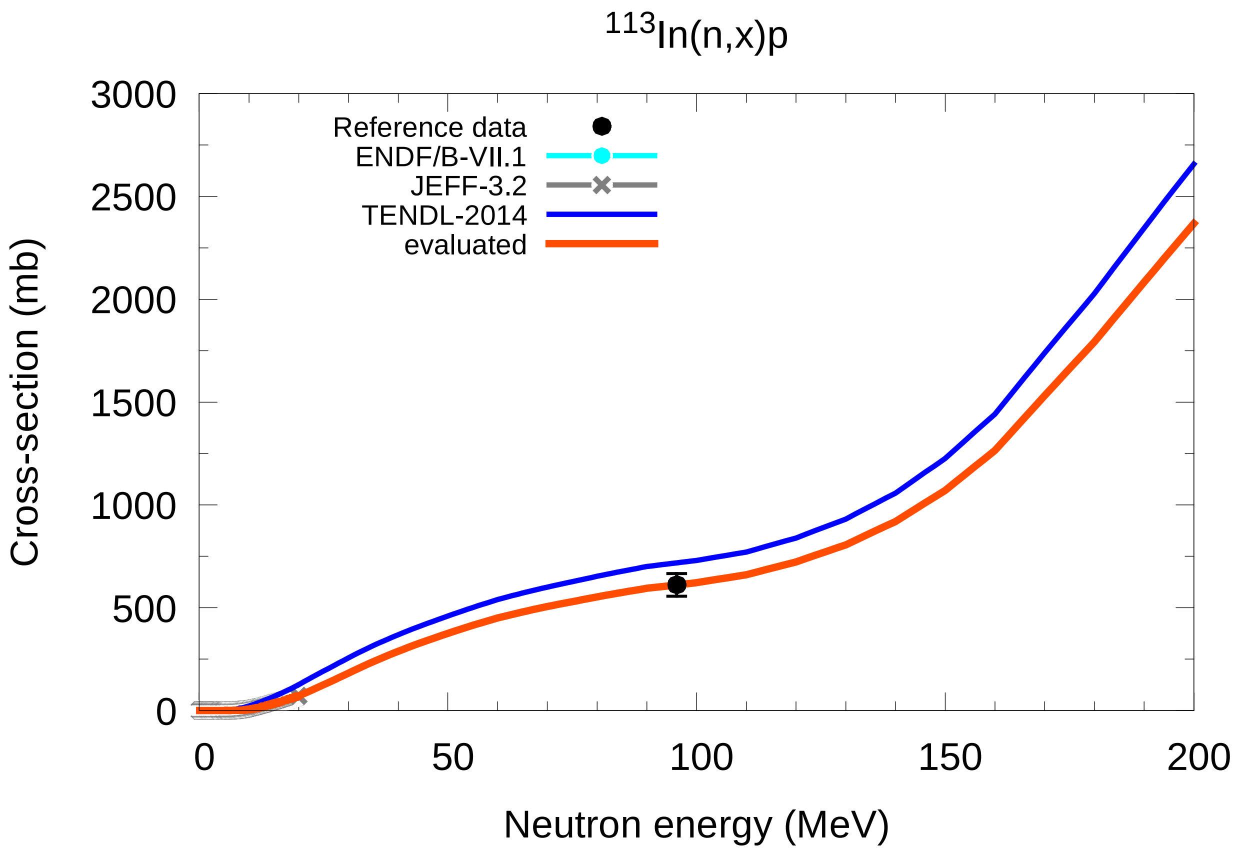

113In(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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2000
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150
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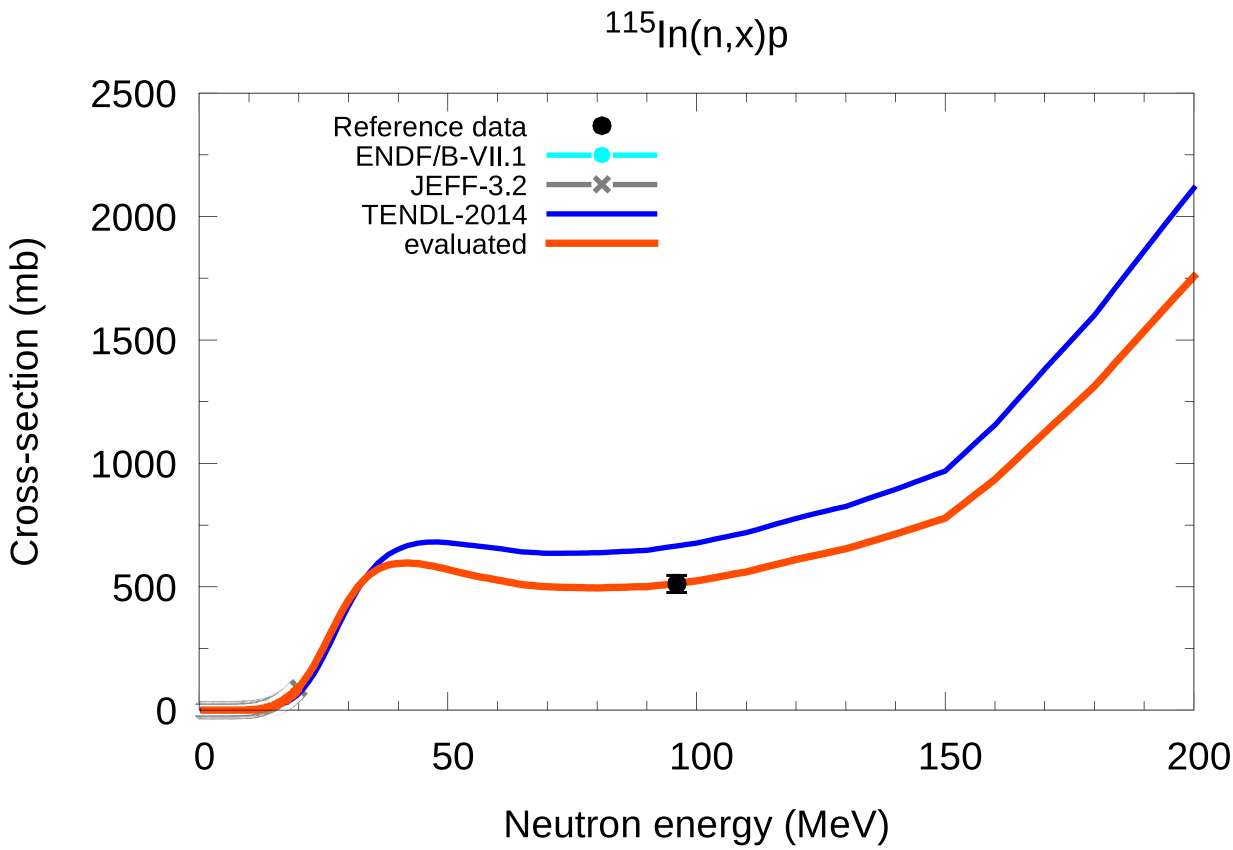

115In(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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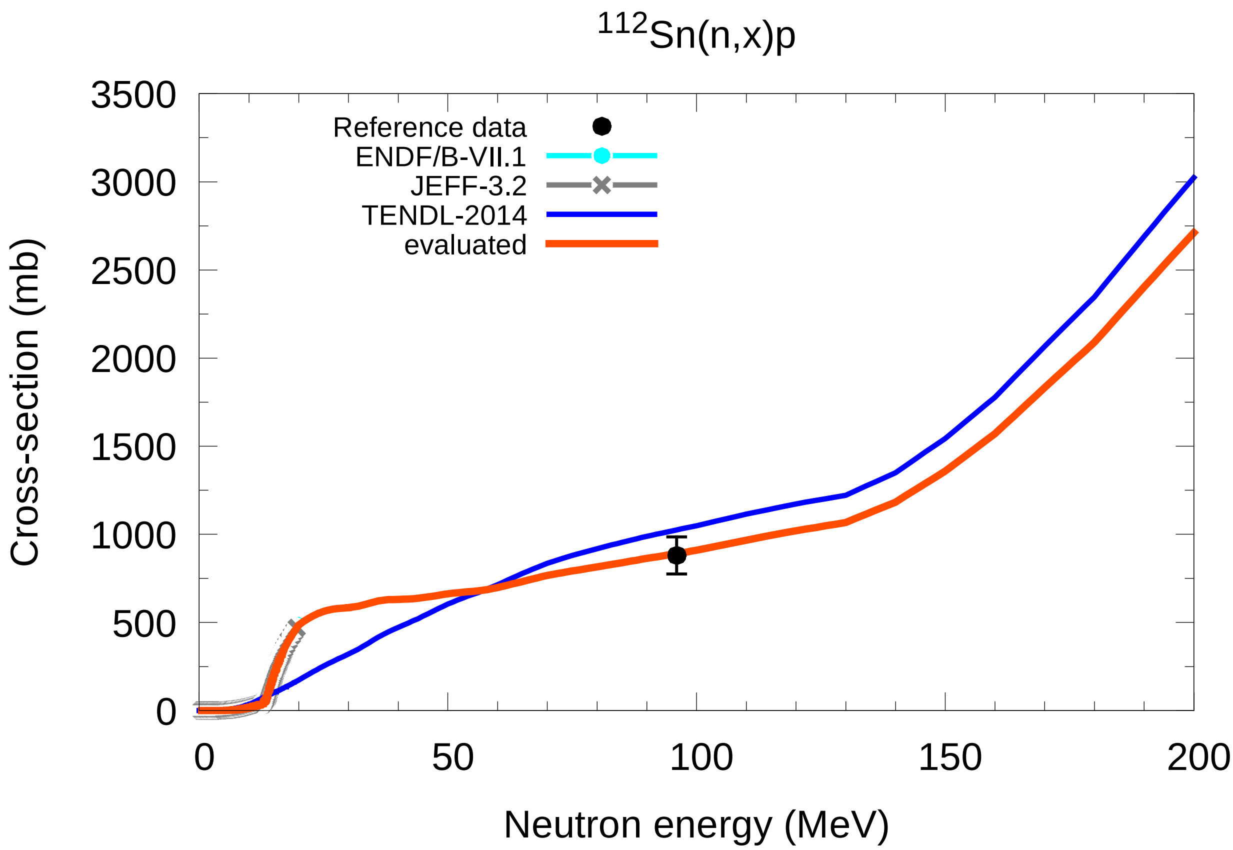
112Sn(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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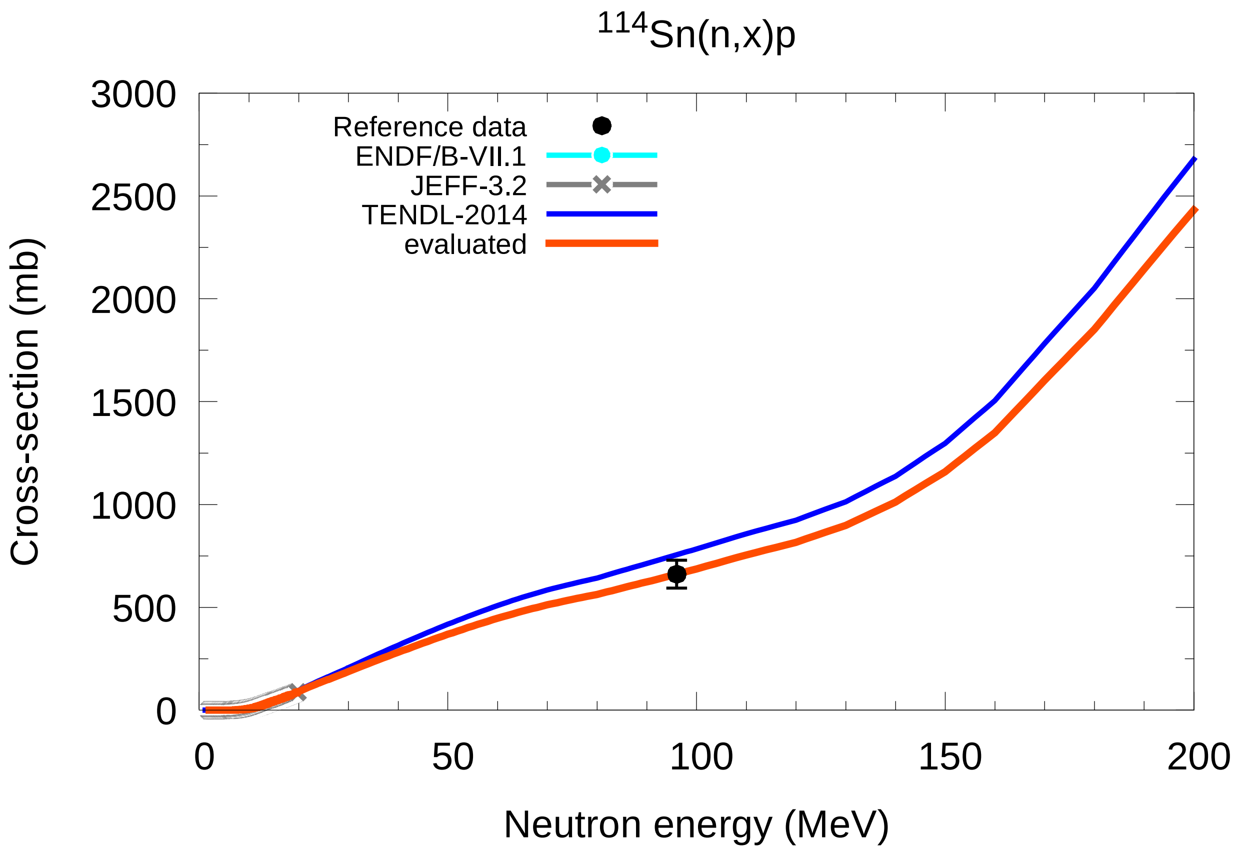
114Sn(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
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Neutron energy (MeV)
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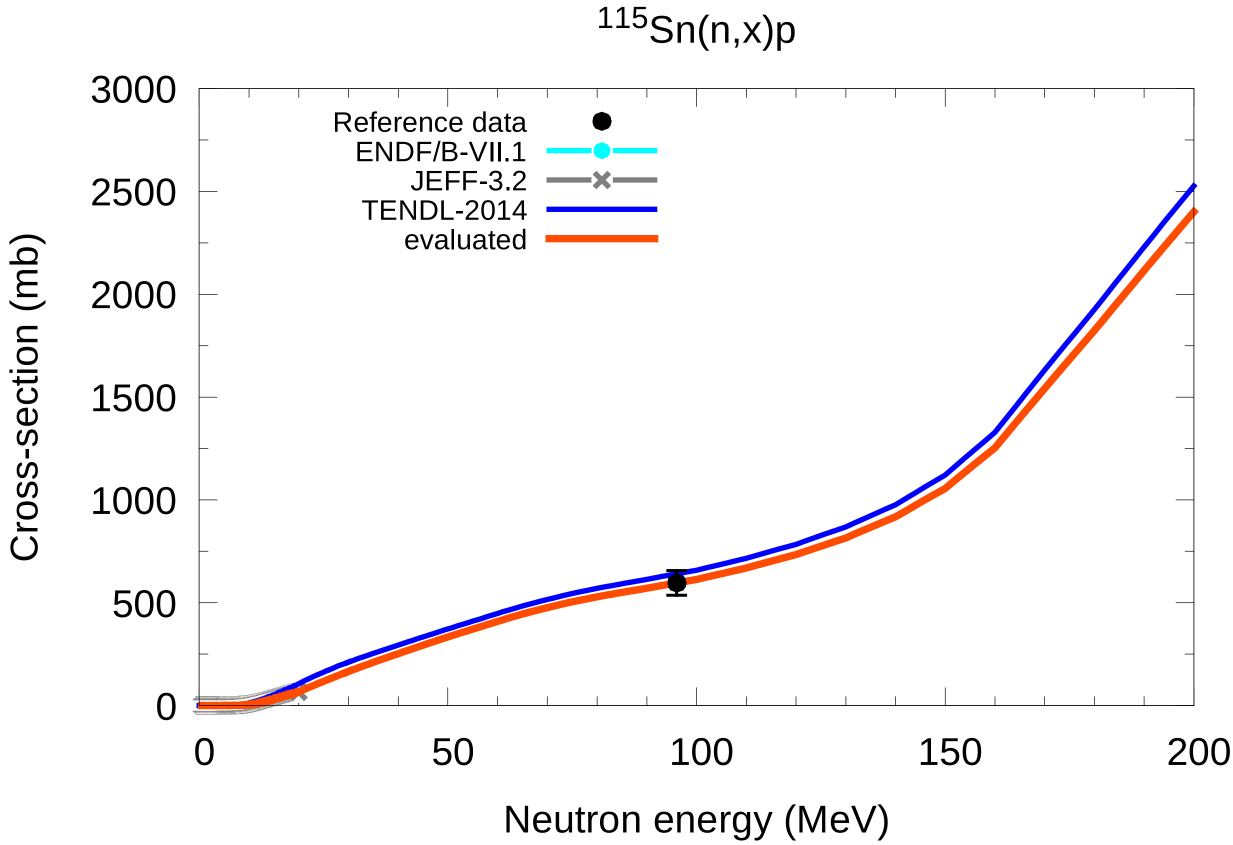

^{115}Sn(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
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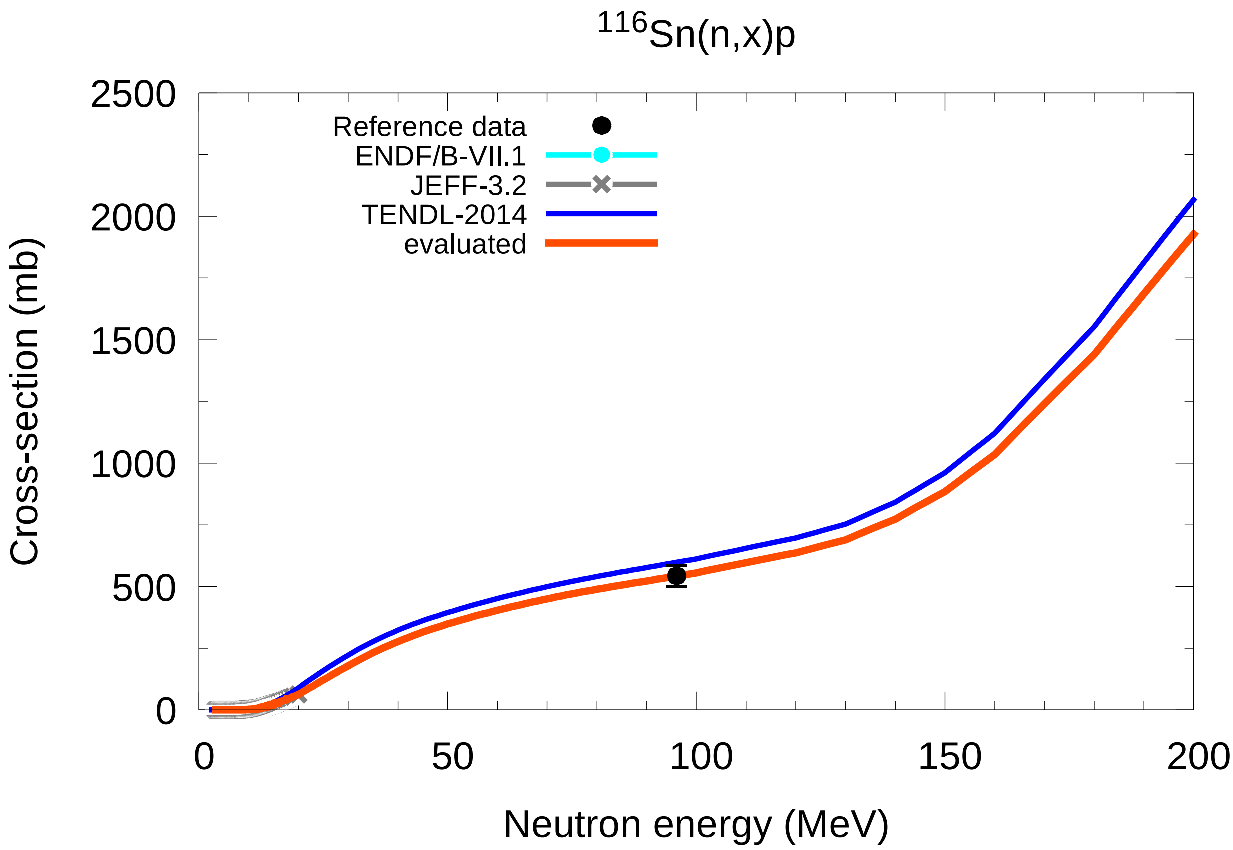

^{116}Sn(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
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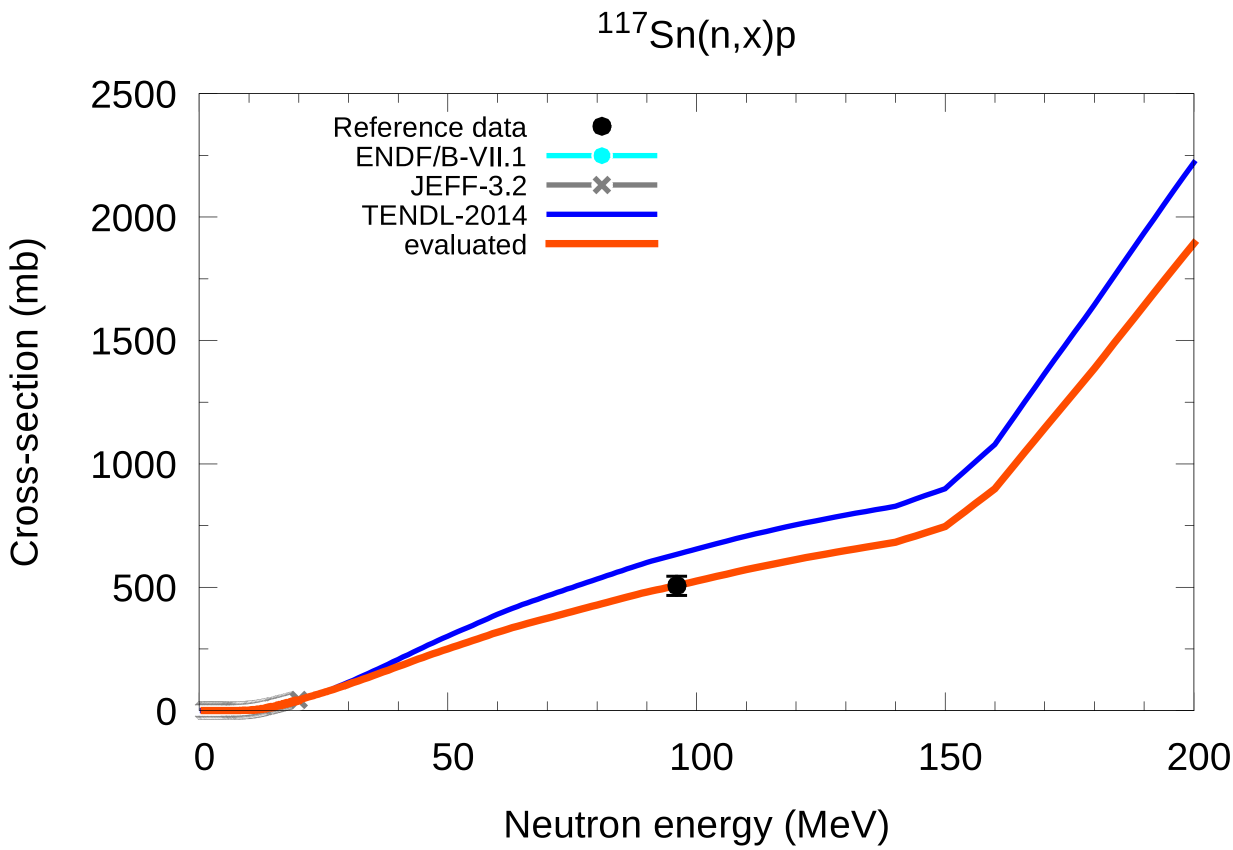
^{117}Sn(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
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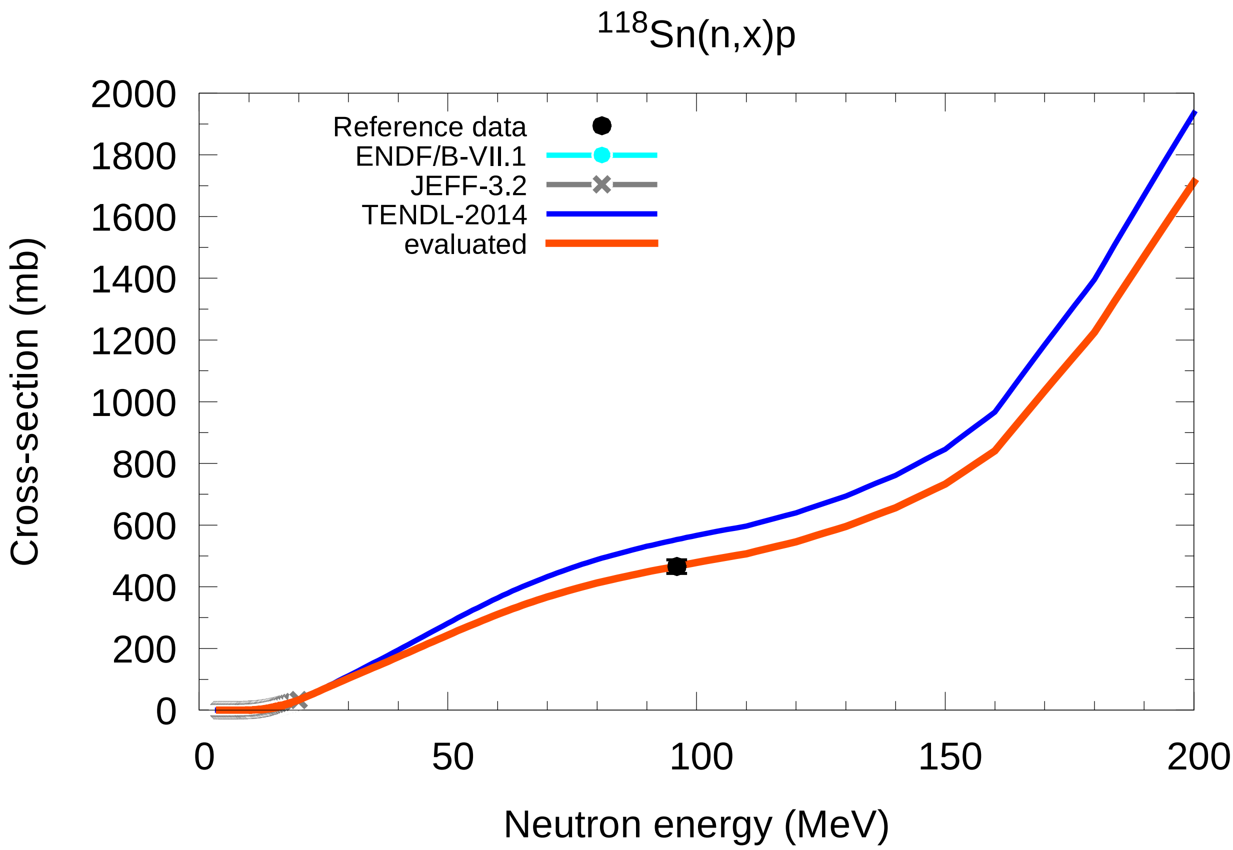
^{118}Sn(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
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400
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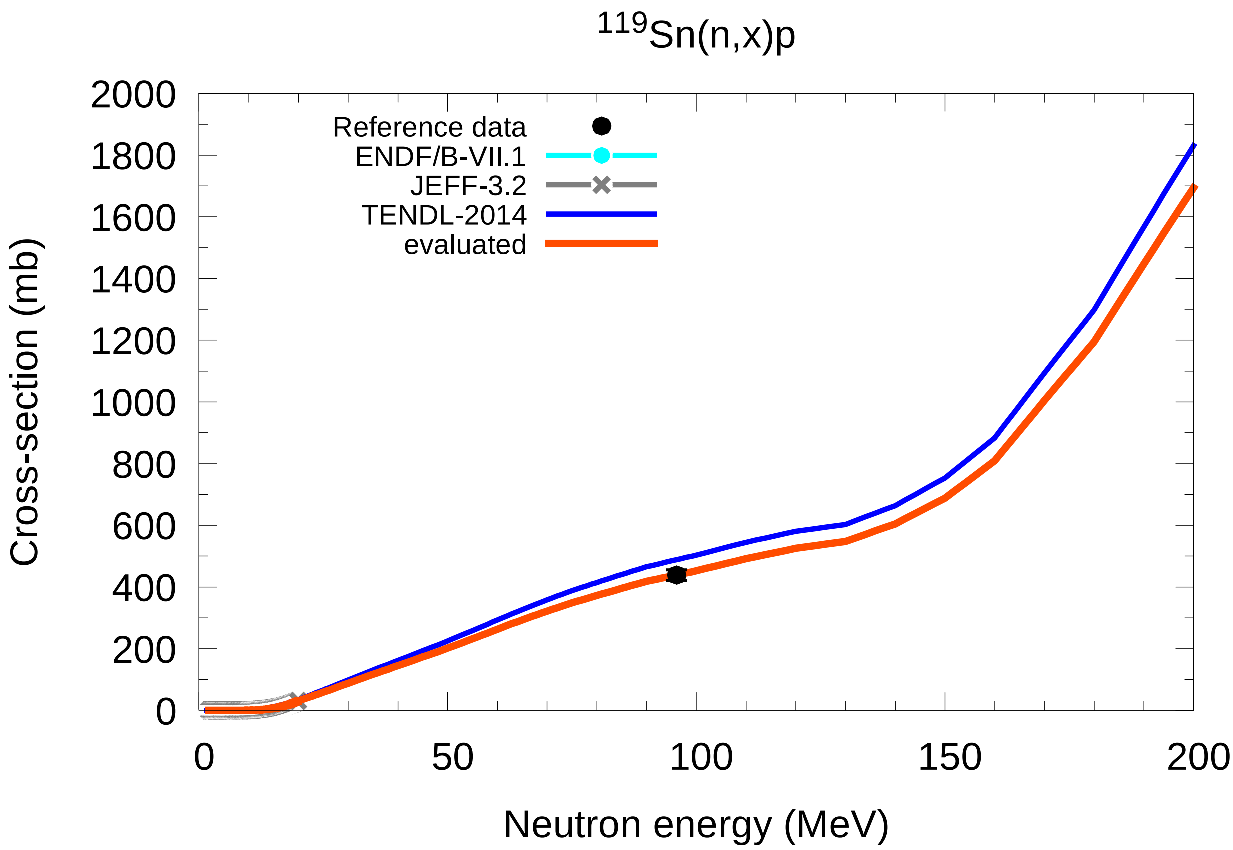

^{119}Sn(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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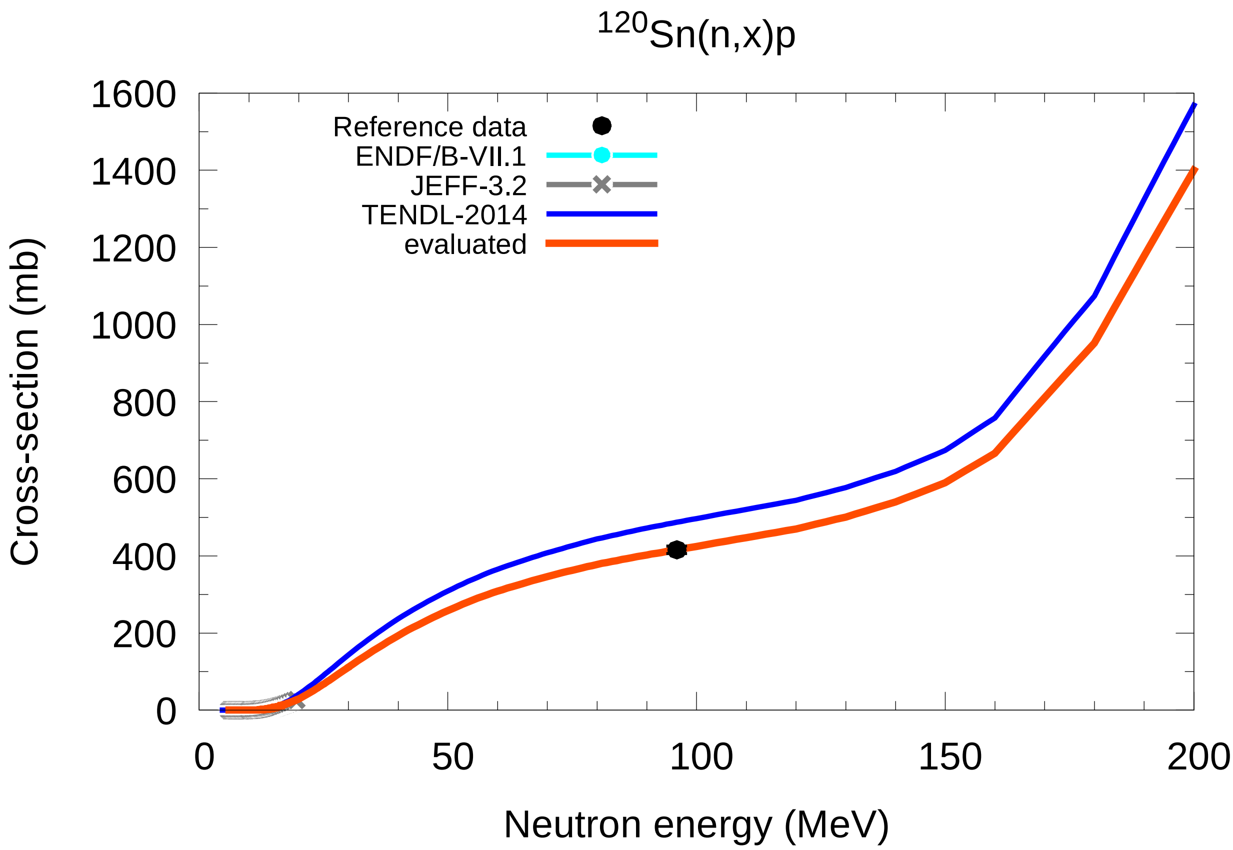

^{120}Sn(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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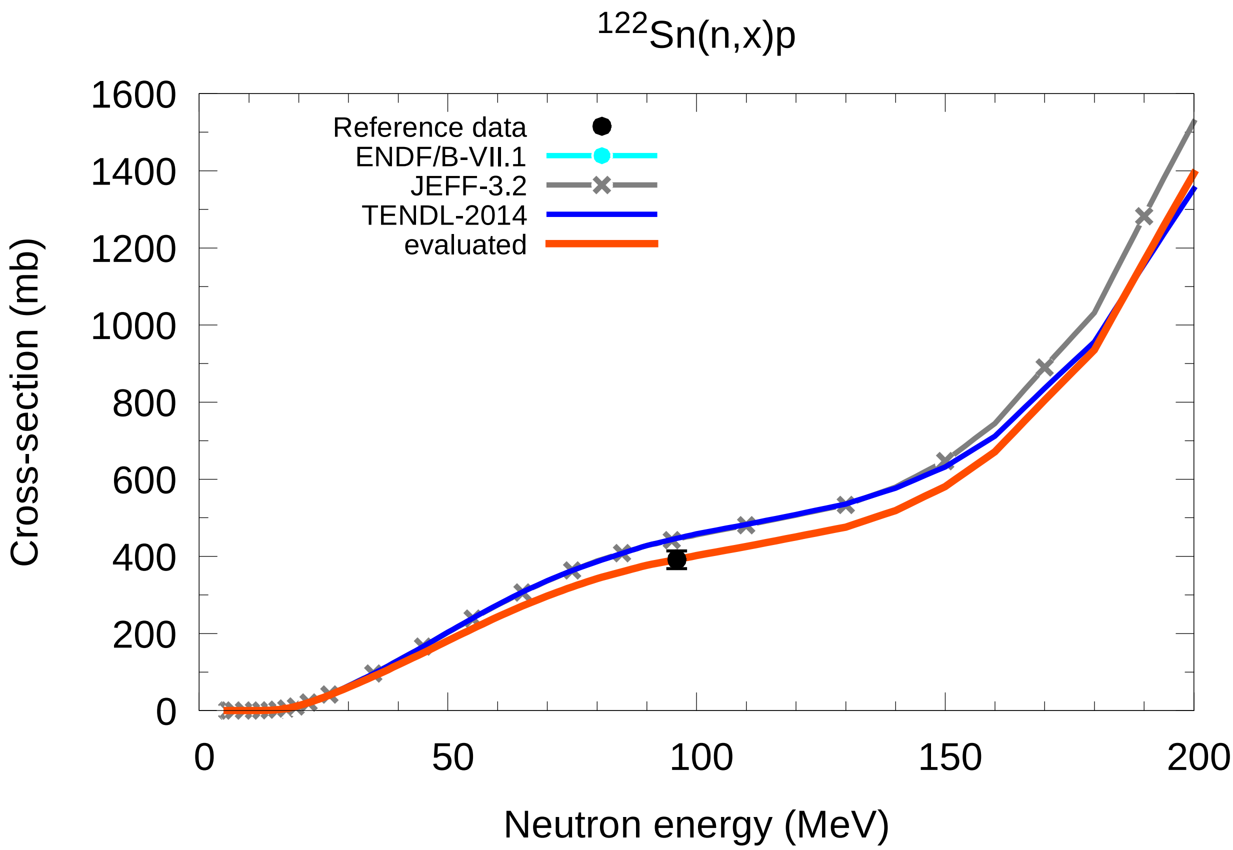
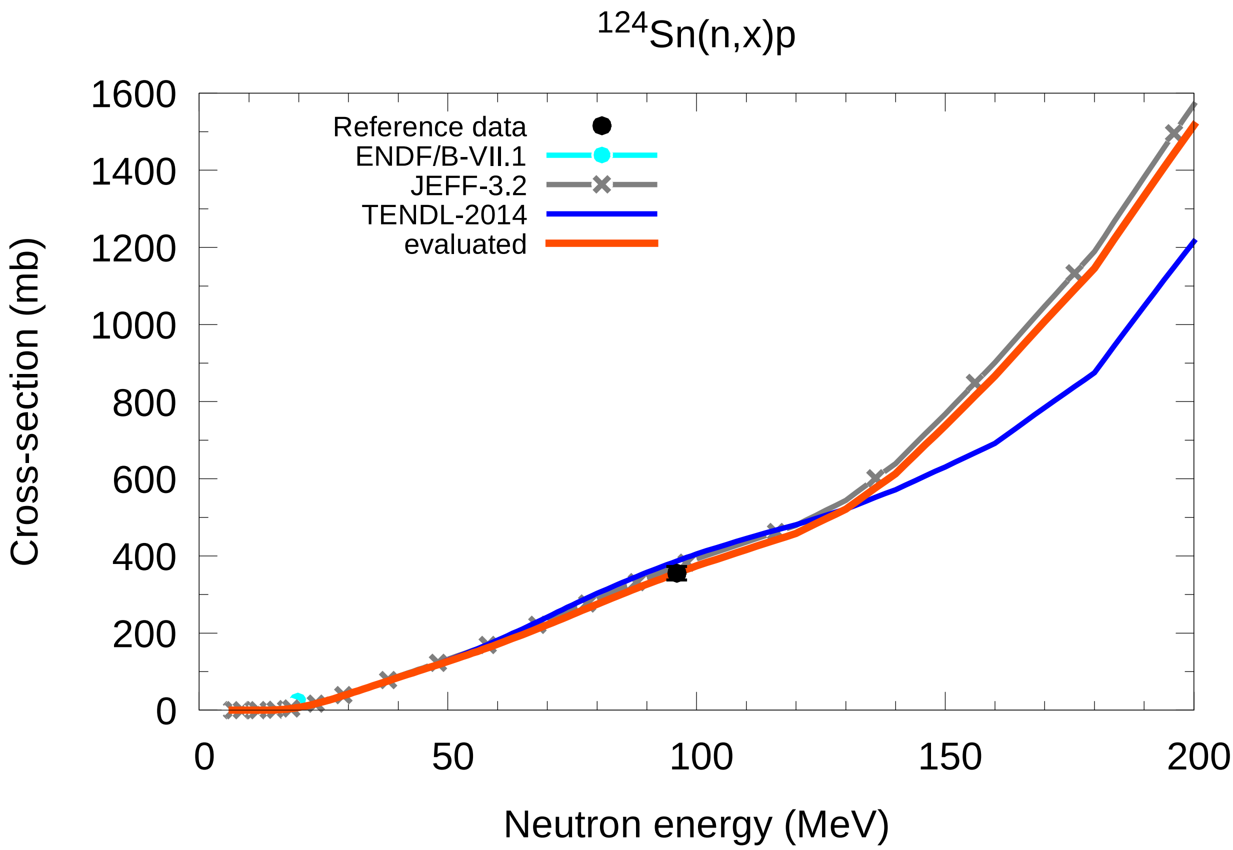
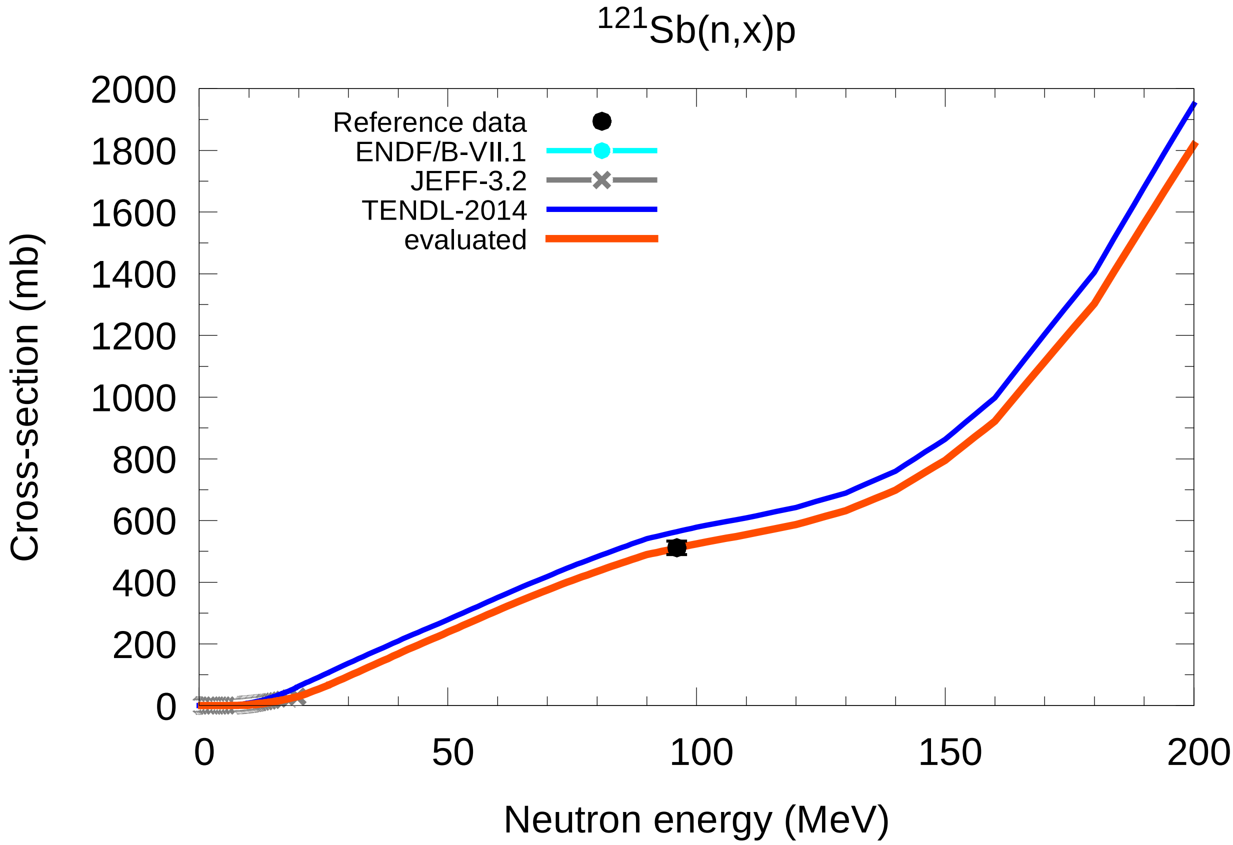


$^{122}Sn(n,x)p$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



$^{124}Sn(n,x)p$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



121Sb(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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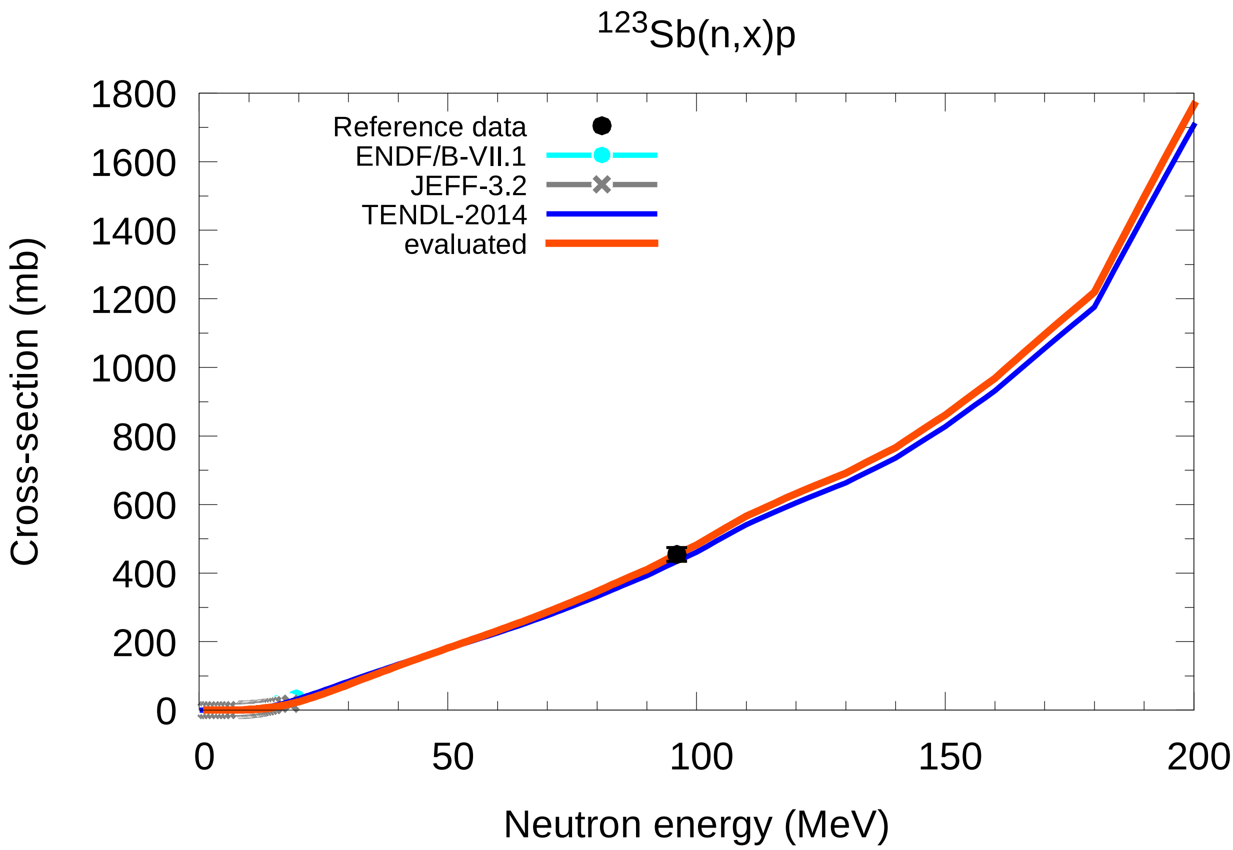

123Sb(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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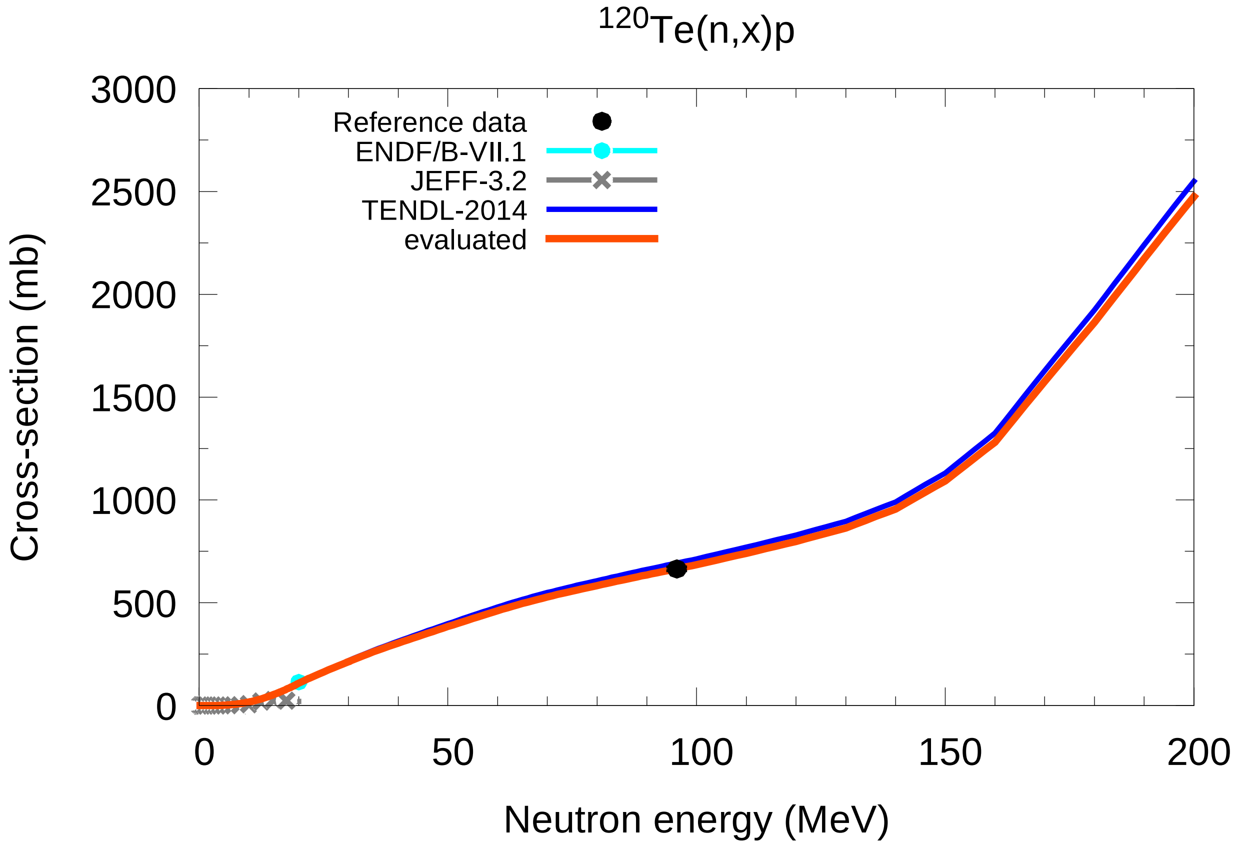

^{120}Te(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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1000
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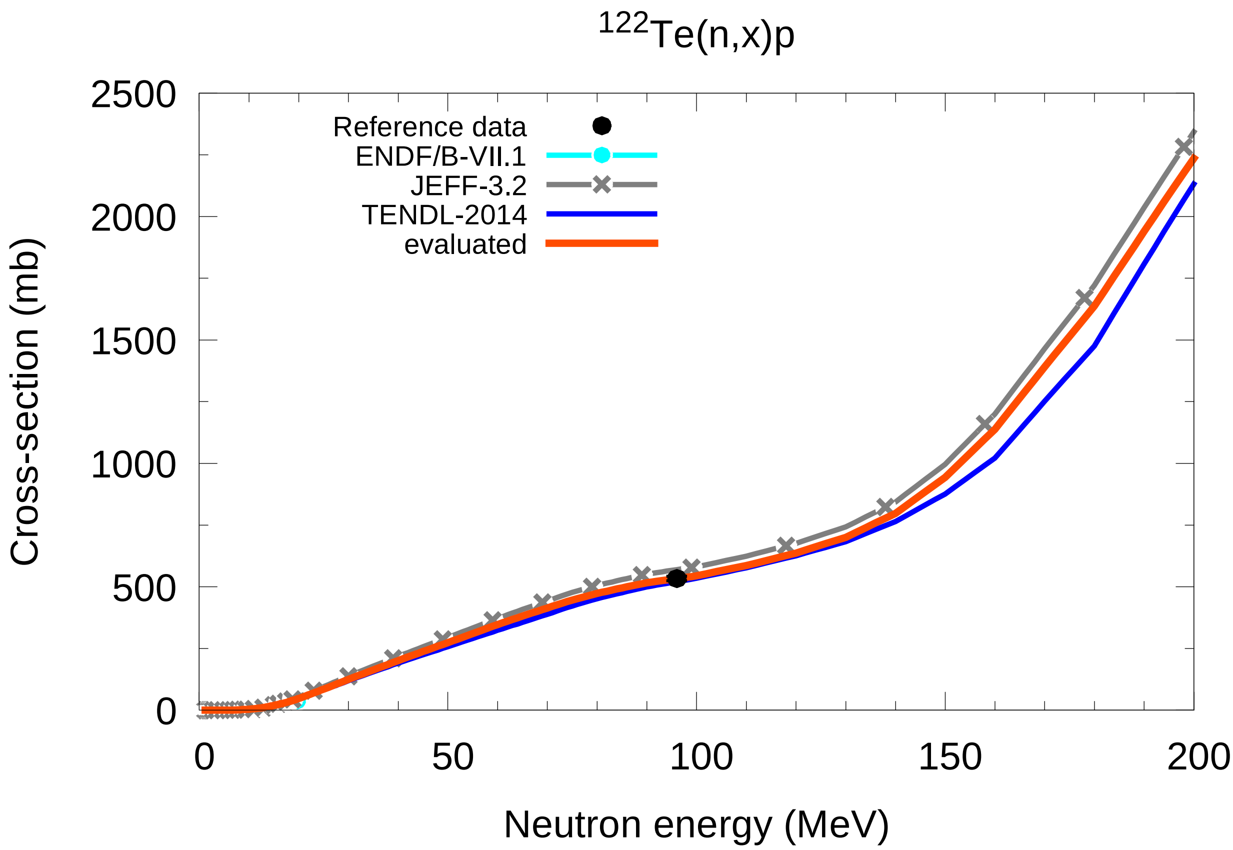
200



^{122}Te(n,x)p
Reference data
ENDF/B-VII.1
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TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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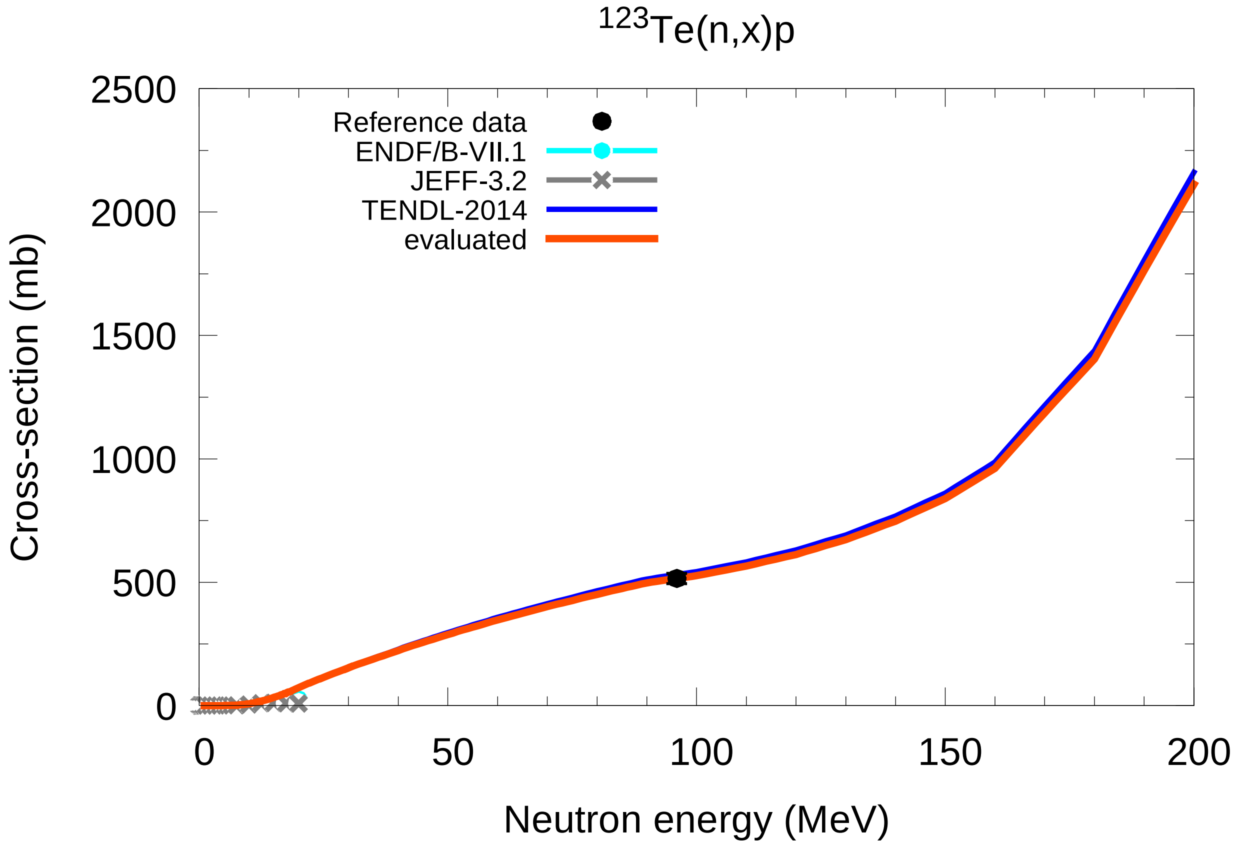

^{123}Te(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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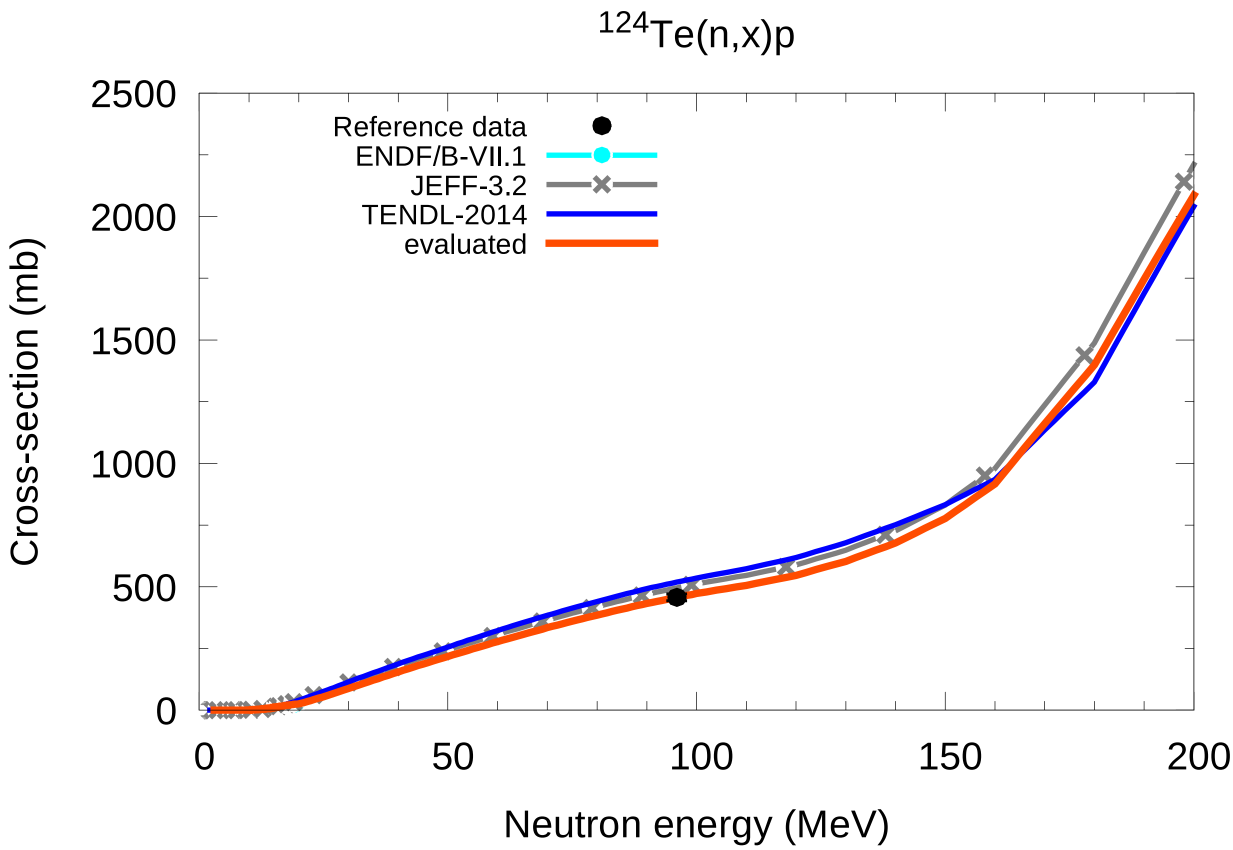
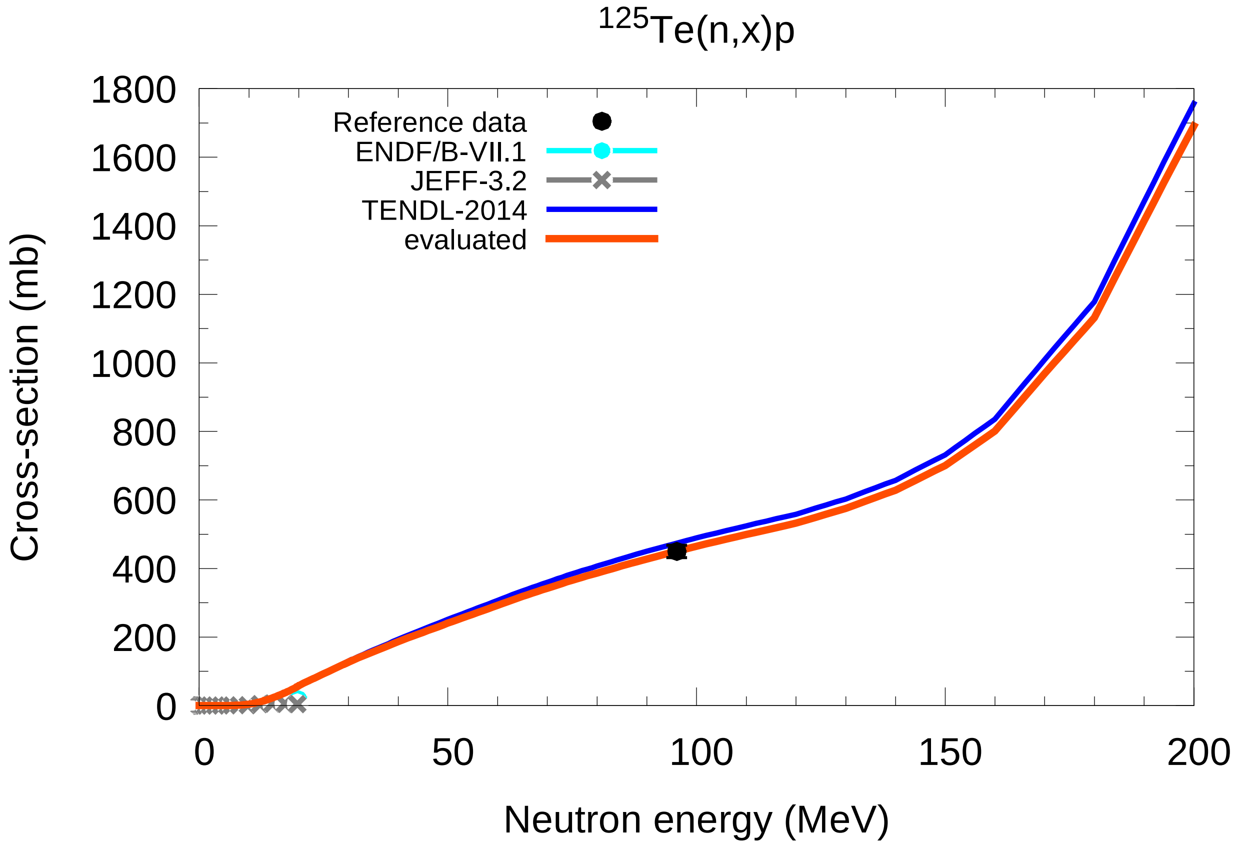
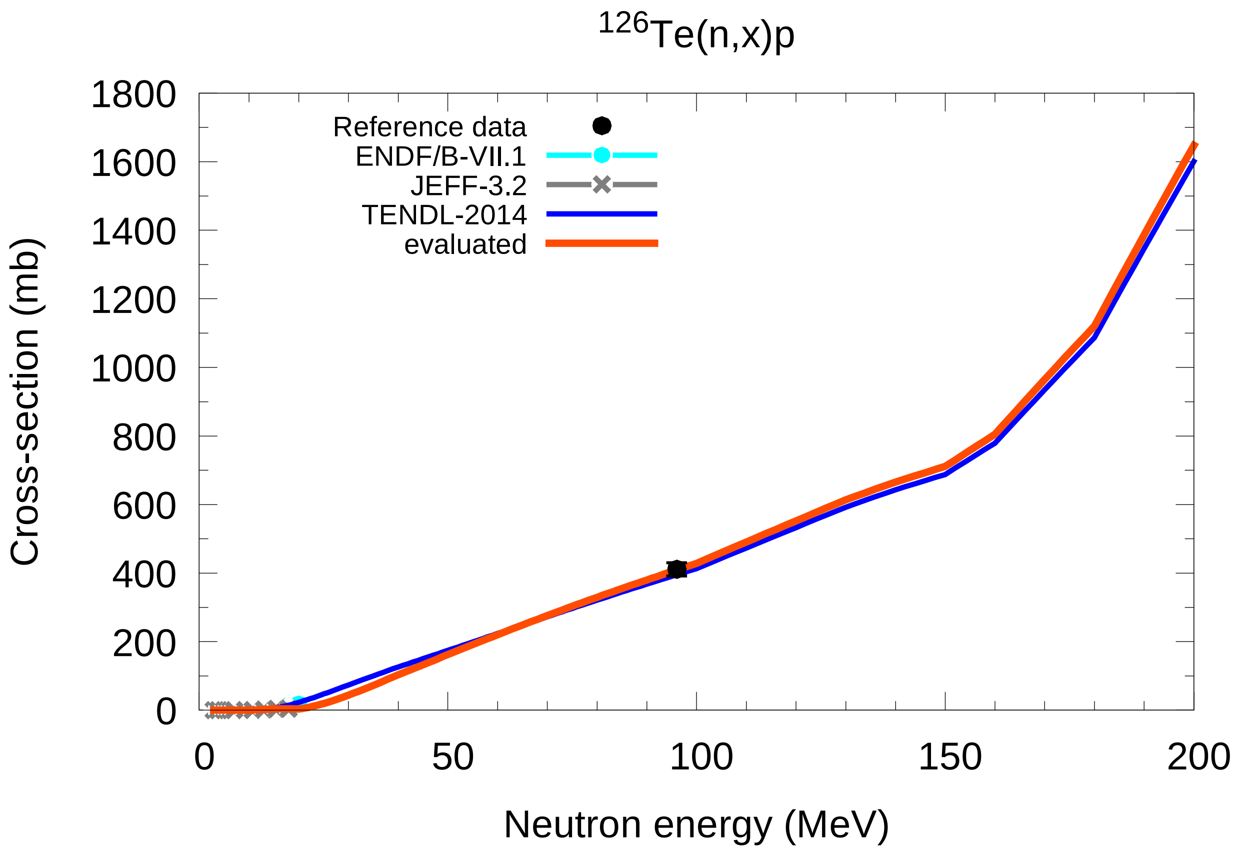
150
200



^{124}Te(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



^{125}Te(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
0
50
100
150
200



^{126}Te(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
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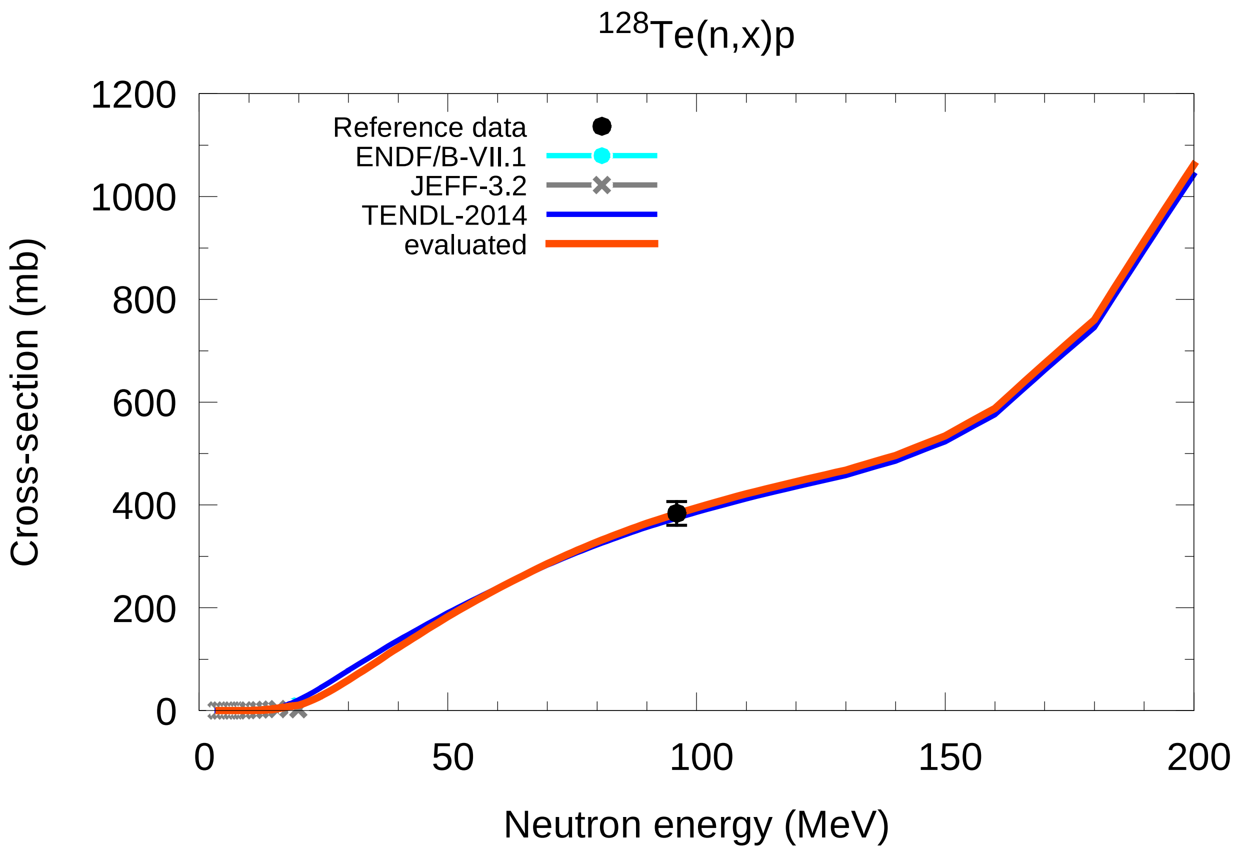
150
200



^{128}Te(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
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800
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1200
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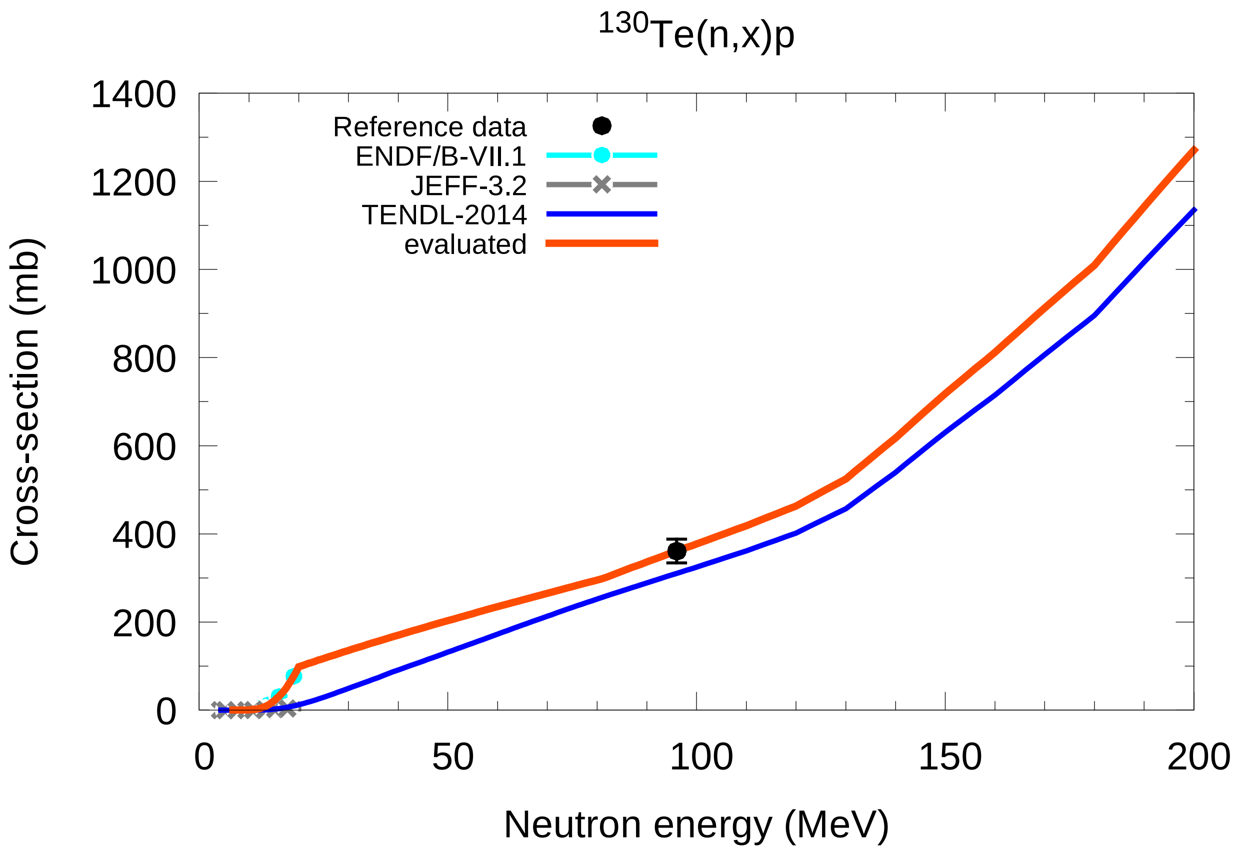
200



^{130}Te(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
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1000
1200
1400
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150
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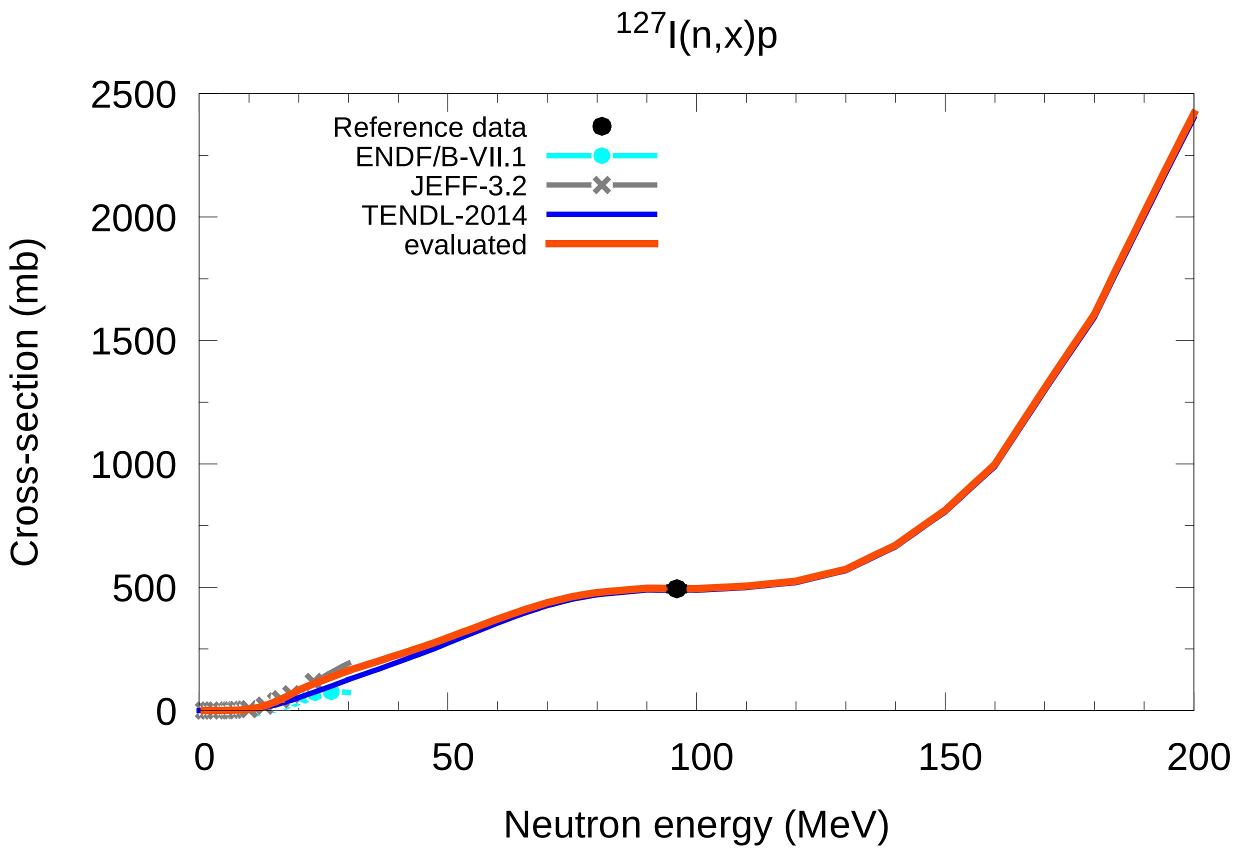

^{127}I(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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150
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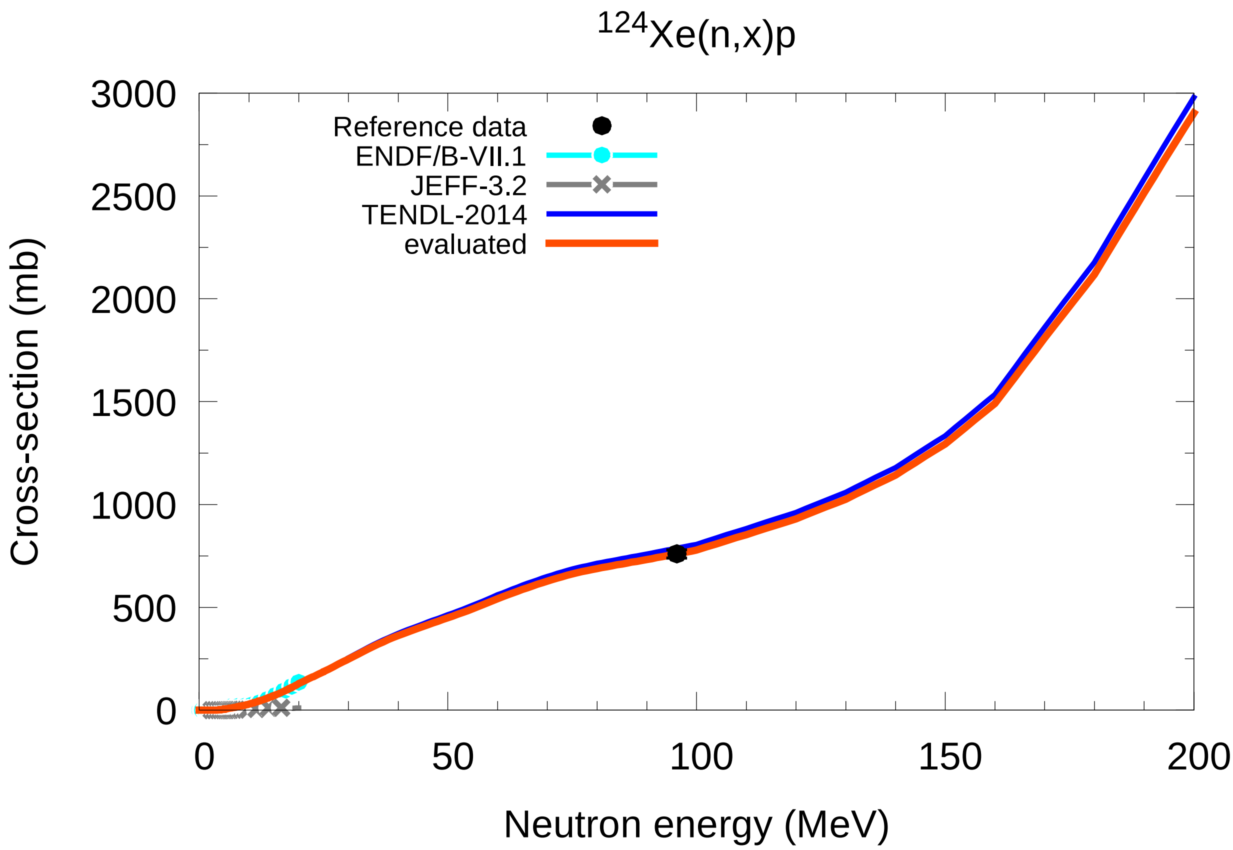
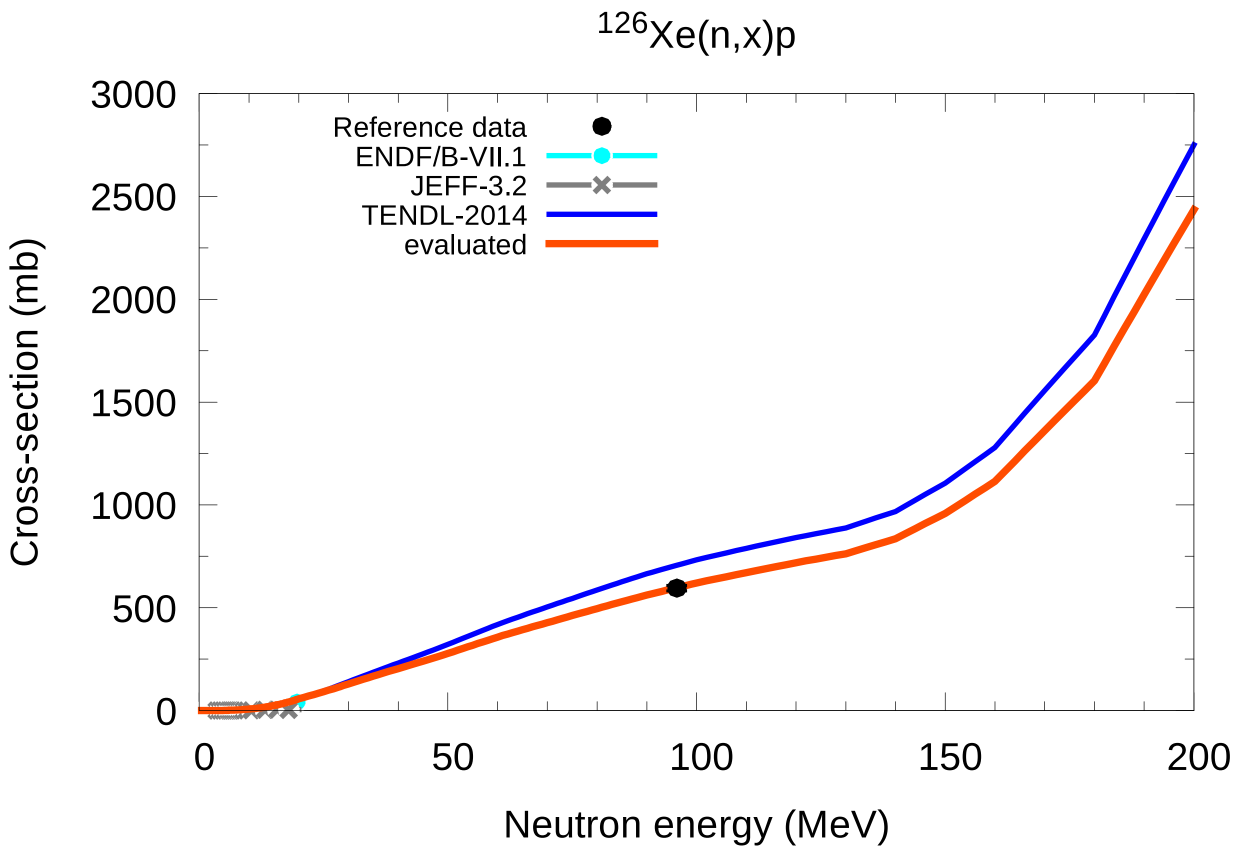
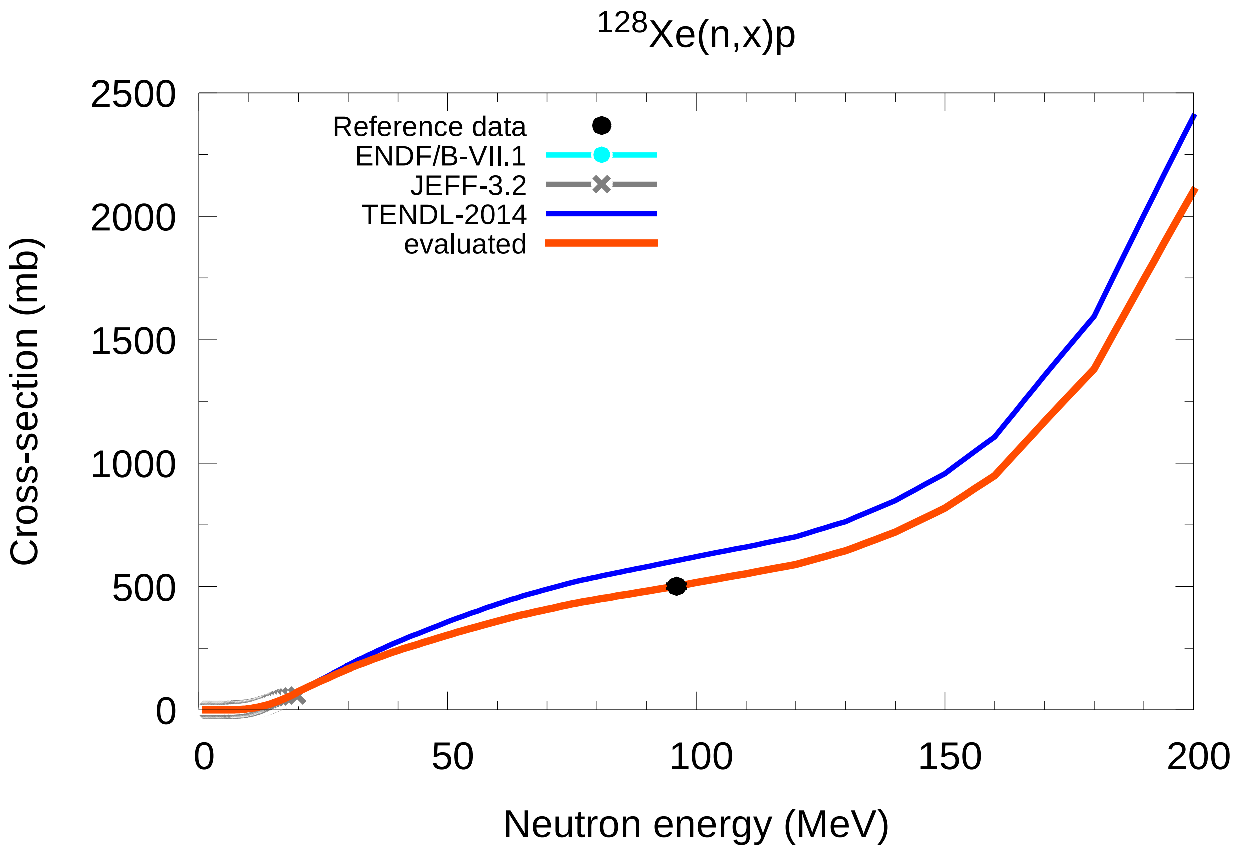


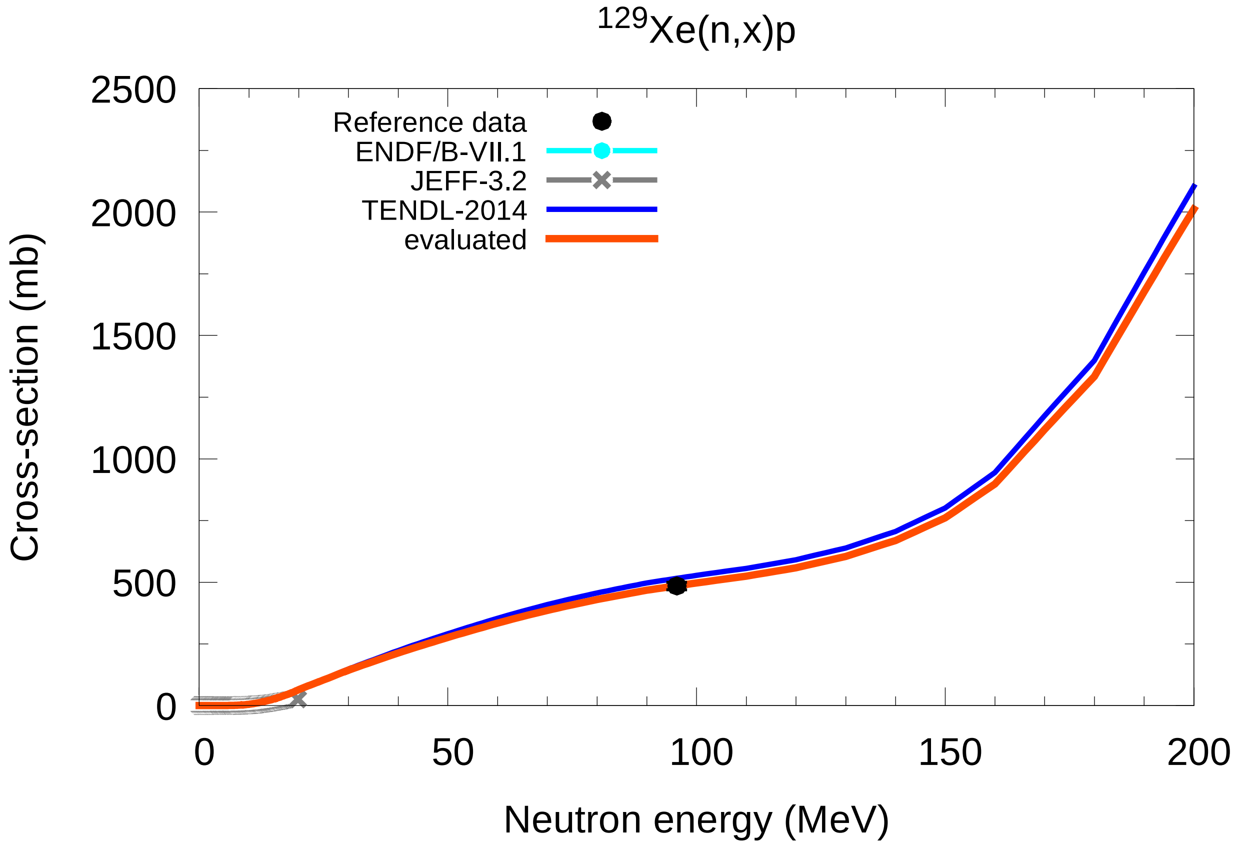
^{124}Xe(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
0
50
100
150
200



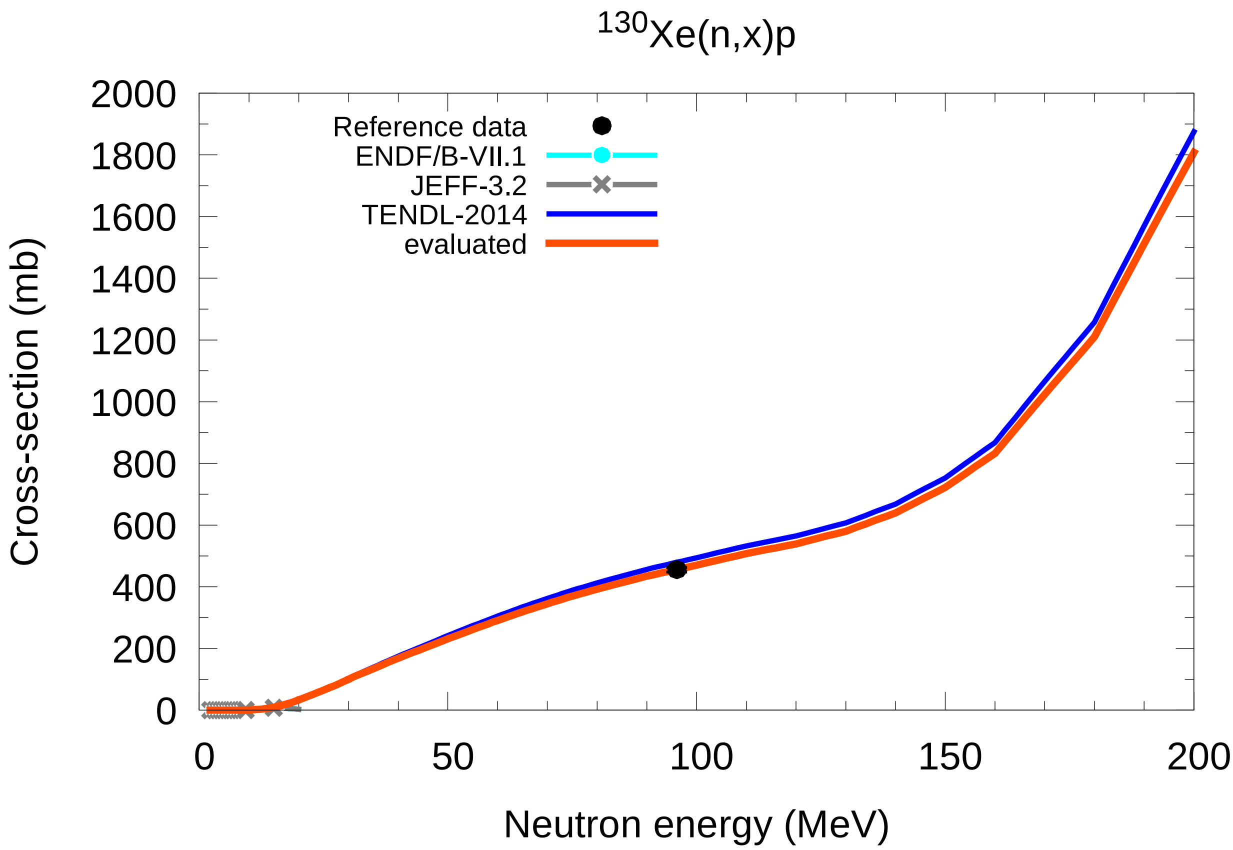
126Xe(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
3000
2500
2000
1500
1000
500
0
0
50
100
150
200
Neutron energy (MeV)



128Xe(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
2500
2000
1500
1000
500
0
0
50
100
150
200
Neutron energy (MeV)



^{129}Xe(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



^{130}Xe(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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400
600
800
1000
1200
1400
1600
1800
2000
0
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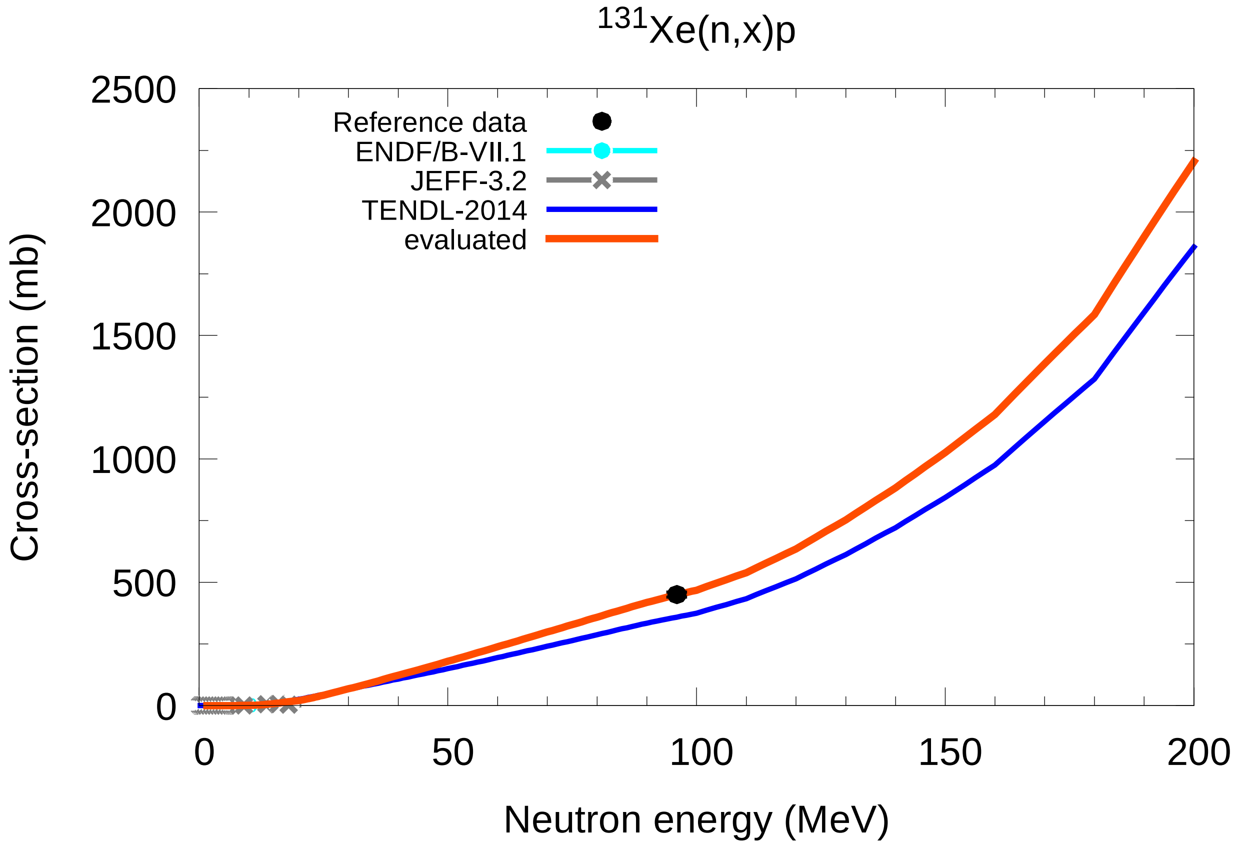
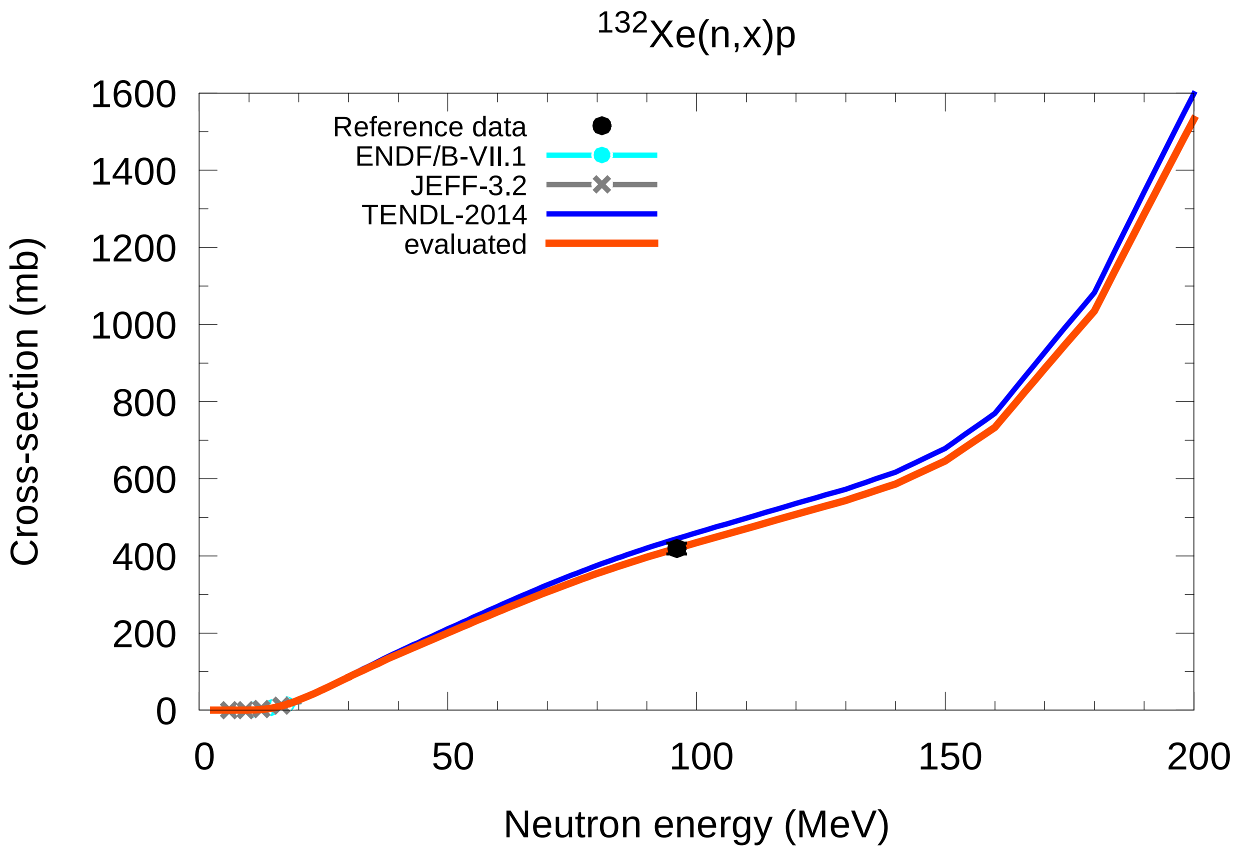
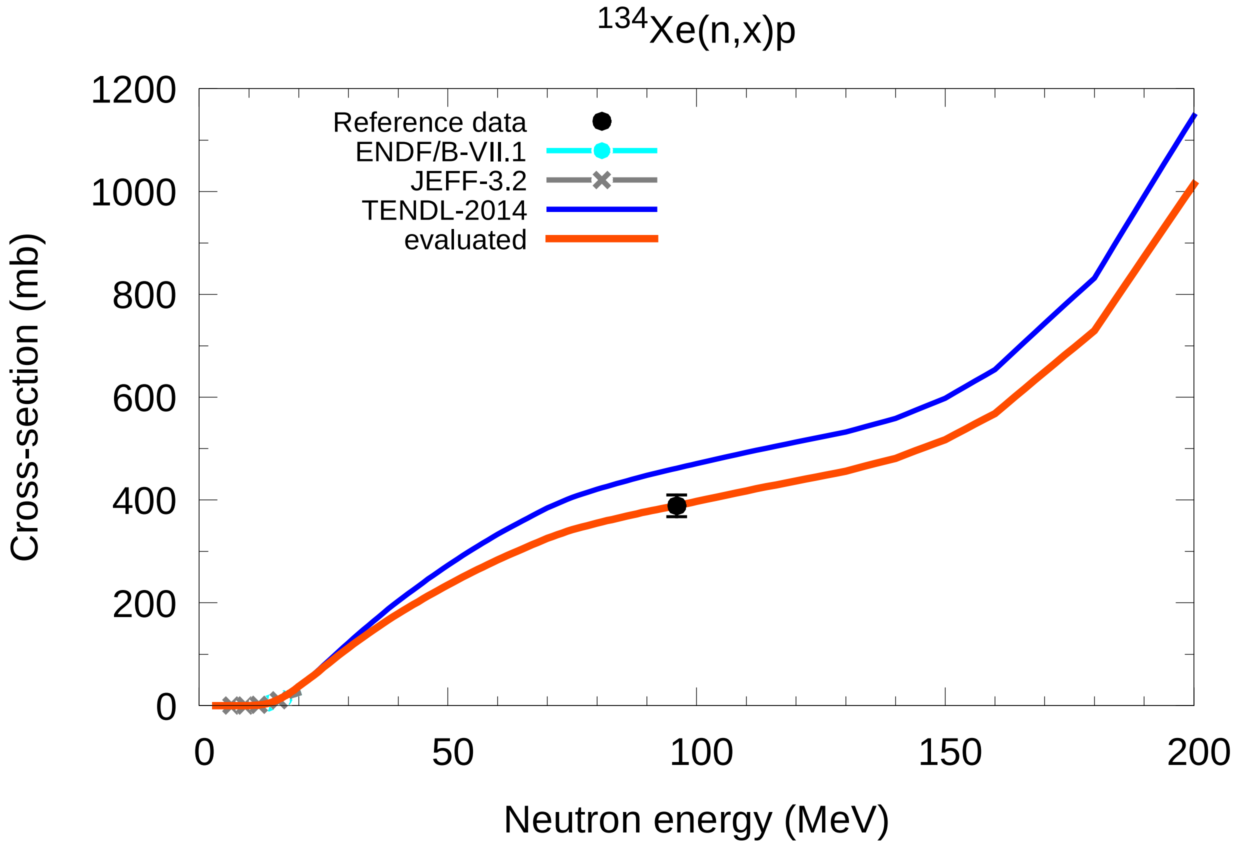
100
150
200



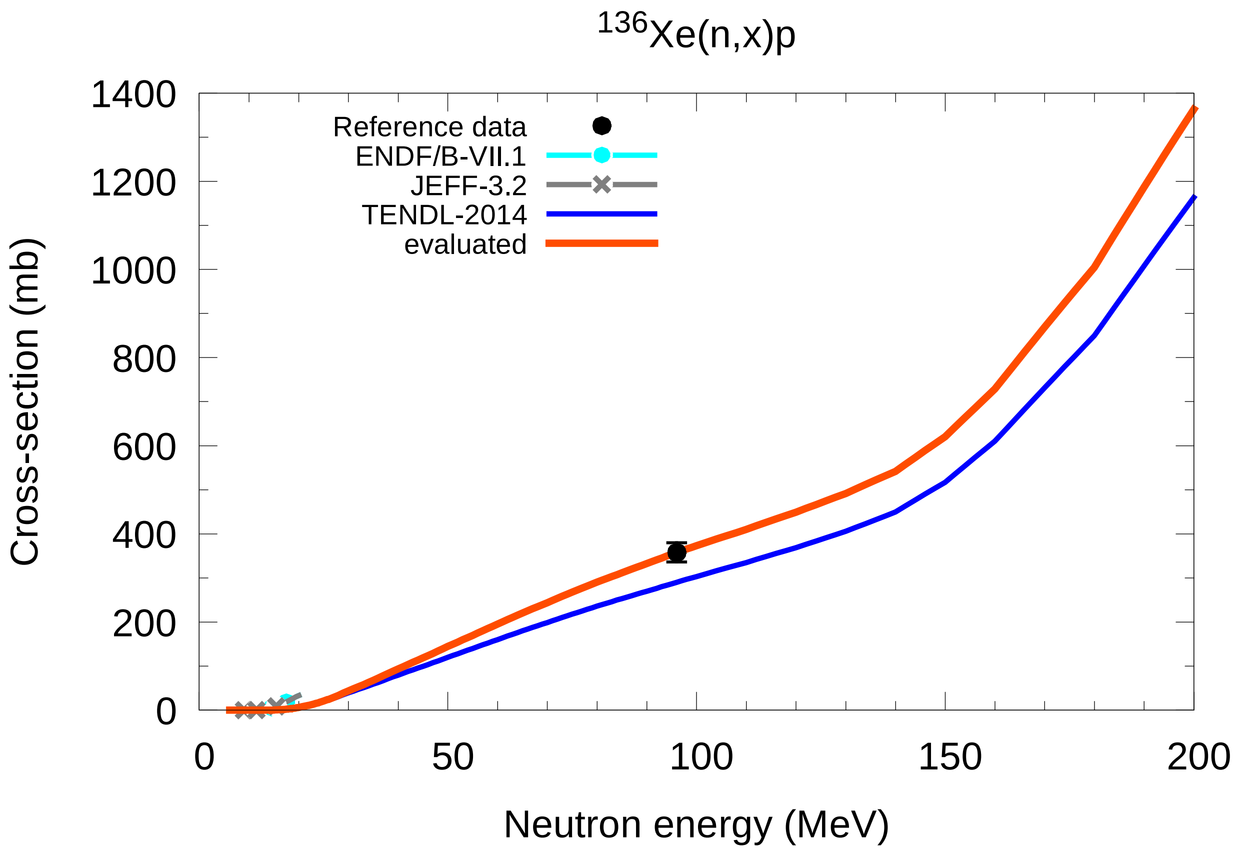
^{131}Xe(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



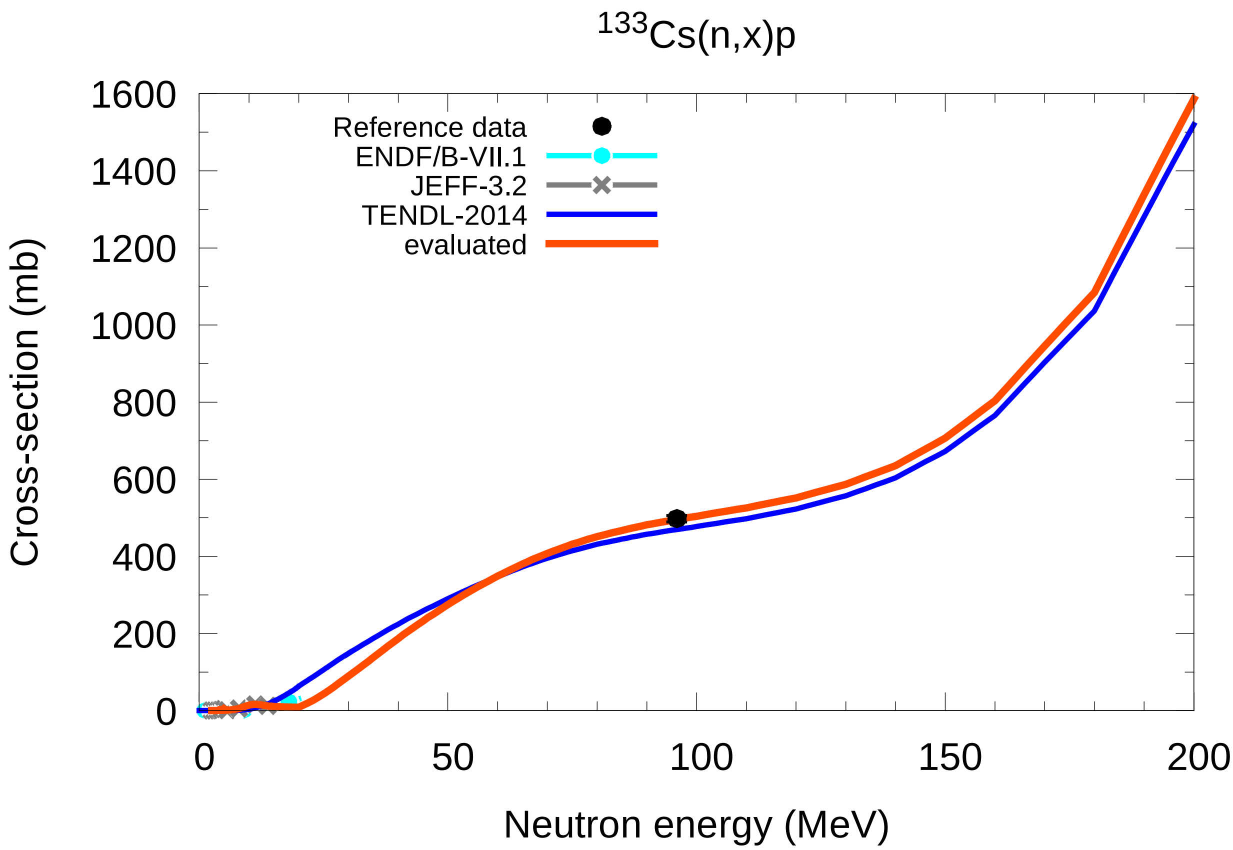
^{132}Xe(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
0
50
100
150
200



^{134}Xe(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
0
50
100
150
200



^{136}Xe(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
0
50
100
150
200



^{133}Cs(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
0
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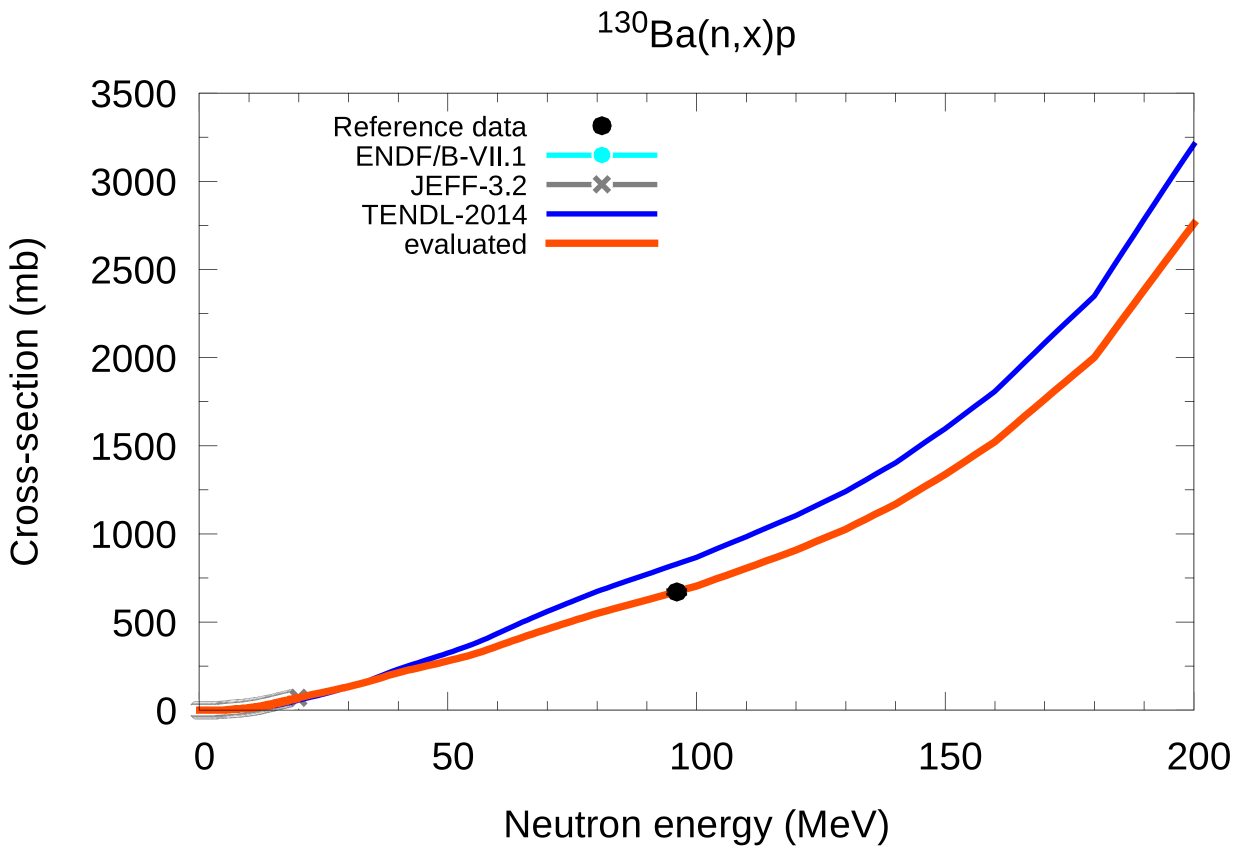
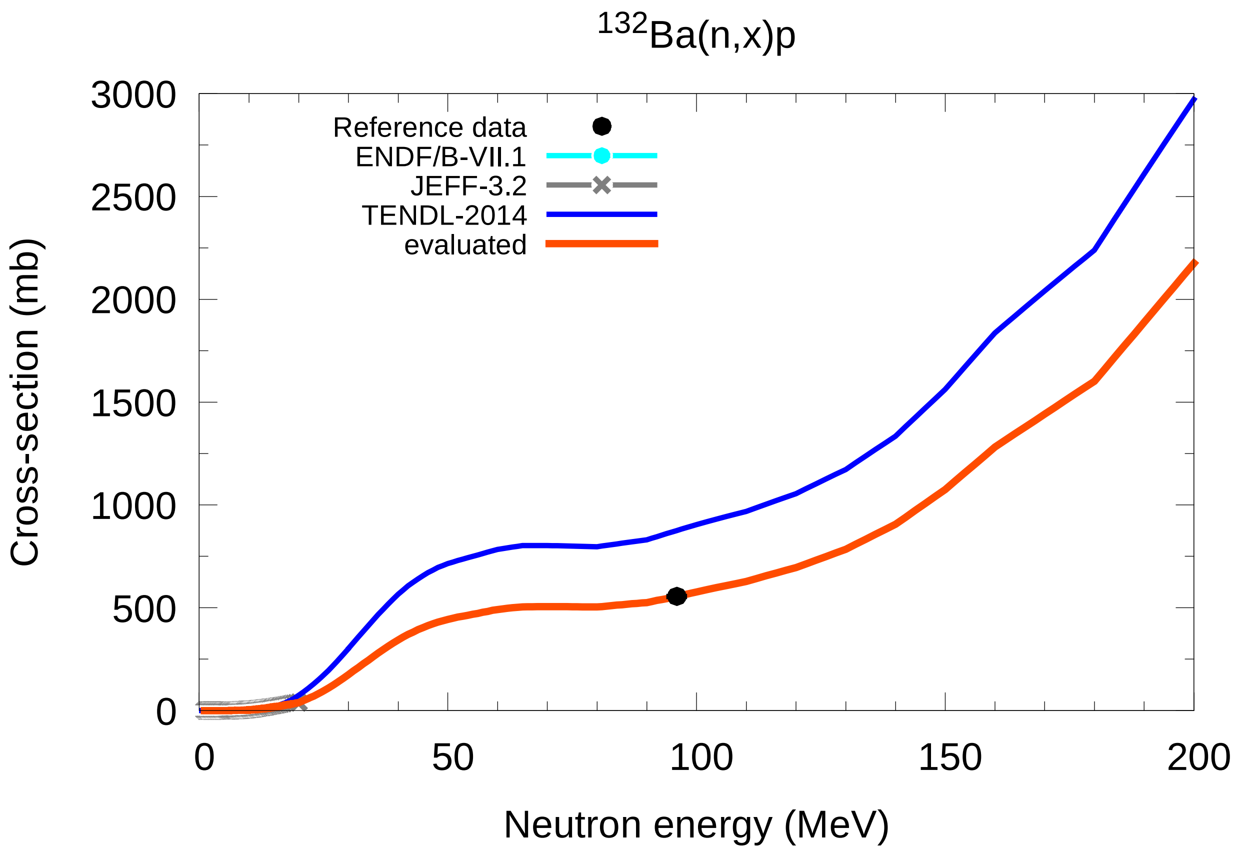
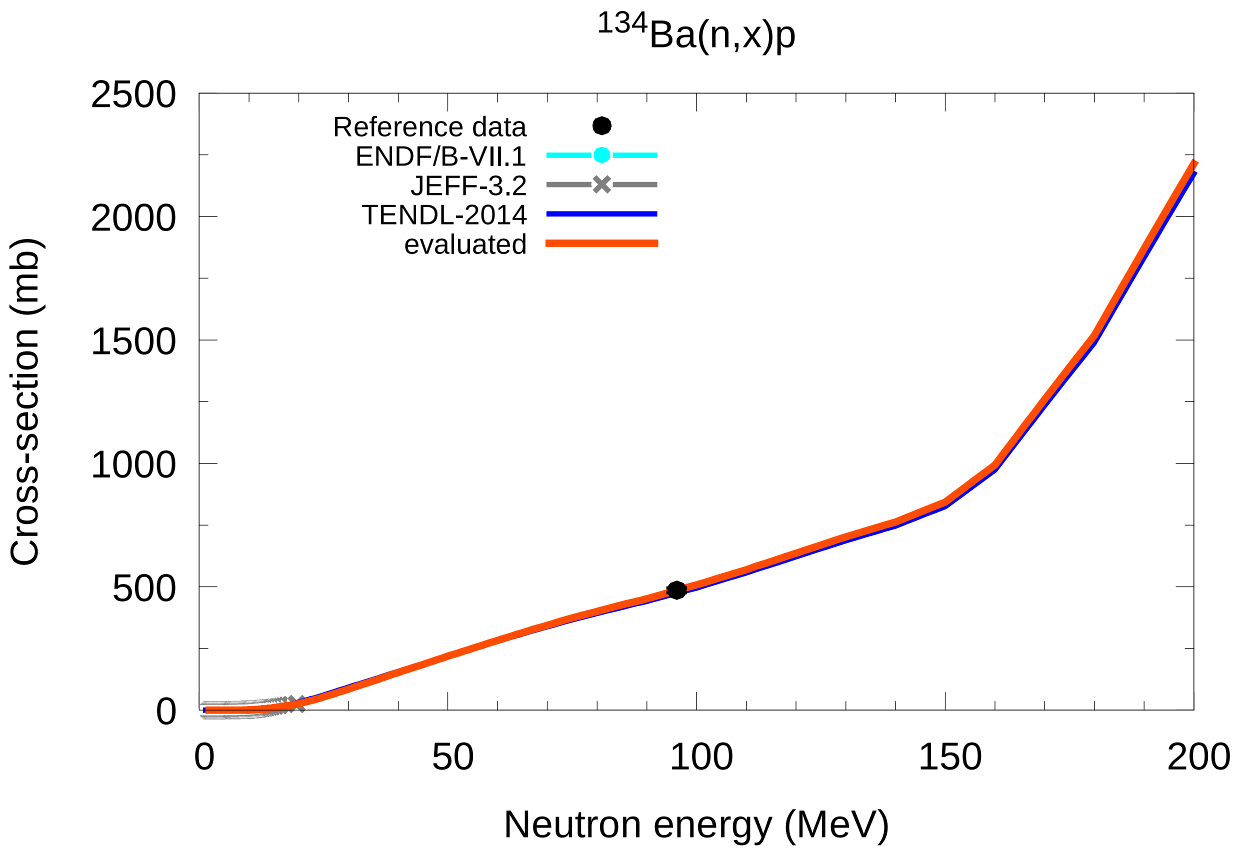
100
150
200



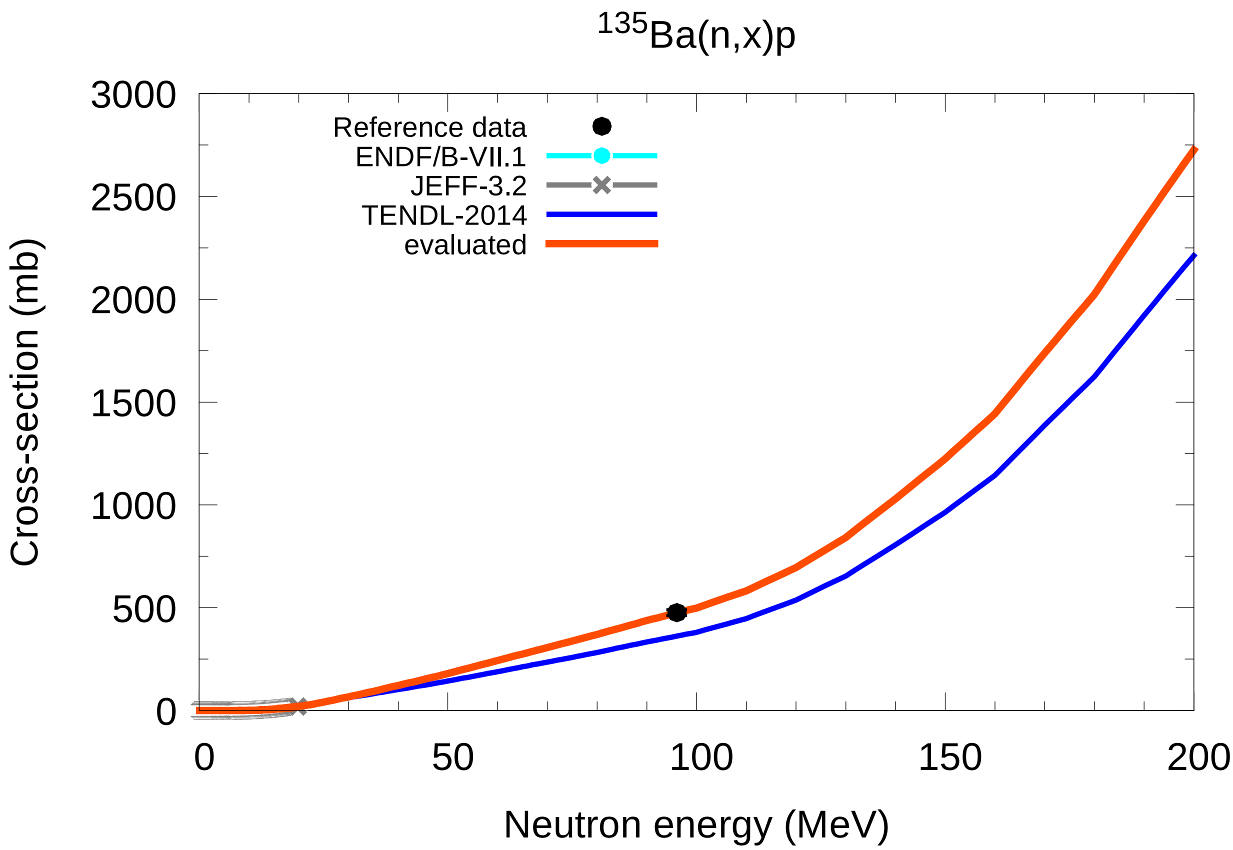
^{130}Ba(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
3500
0
50
100
150
200



^{132}Ba(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
0
50
100
150
200



^{134}Ba(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



^{135}Ba(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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1000
1500
2000
2500
3000
0
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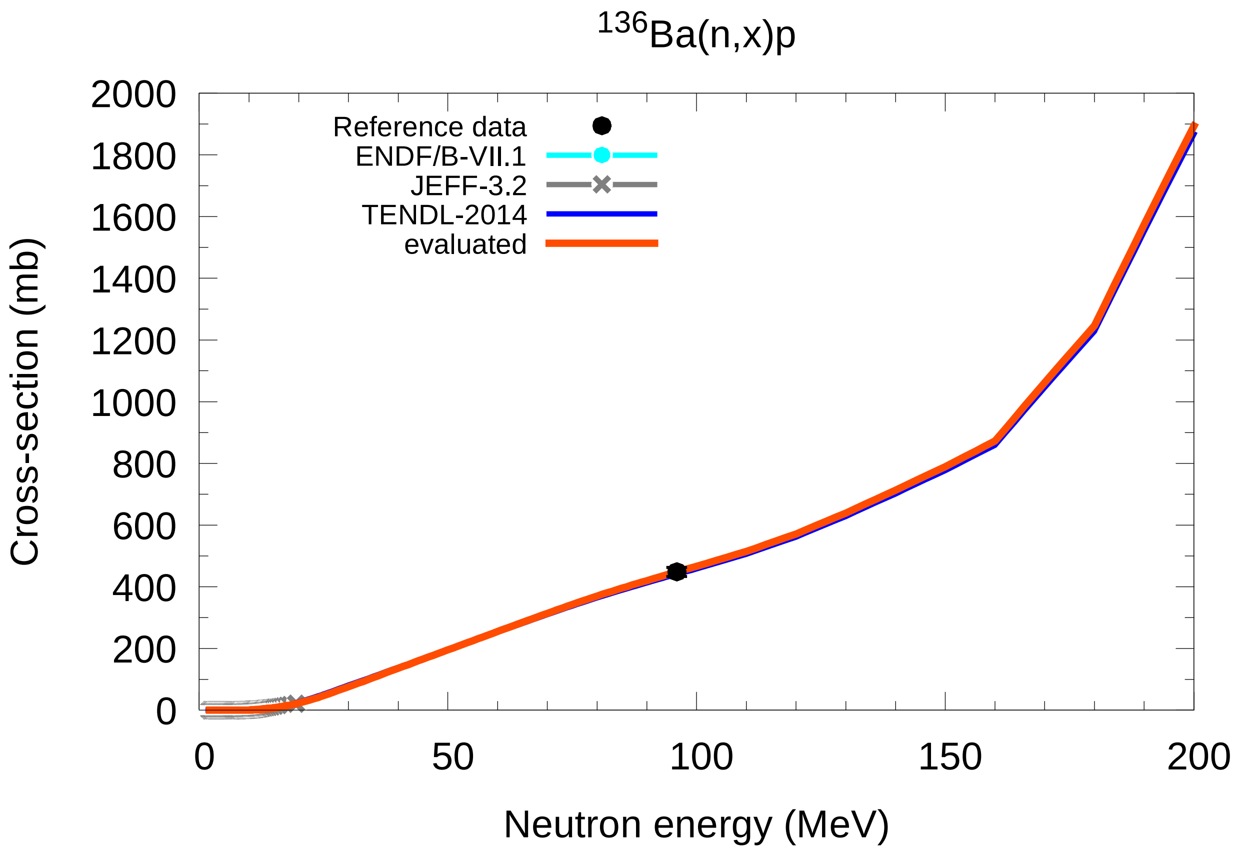
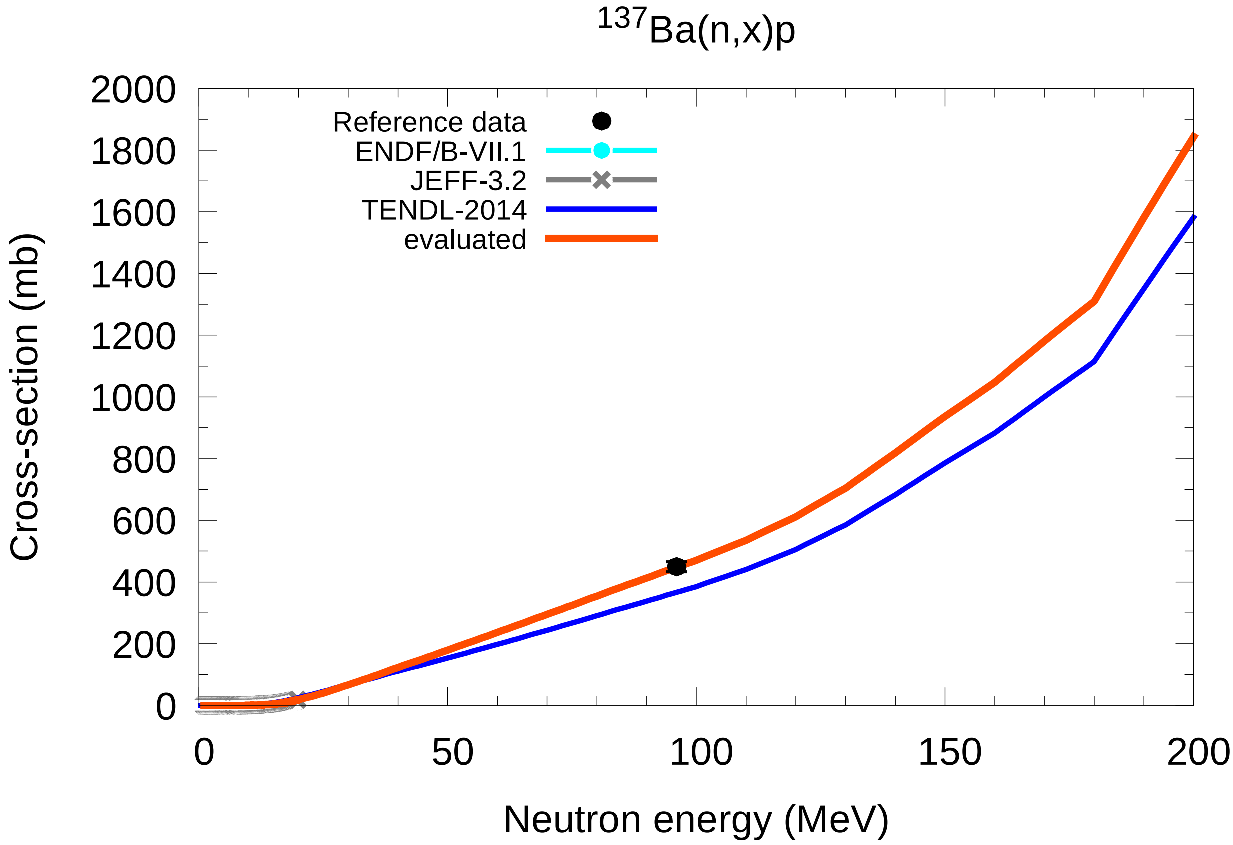
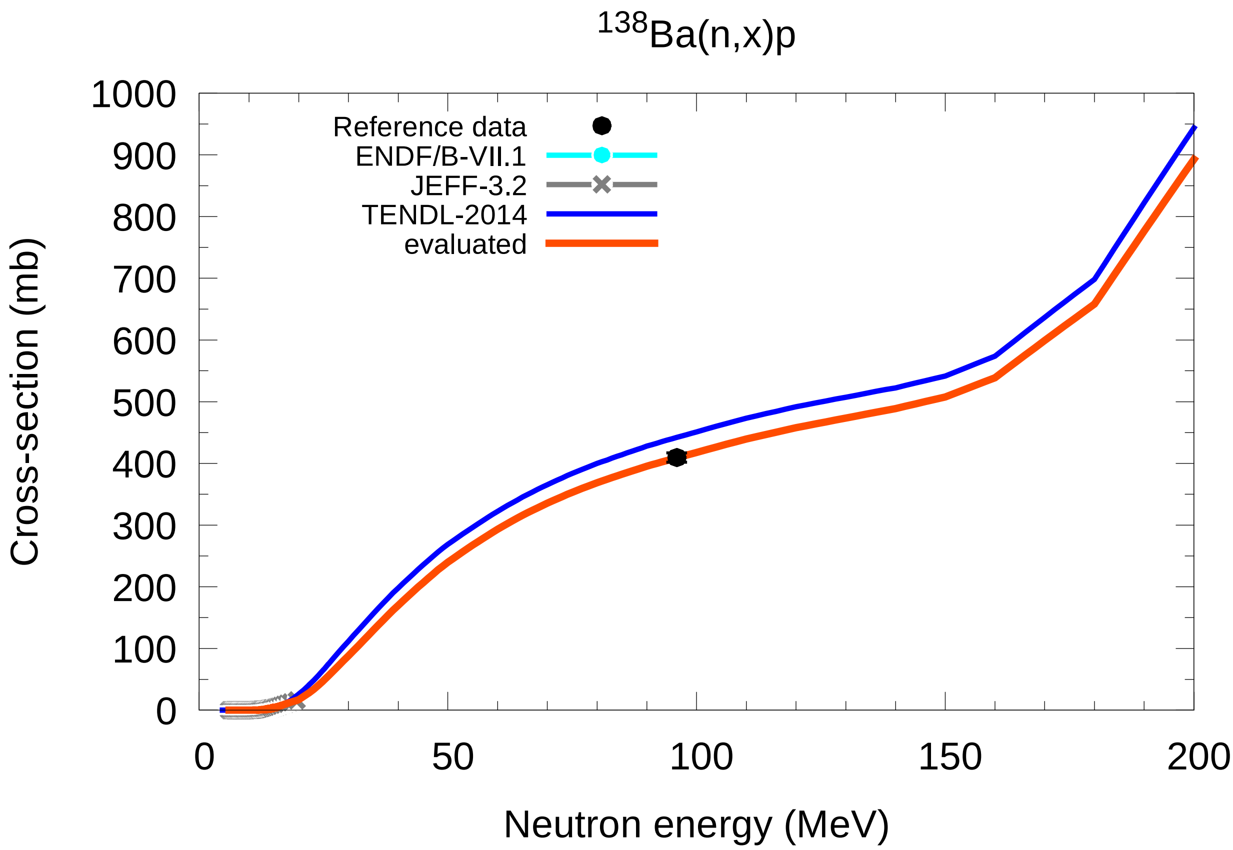
100
150
200



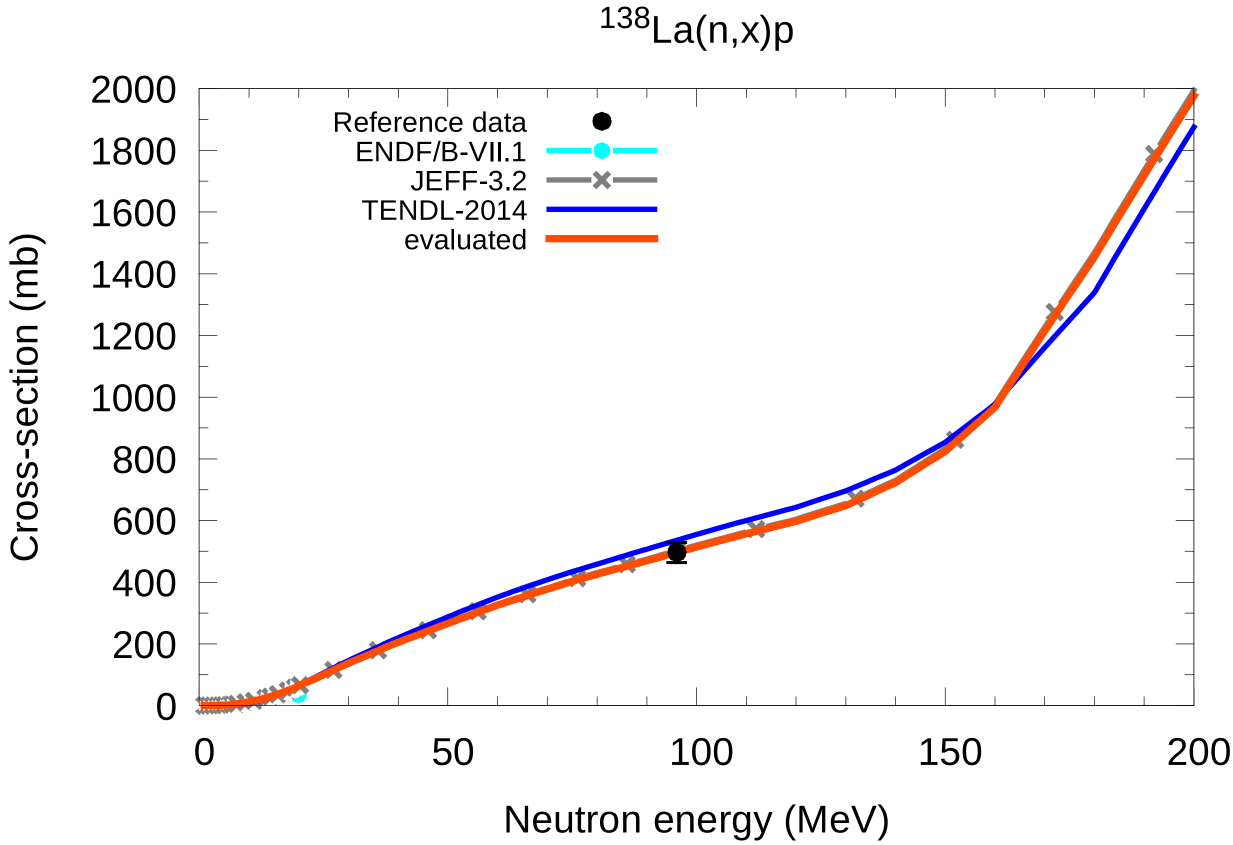
^{136}Ba(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0
50
100
150
200



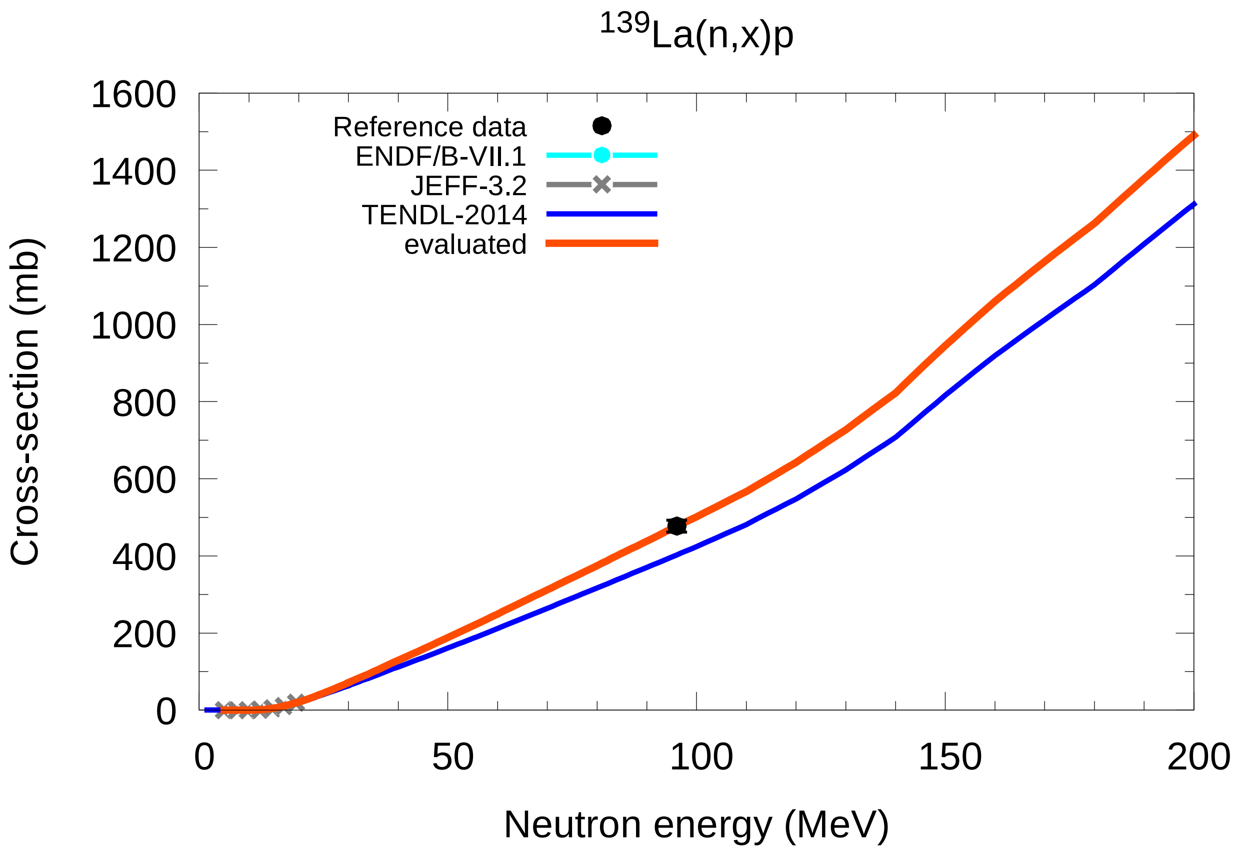
^{137}Ba(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0
50
100
150
200



^{138}Ba(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
1000
0
50
100
150
200



$^{138}La(n,x)p$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0
50
100
150
200



$^{139}La(n,x)p$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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400
600
800
1000
1200
1400
1600
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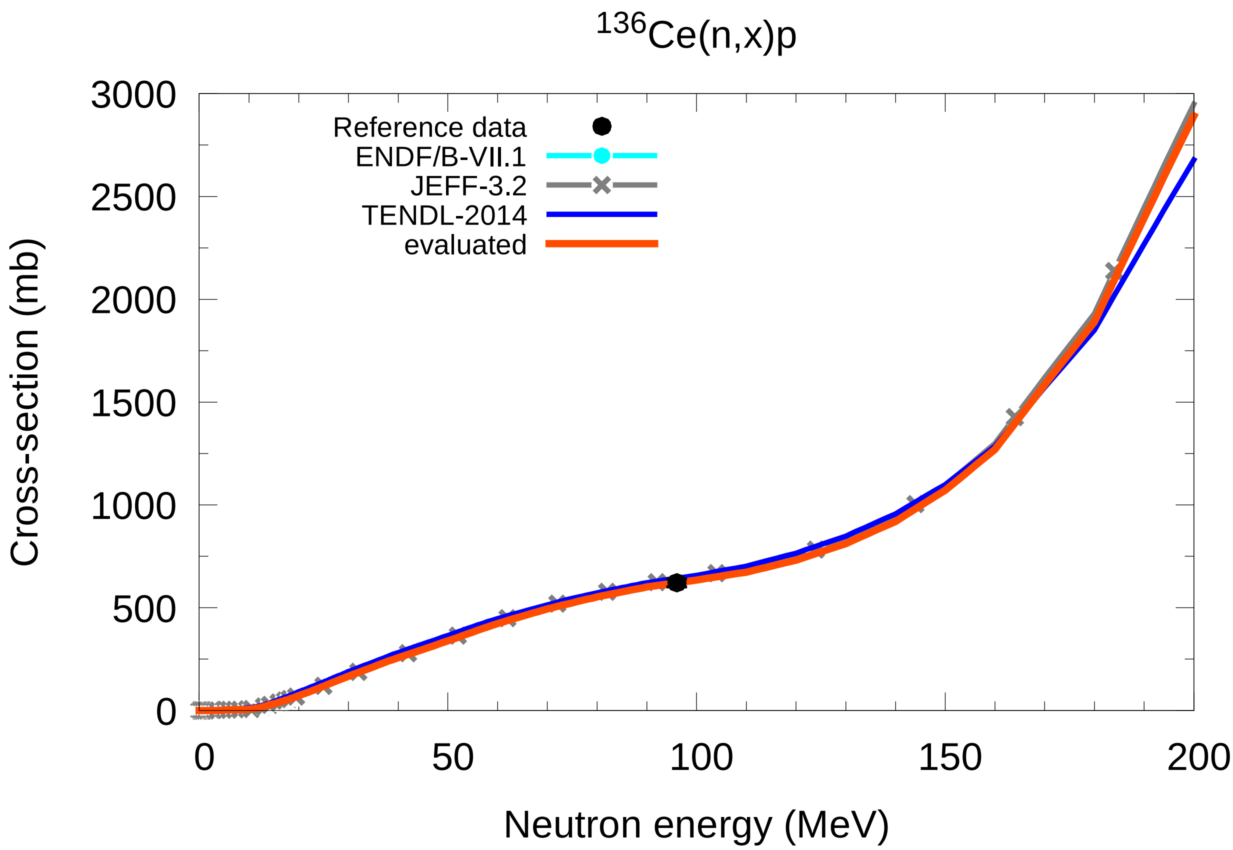
100
150
200



^{136}Ce(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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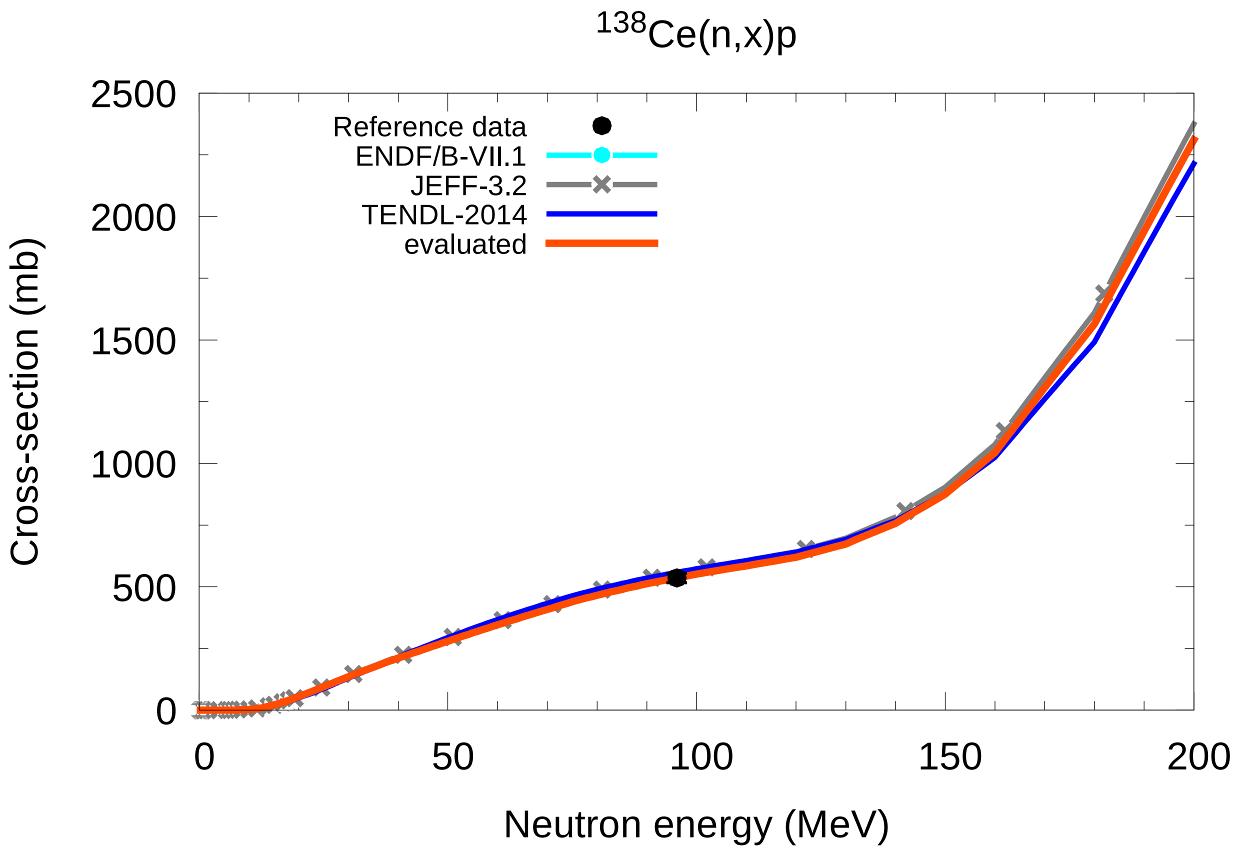
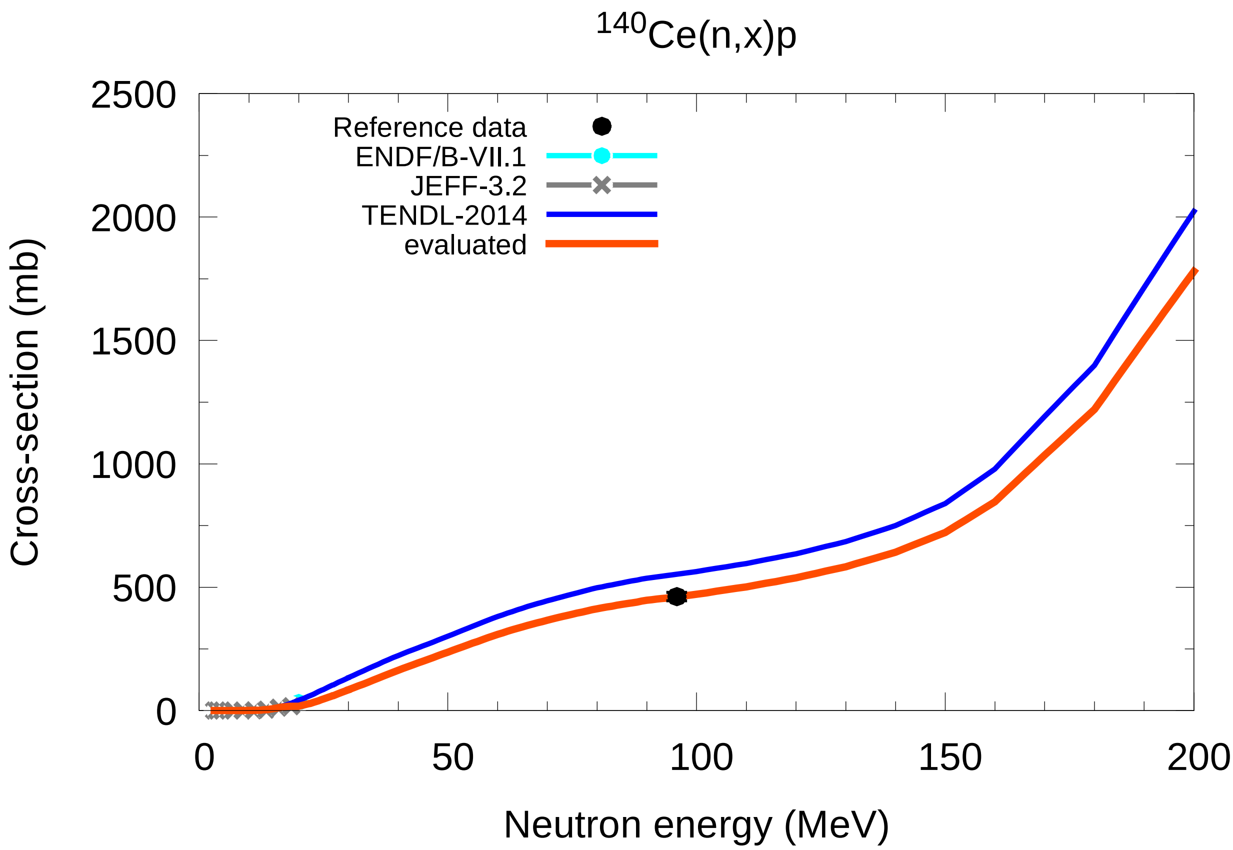
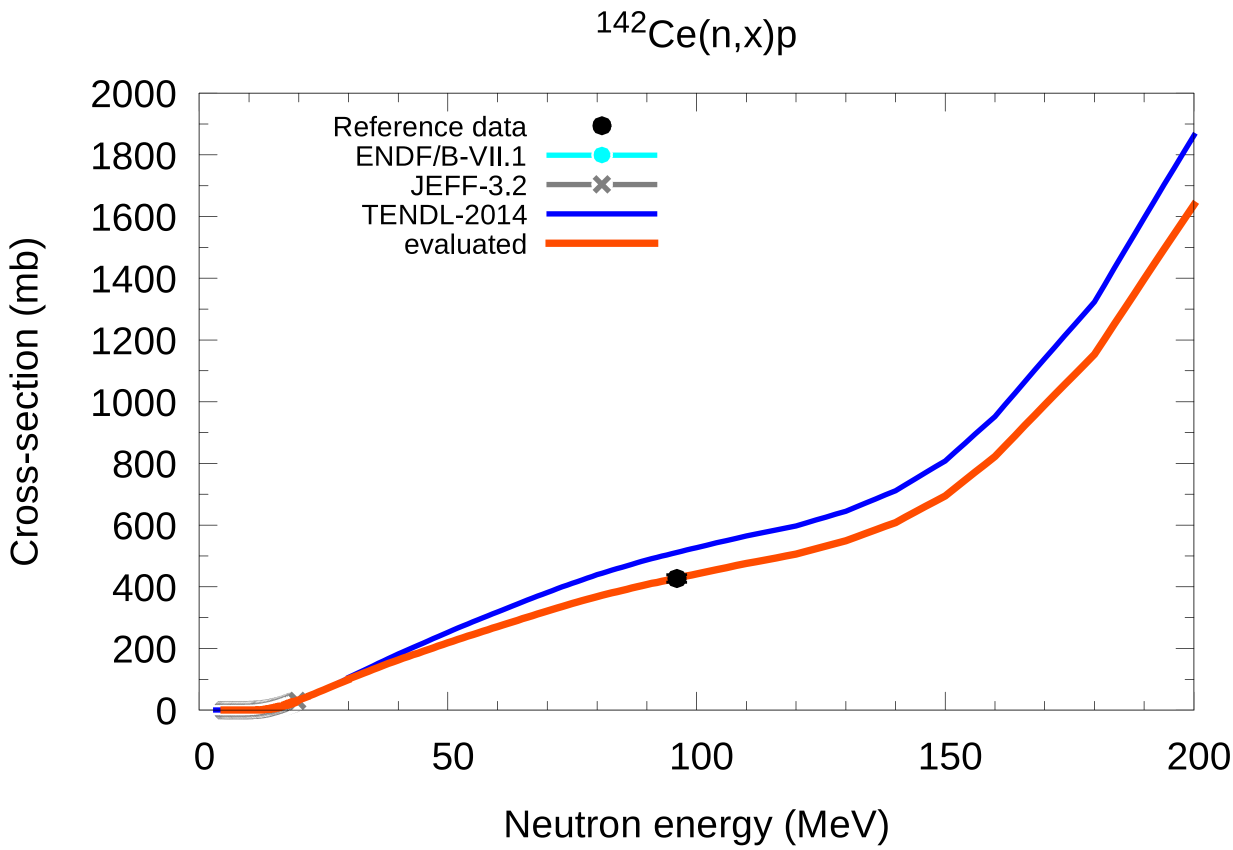
1000
1500
2000
2500
3000
0
50
100
150
200



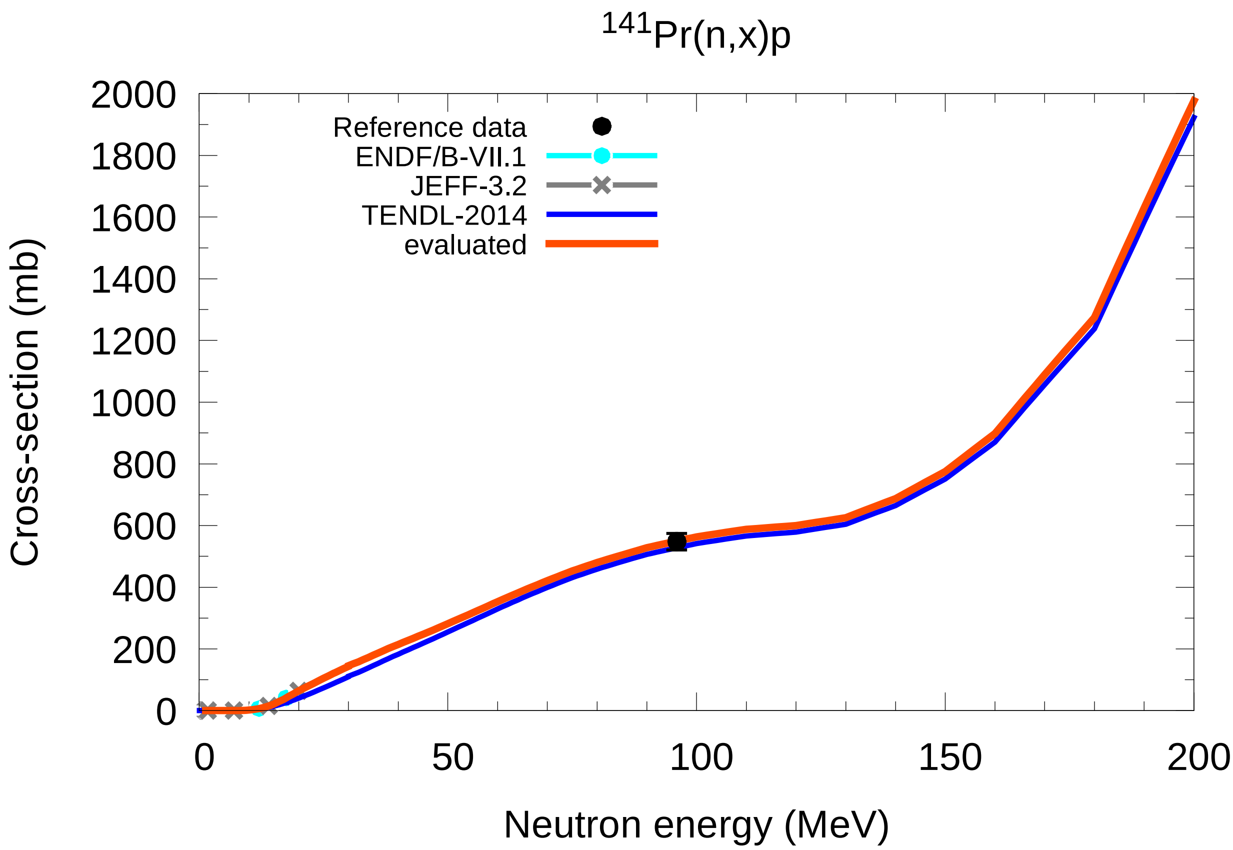
^{138}Ce(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



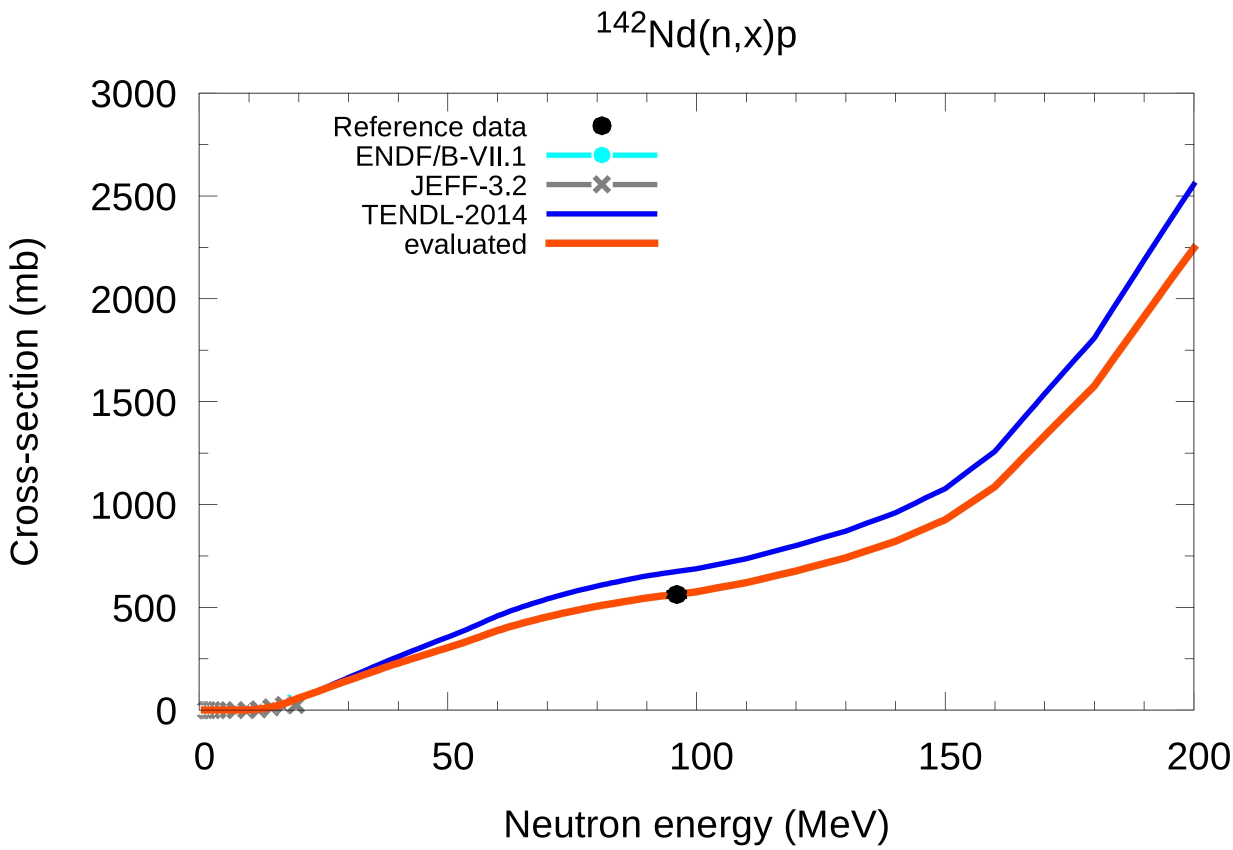
^{140}Ce(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
2500
2000
1500
1000
500
0
0
50
100
150
200



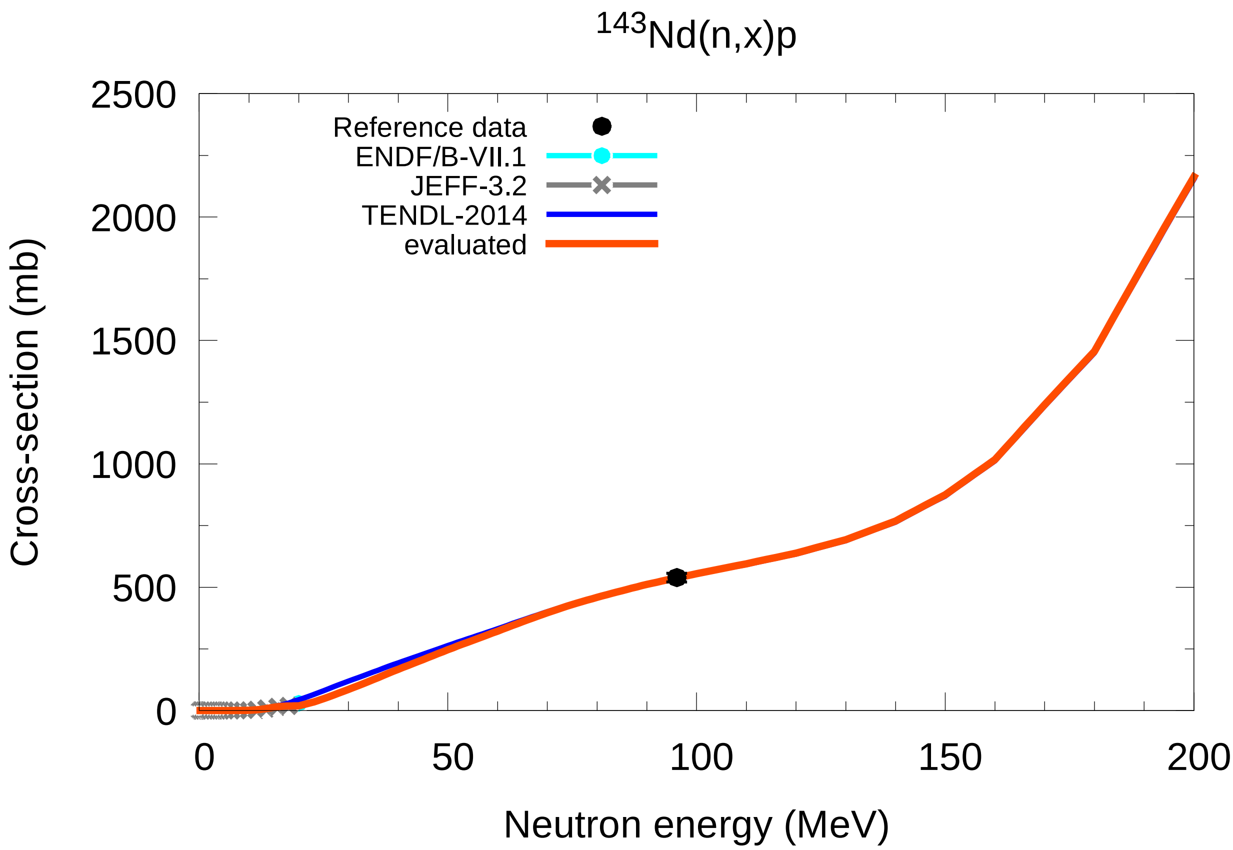
^{142}Ce(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
2000
1800
1600
1400
1200
1000
800
600
400
200
0
0
50
100
150
200



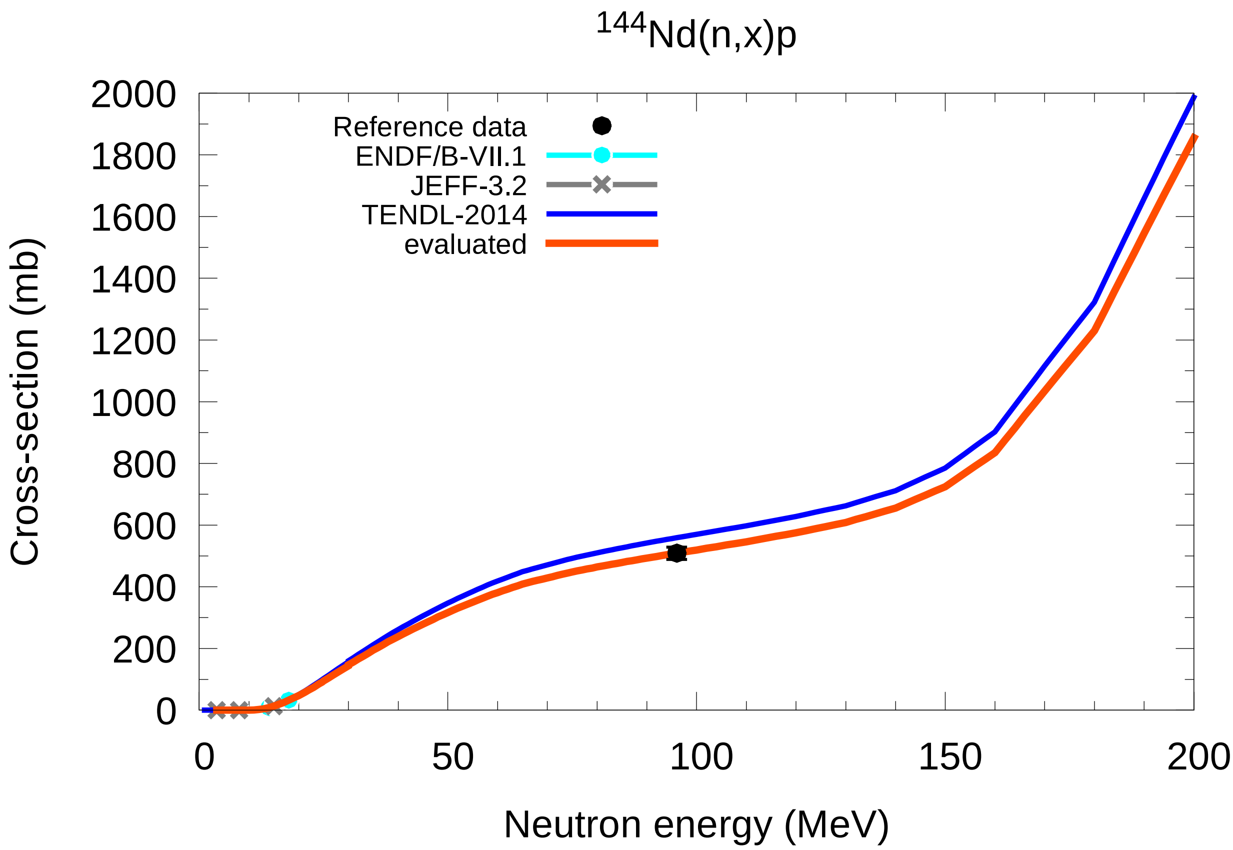
^{141}Pr(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0
50
100
150
200



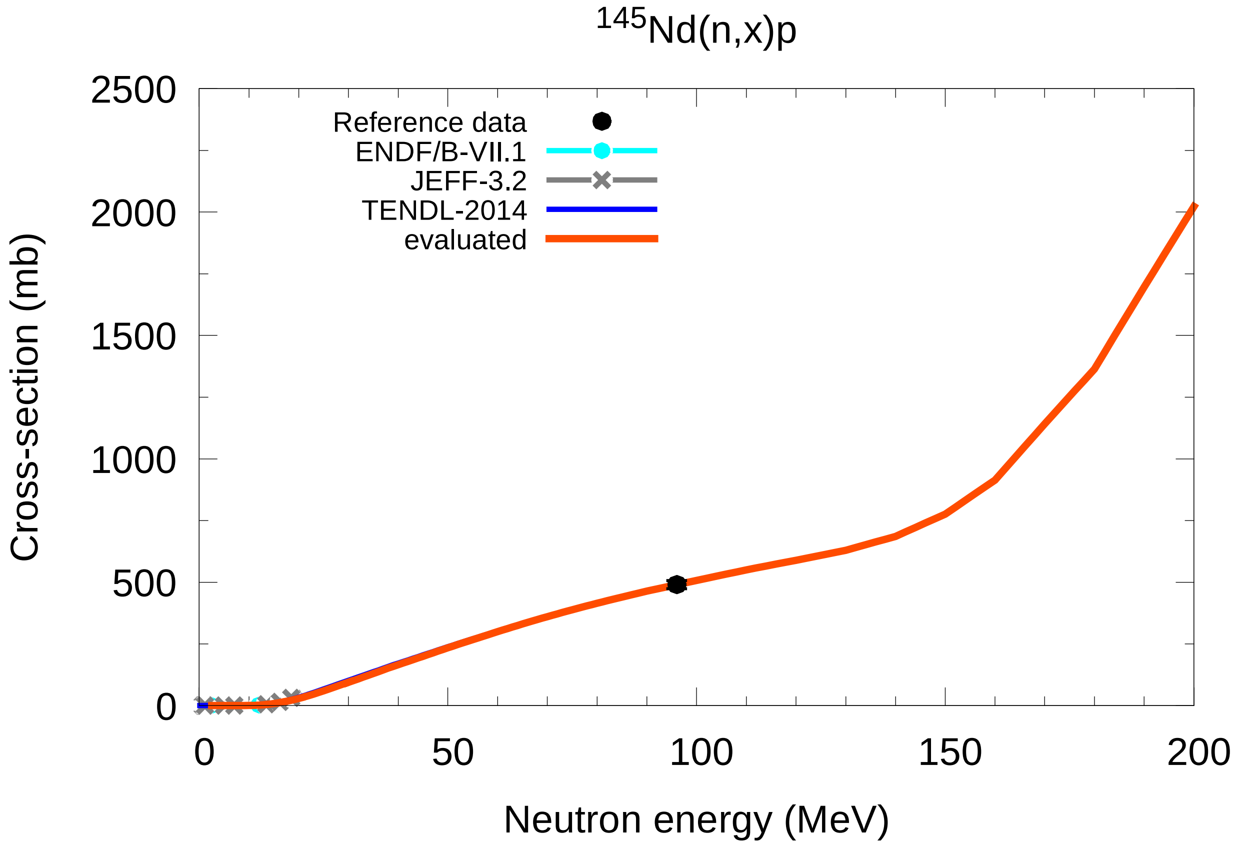
^{142}Nd(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
0
50
100
150
200



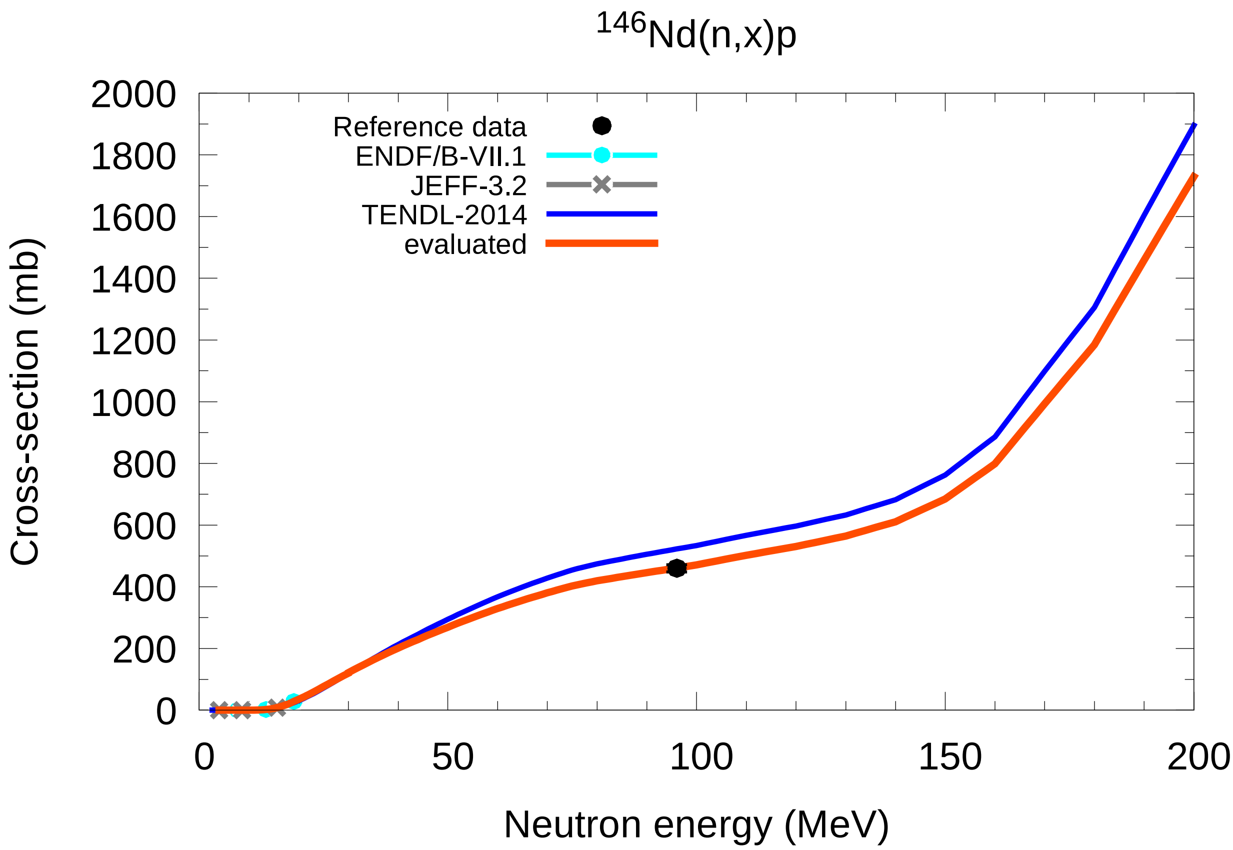
^{143}Nd(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



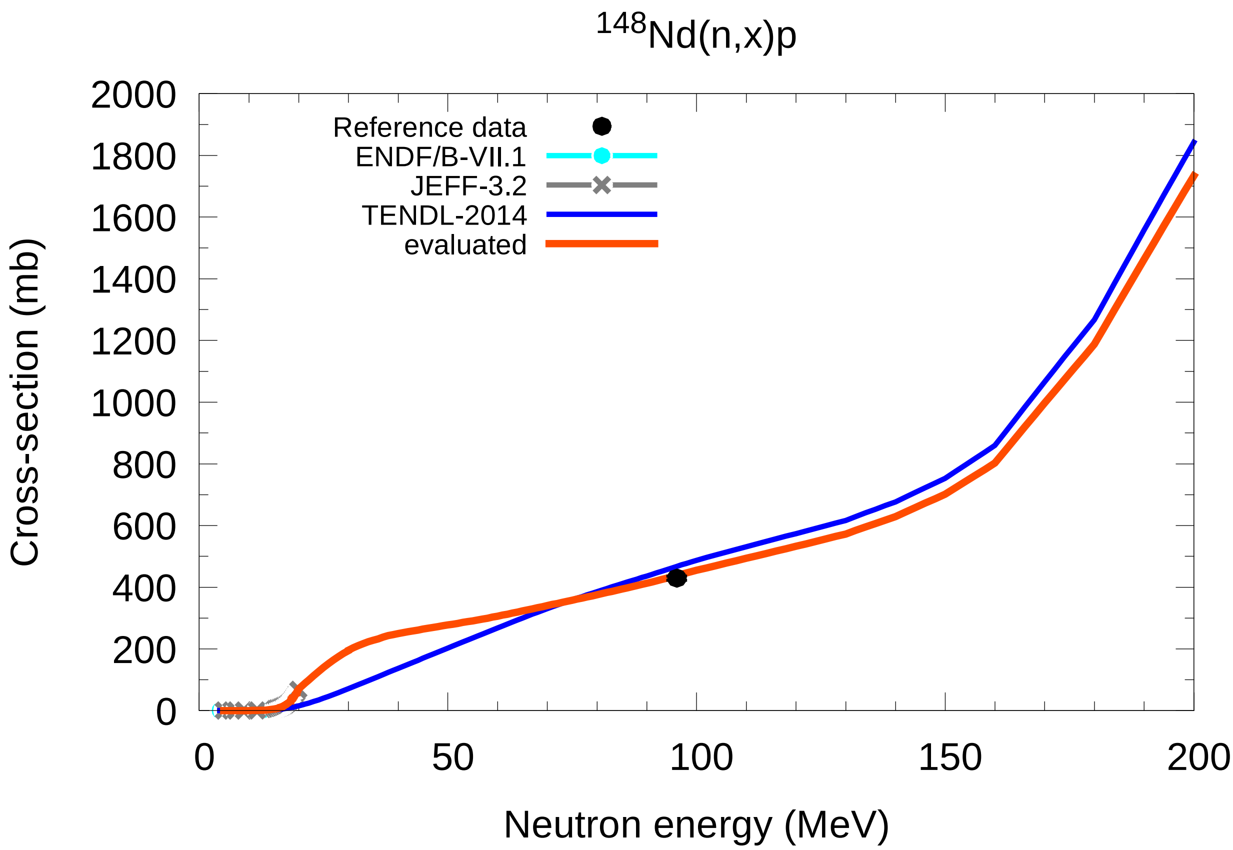
^{144}Nd(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0
50
100
150
200



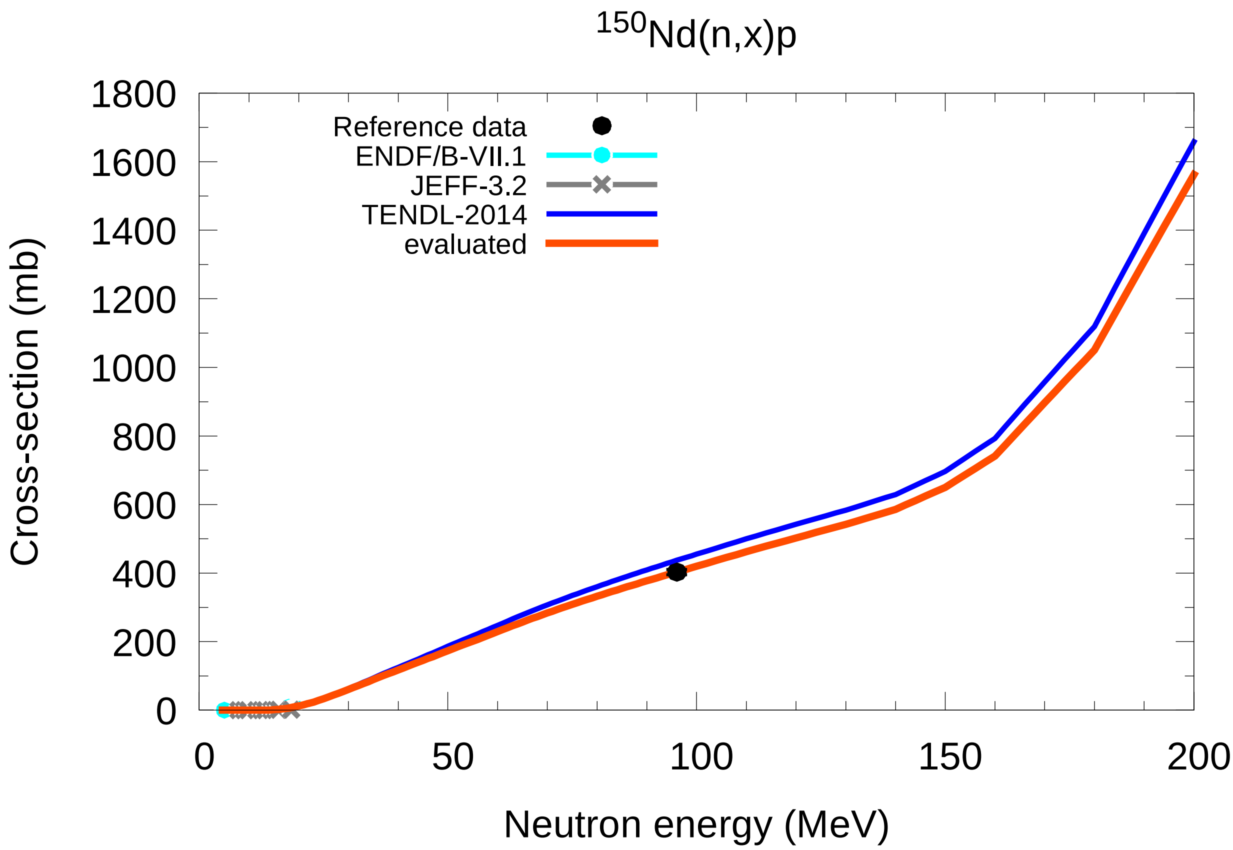
145Nd(n,x)p
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



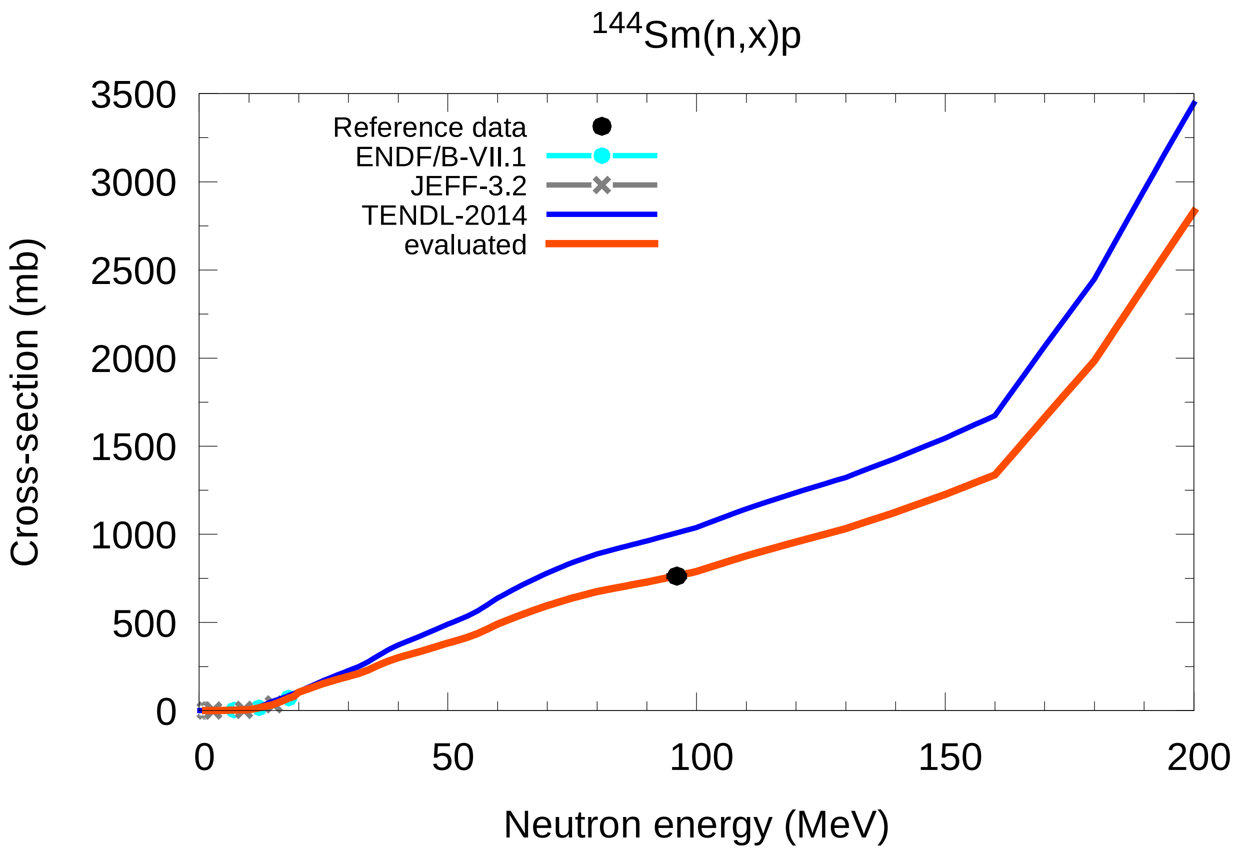
146Nd(n,x)p
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



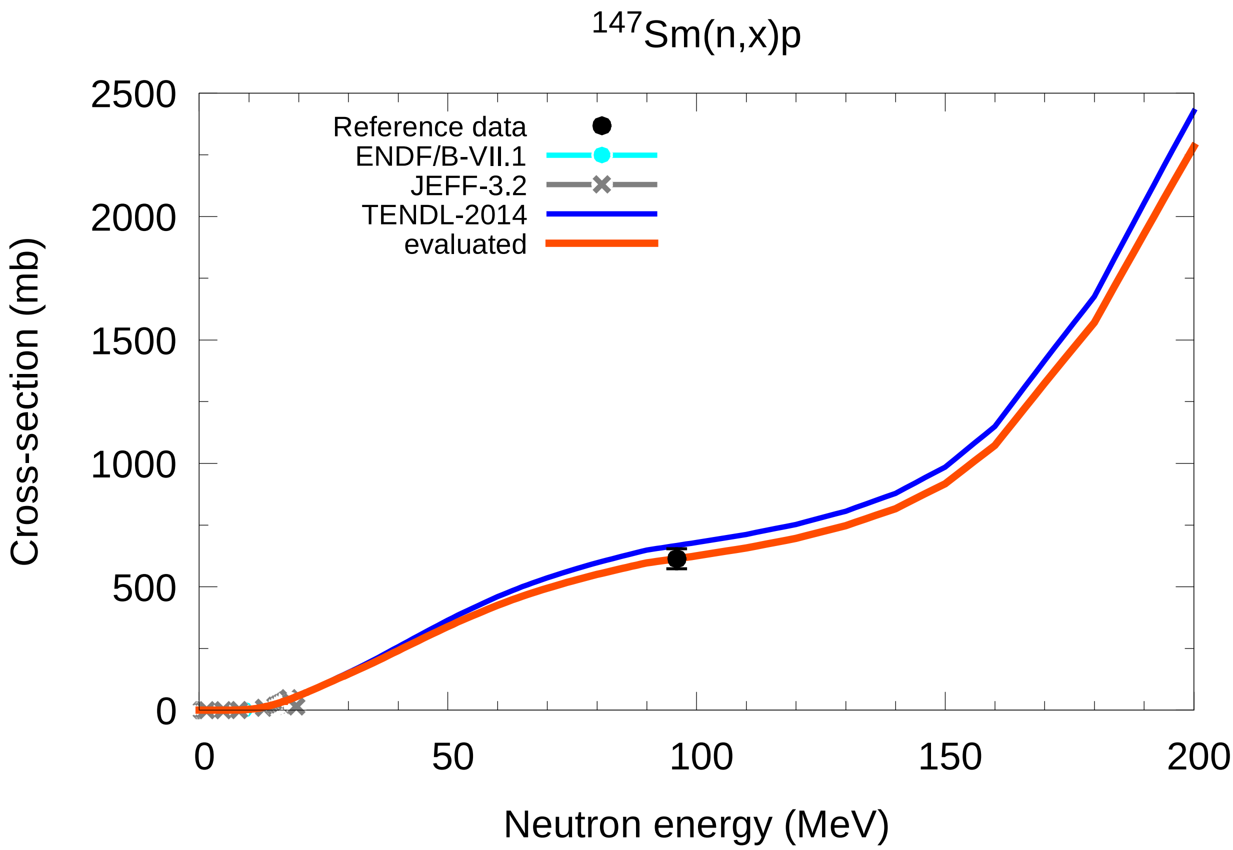
^{148}Nd(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0
50
100
150
200



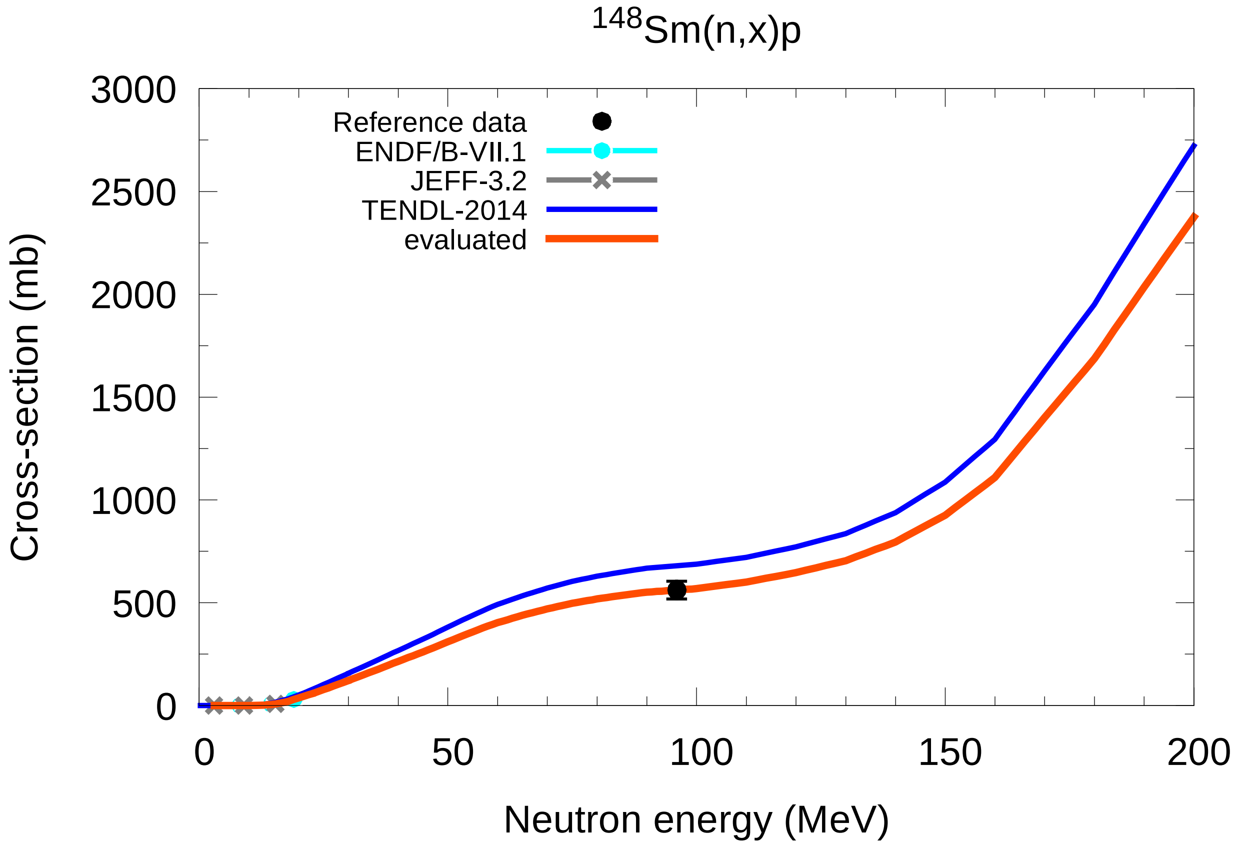
^{150}Nd(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
0
50
100
150
200



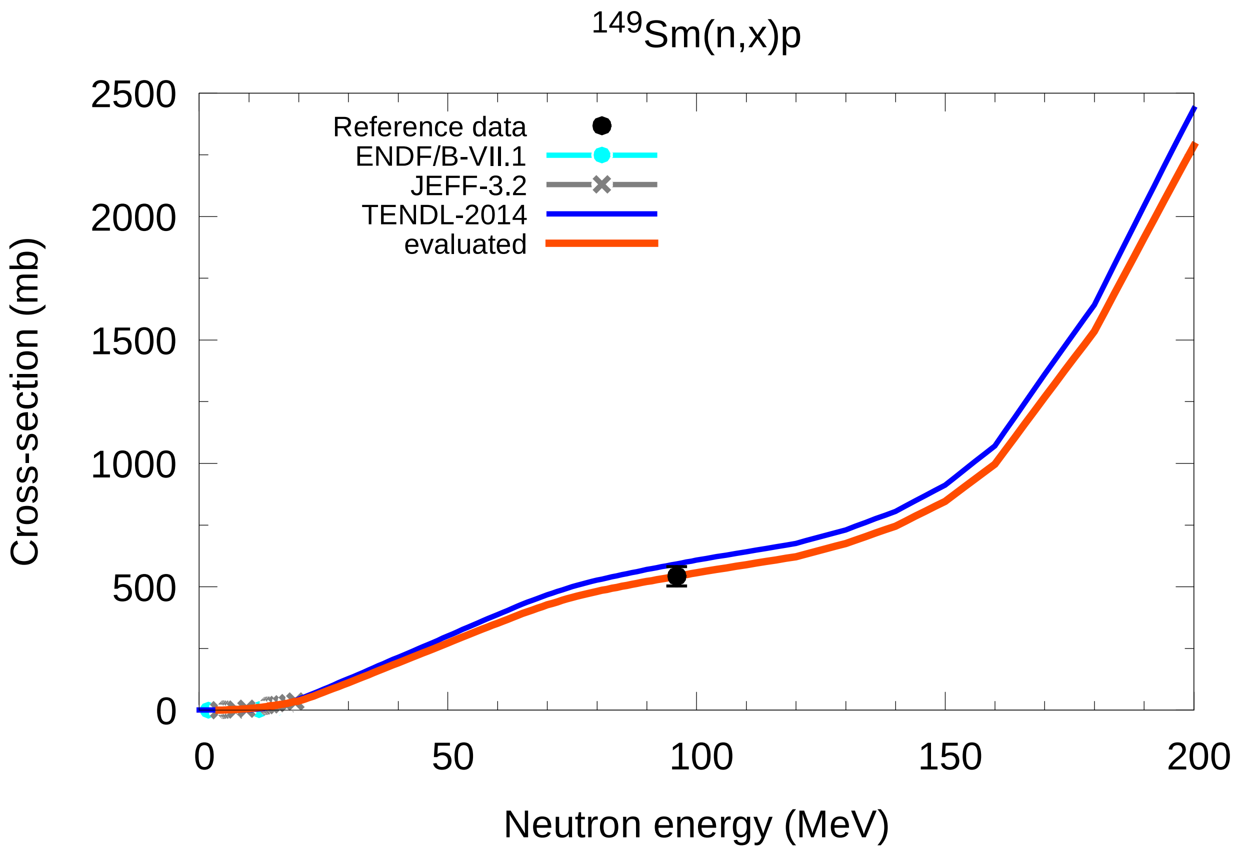
^{144}Sm(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
3500
3000
2500
2000
1500
1000
500
0
0
50
100
150
200
Neutron energy (MeV)



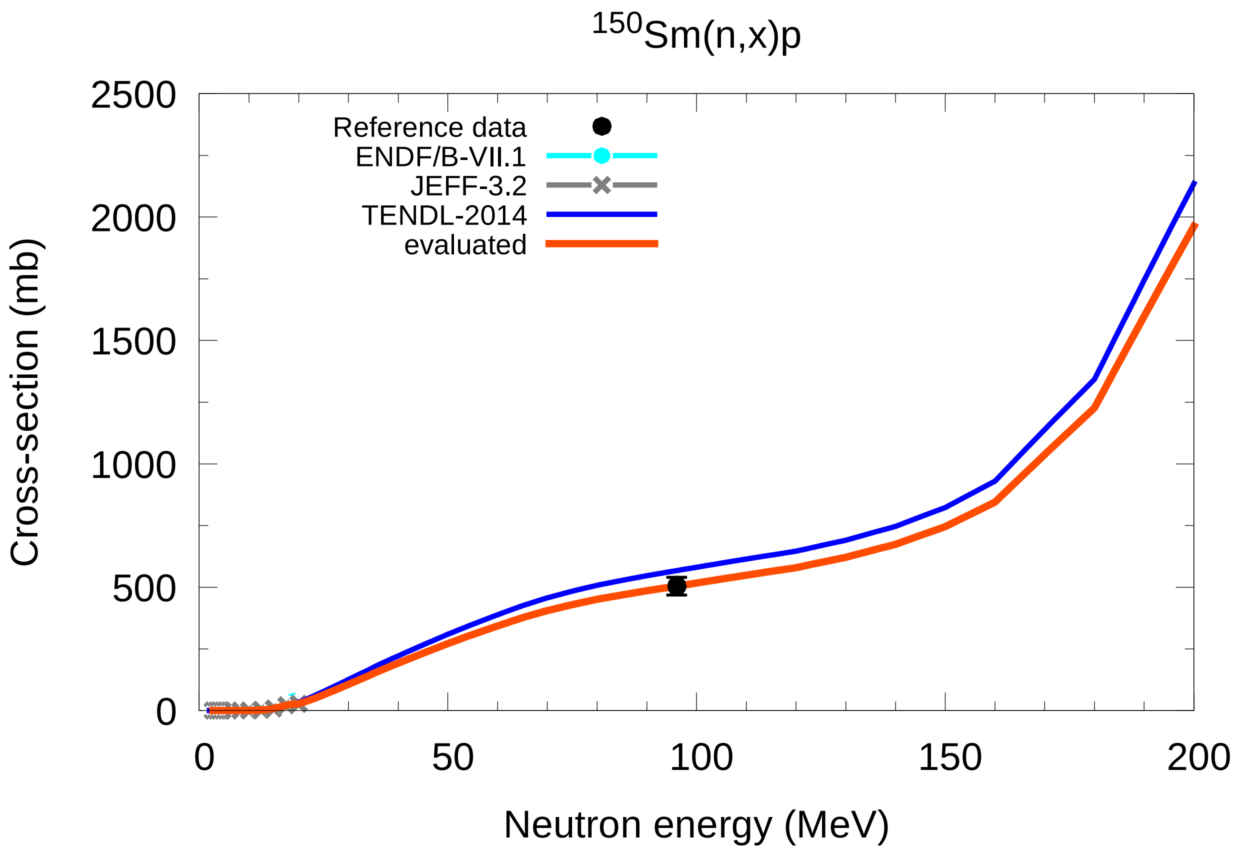
^{147}Sm(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
2500
2000
1500
1000
500
0
0
50
100
150
200
Neutron energy (MeV)



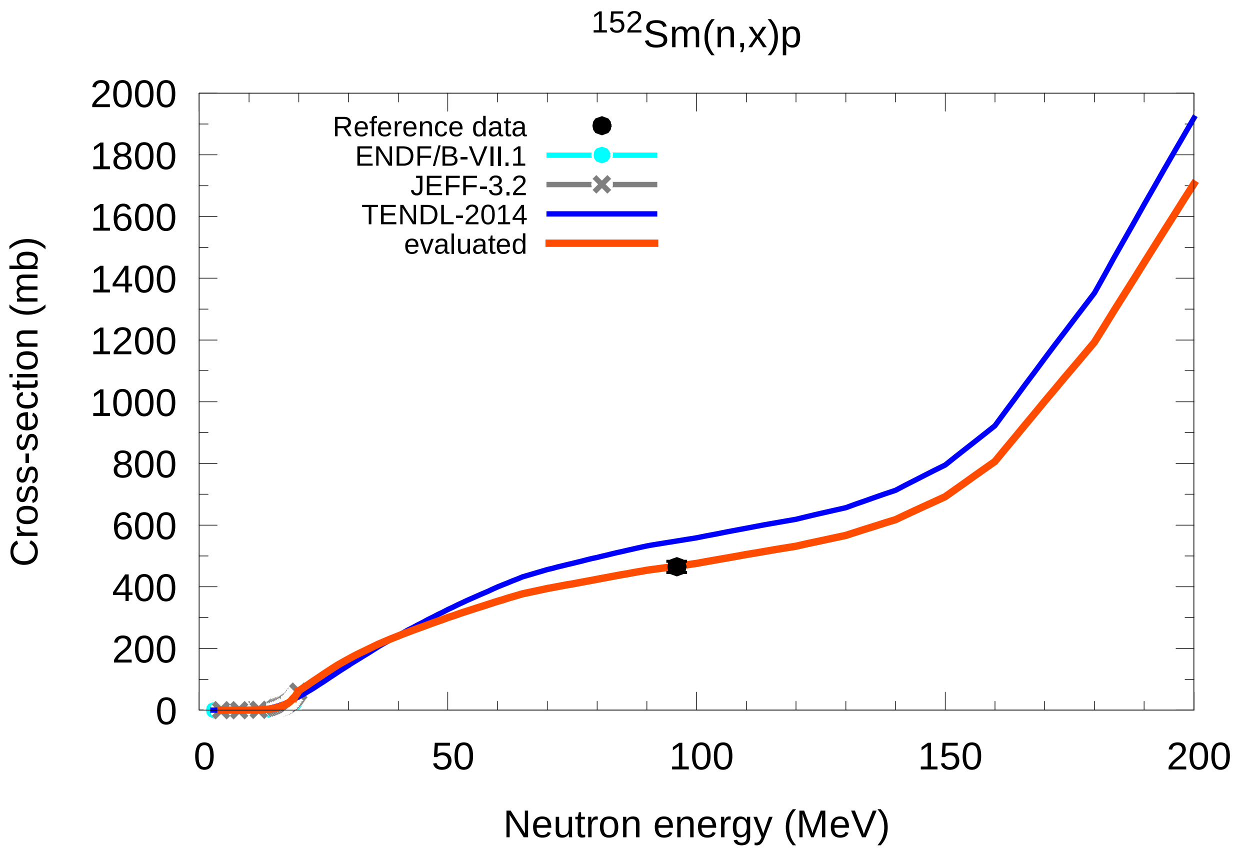
^{148}Sm(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
0
50
100
150
200



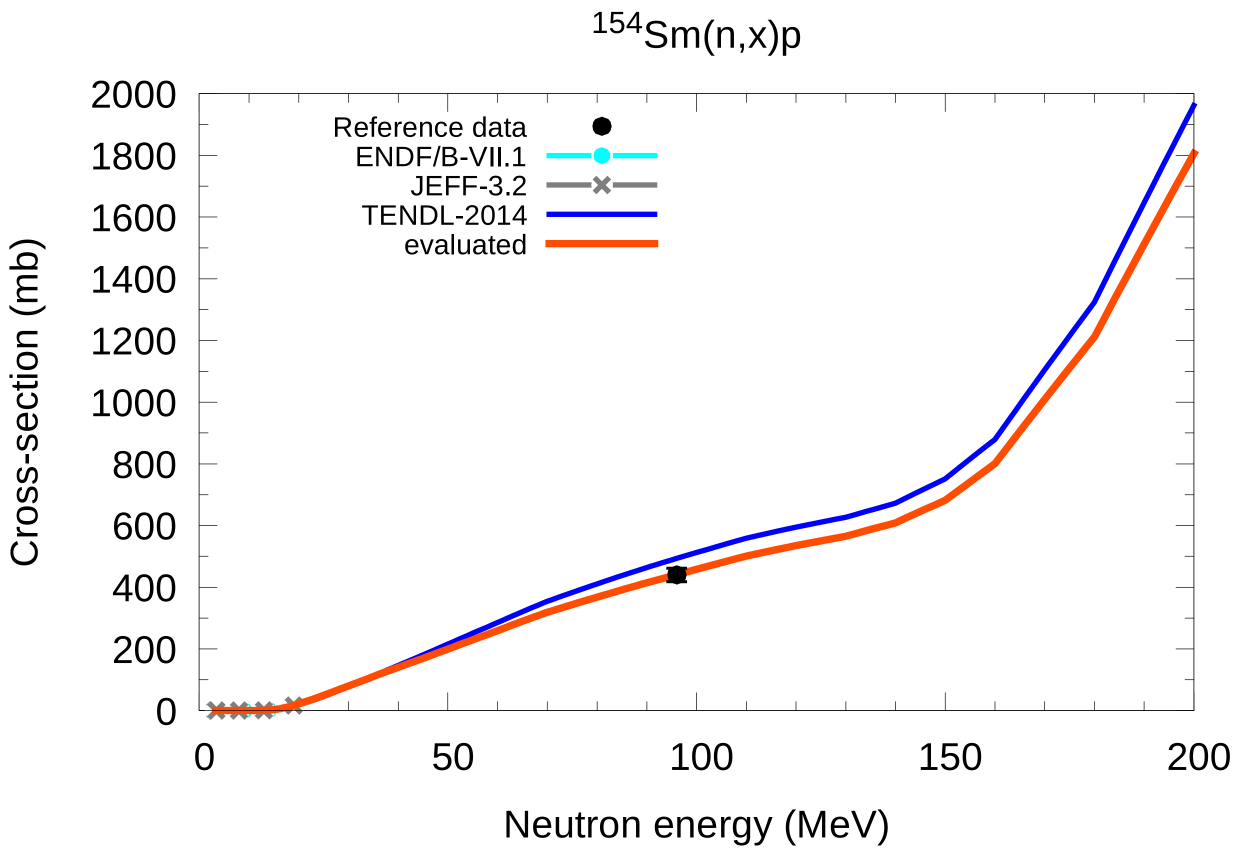
^{149}Sm(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



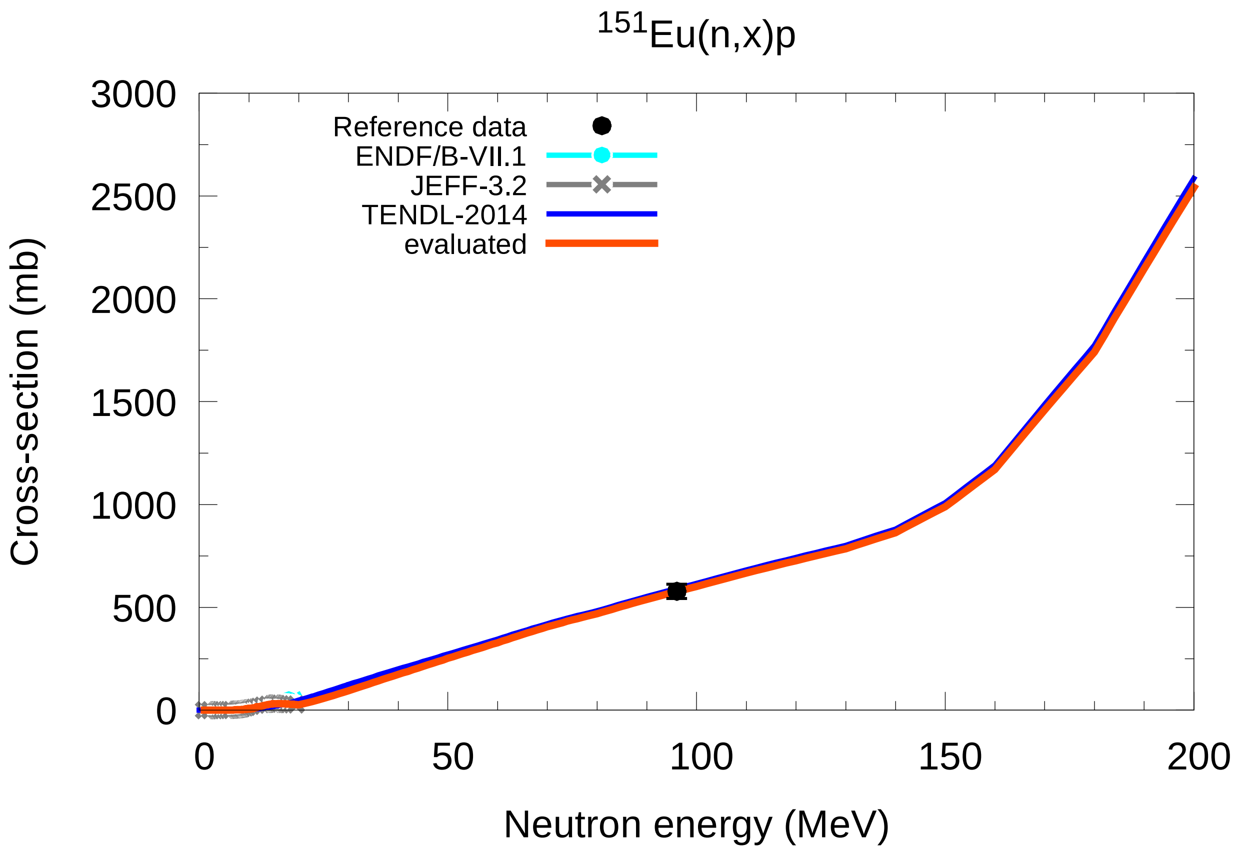
^{150}Sm(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
2500
2000
1500
1000
500
0
0
50
100
150
200



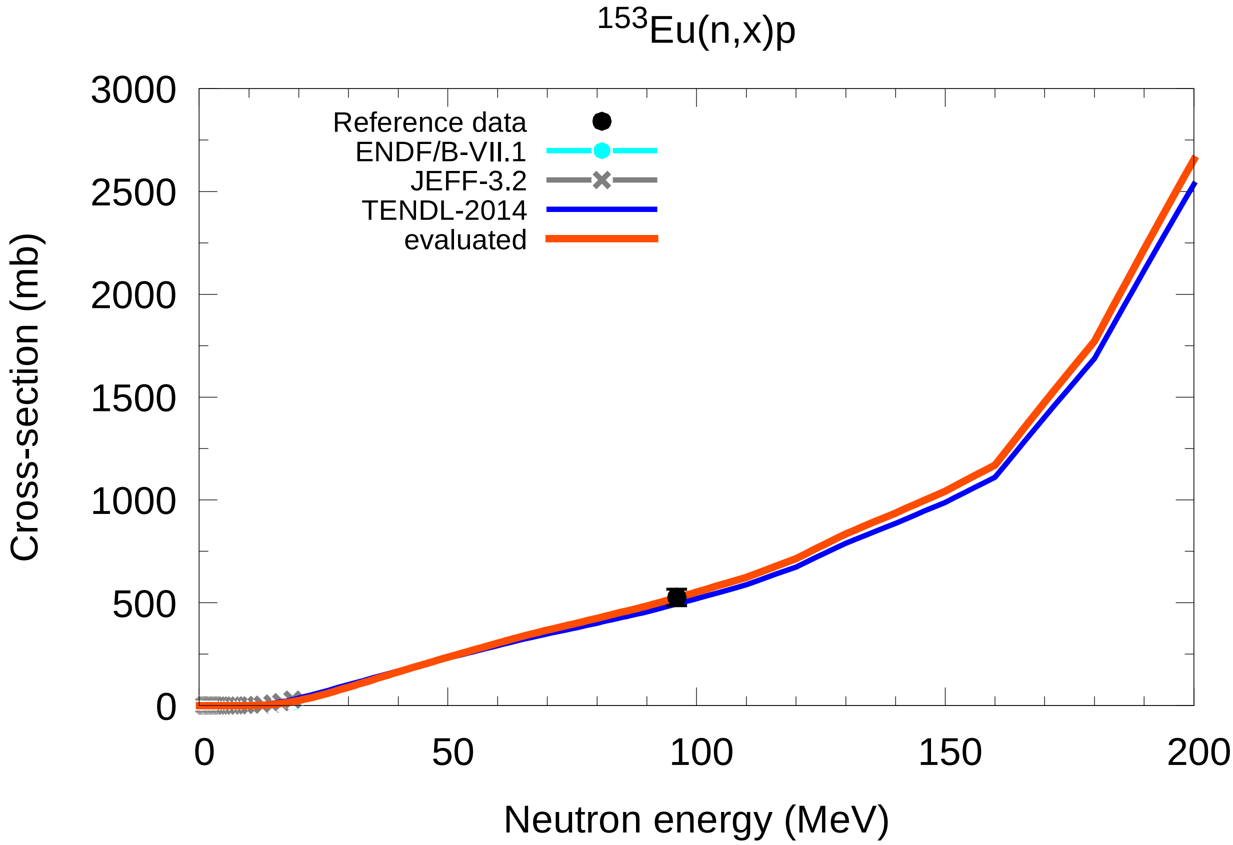
^{152}Sm(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
2000
1800
1600
1400
1200
1000
800
600
400
200
0
0
50
100
150
200



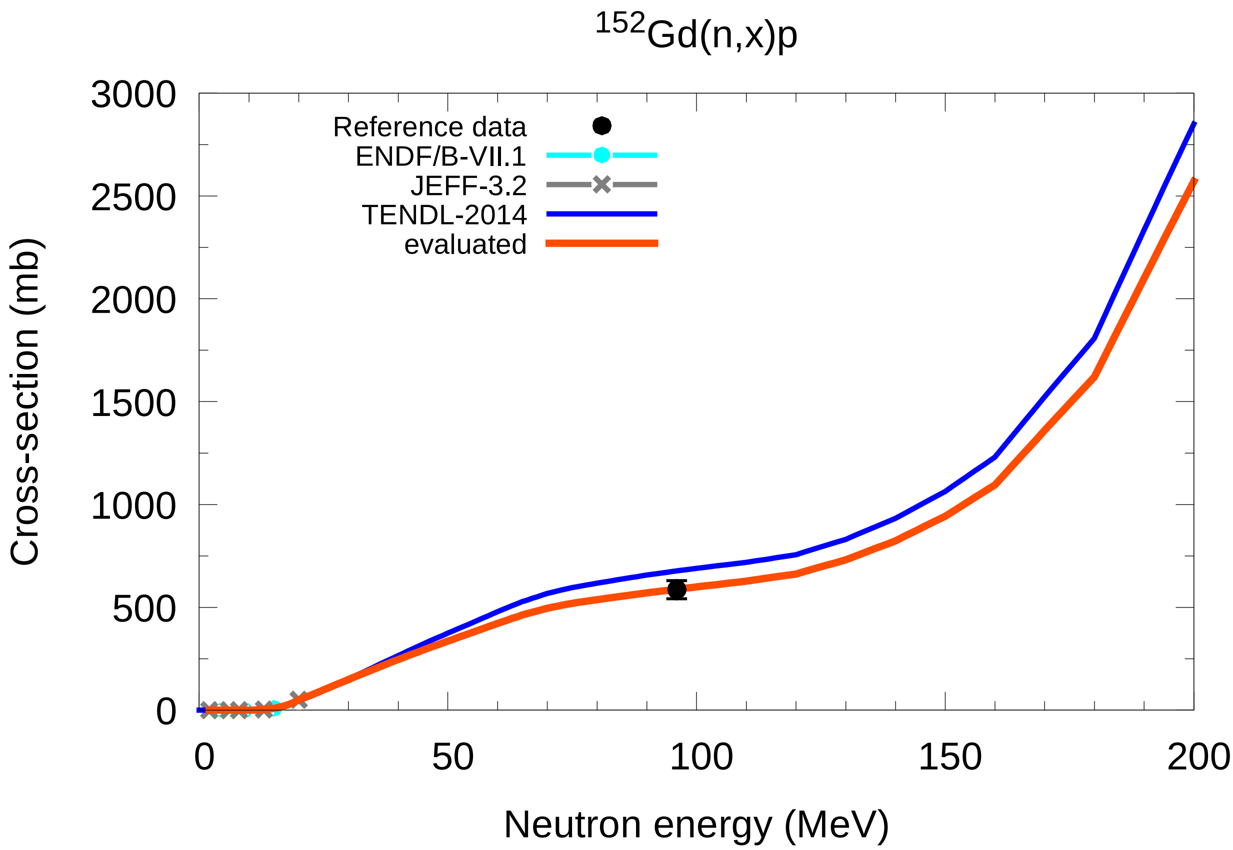
^{154}Sm(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0
50
100
150
200



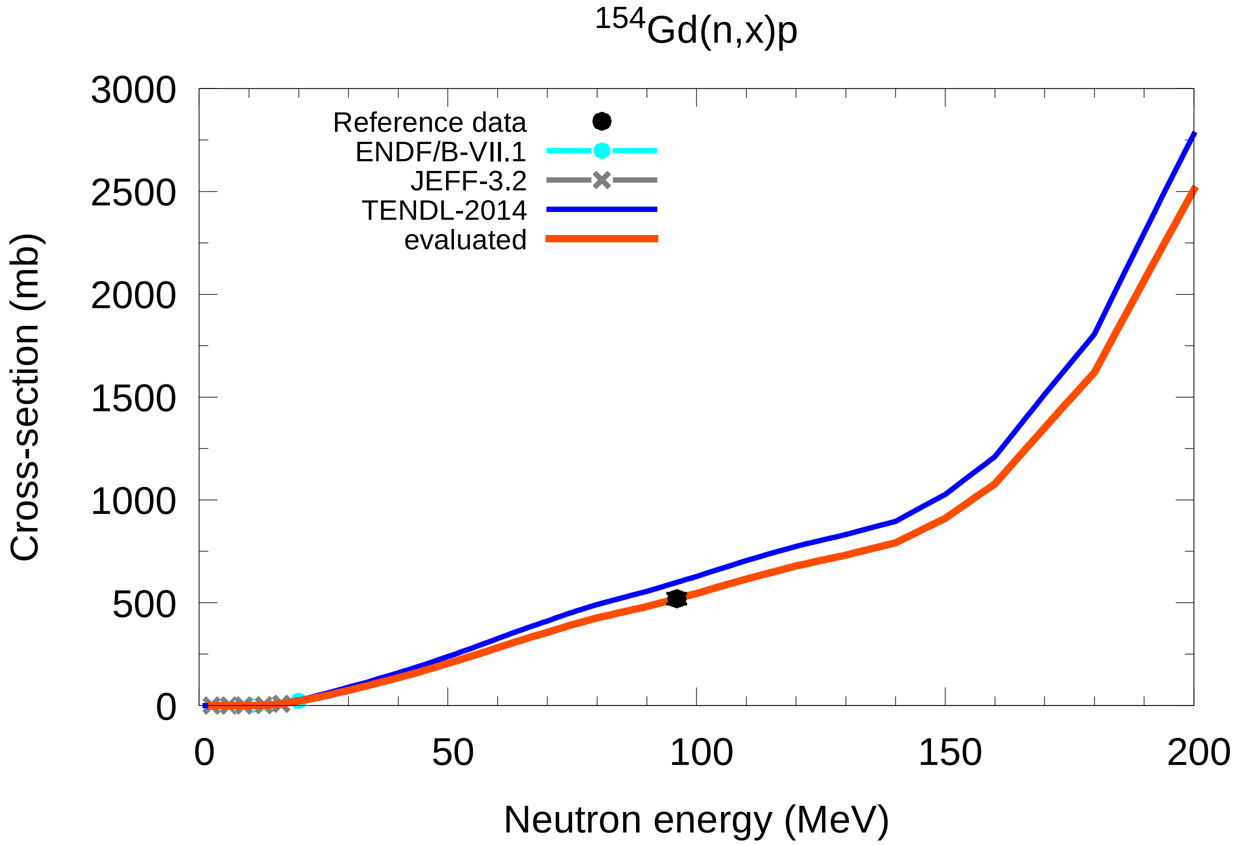
^{151}Eu(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
0
50
100
150
200

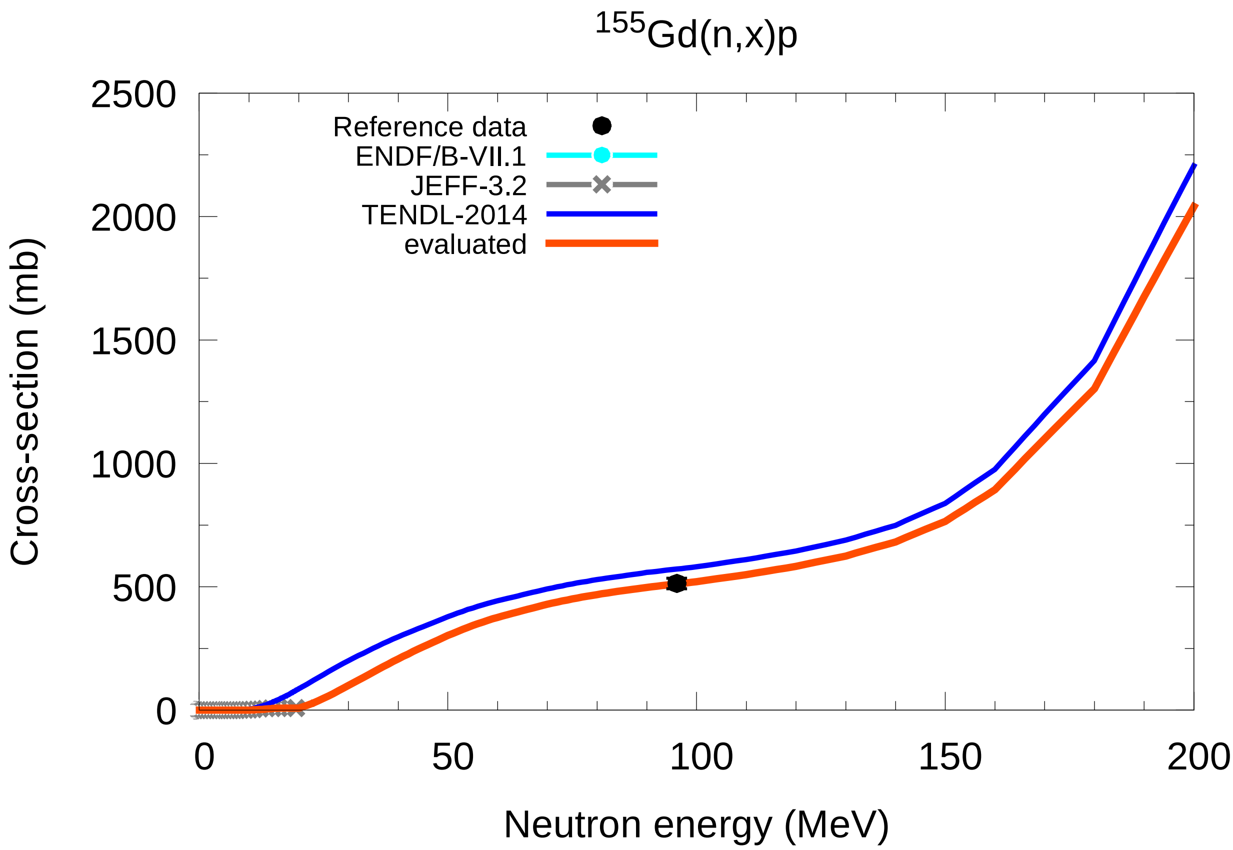


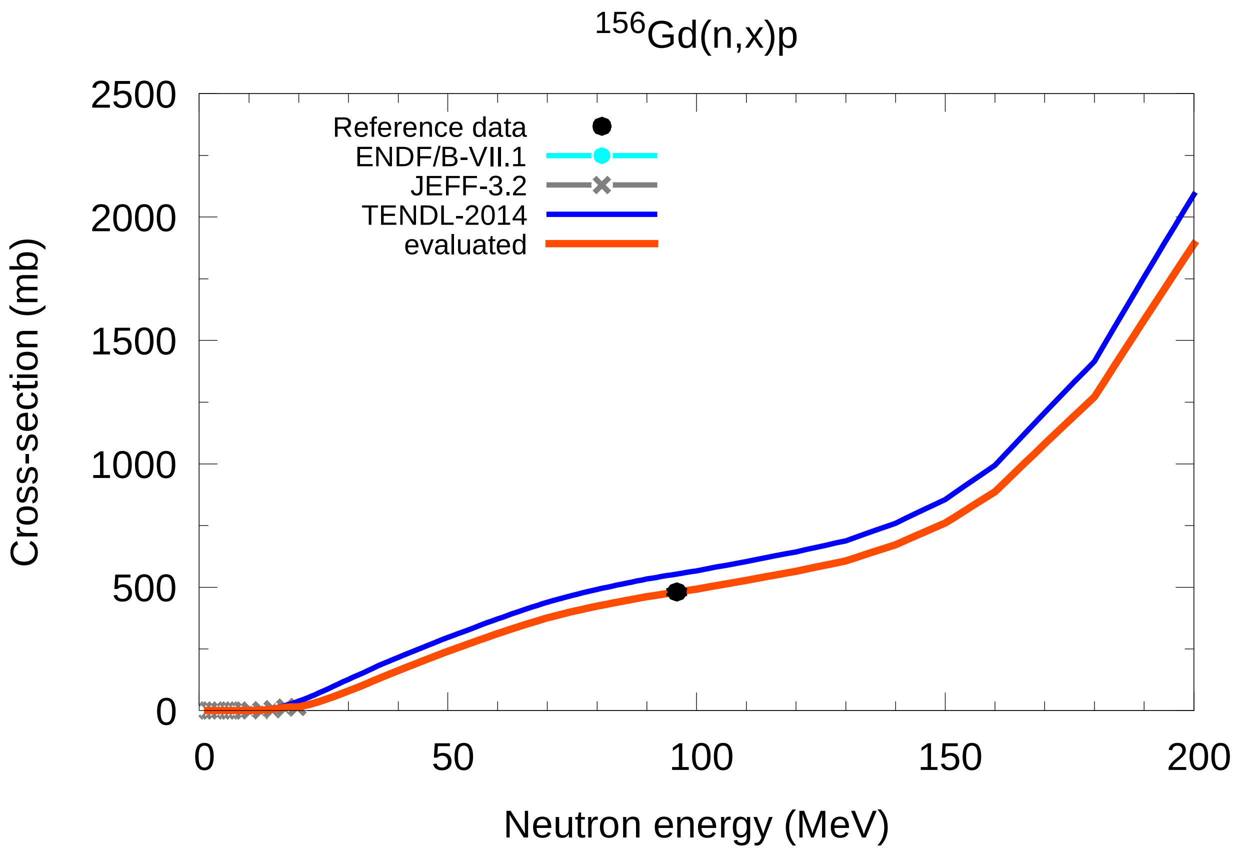
153Eu(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



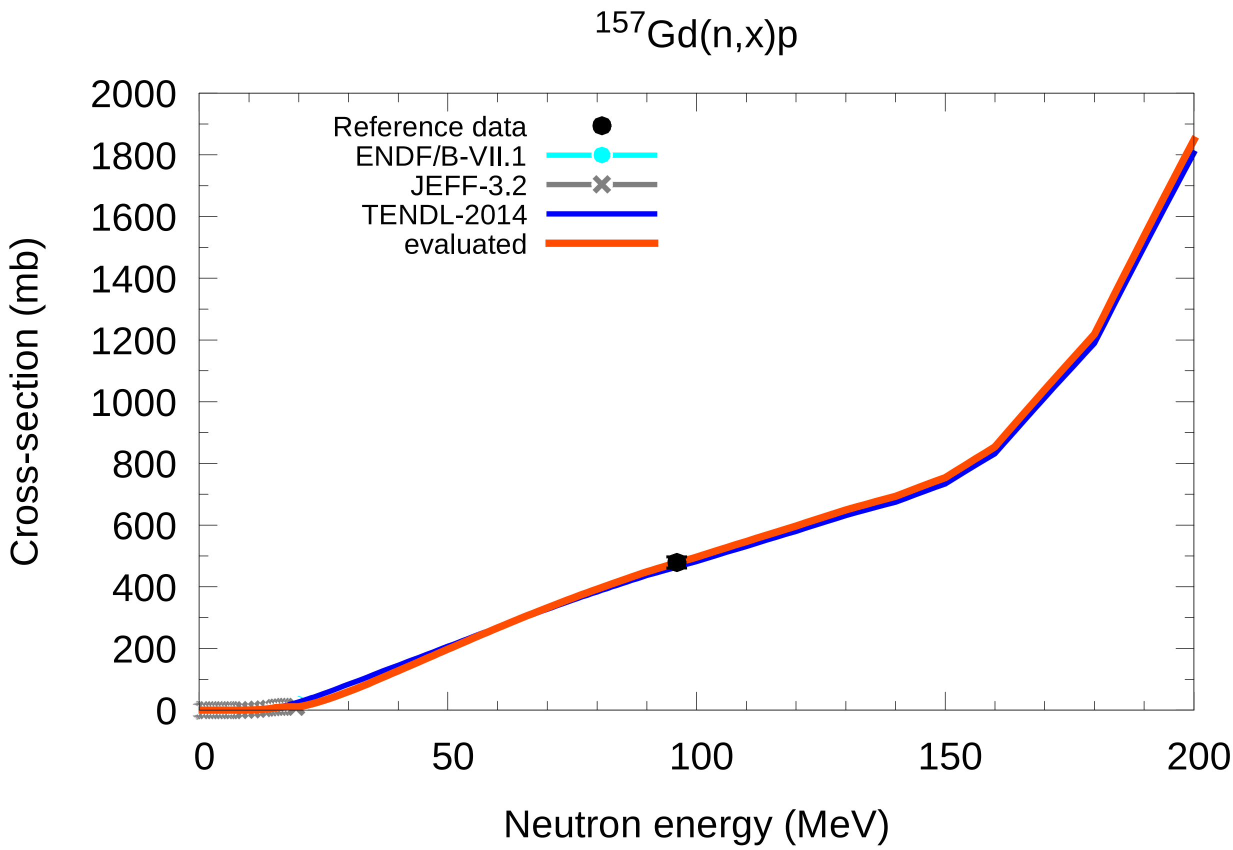
152Gd(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated


^{154}Gd(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
0
50
100
150
200

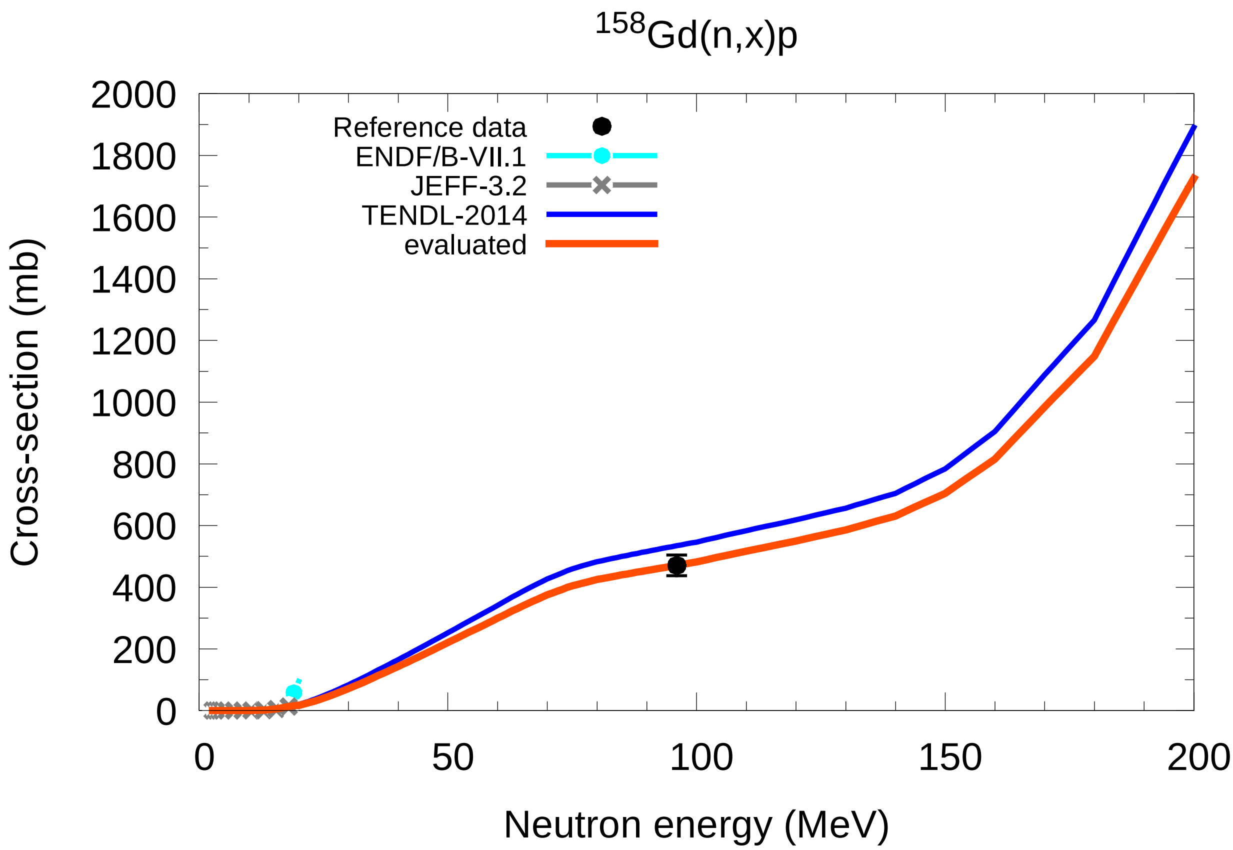

^{155}Gd(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



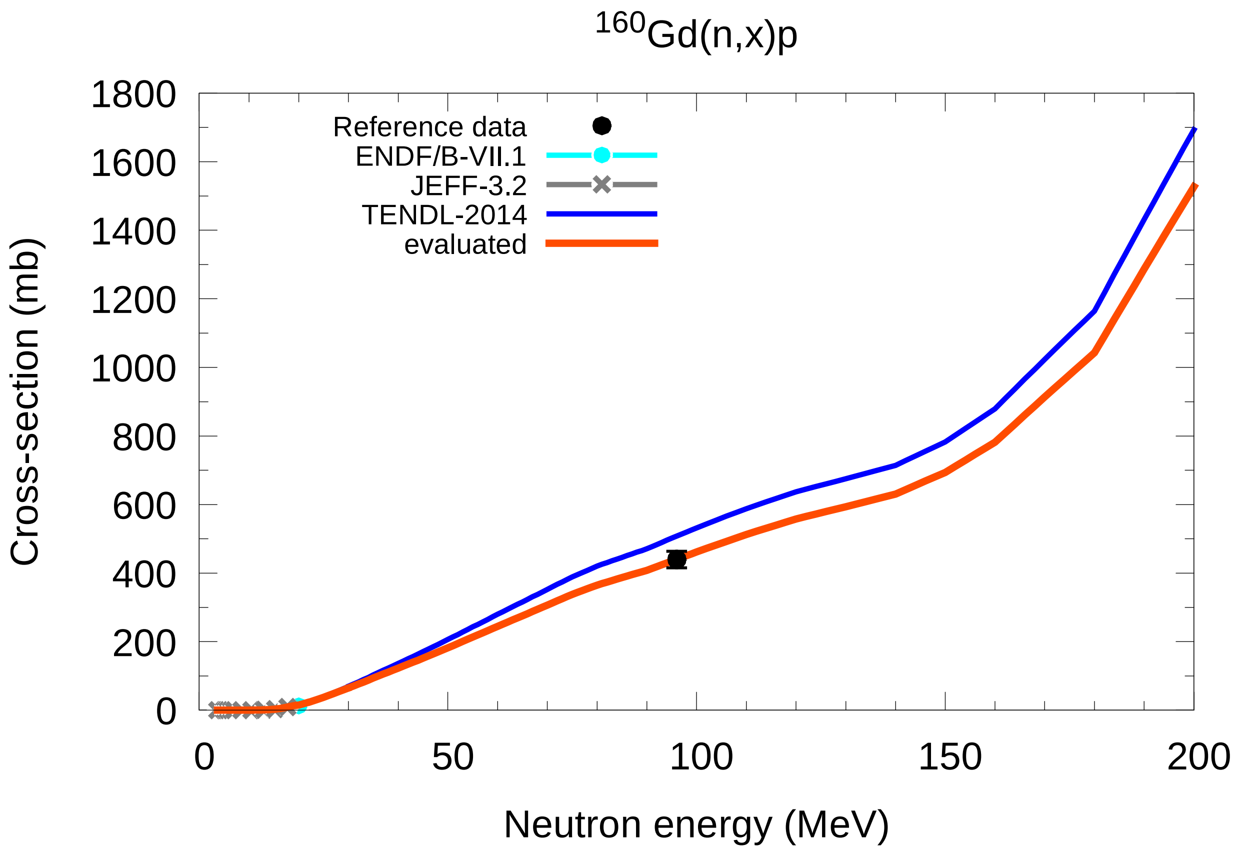
^{156}Gd(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



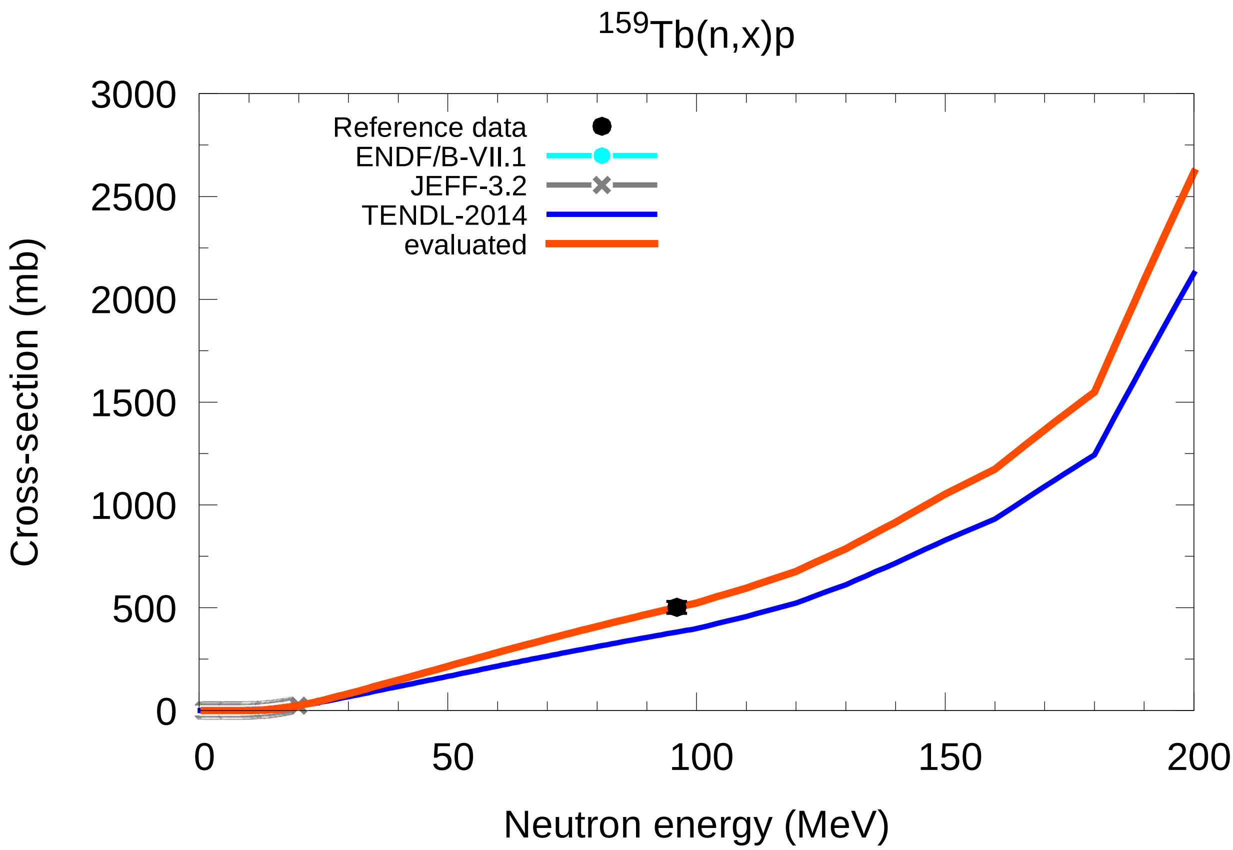
^{157}Gd(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0
50
100
150
200



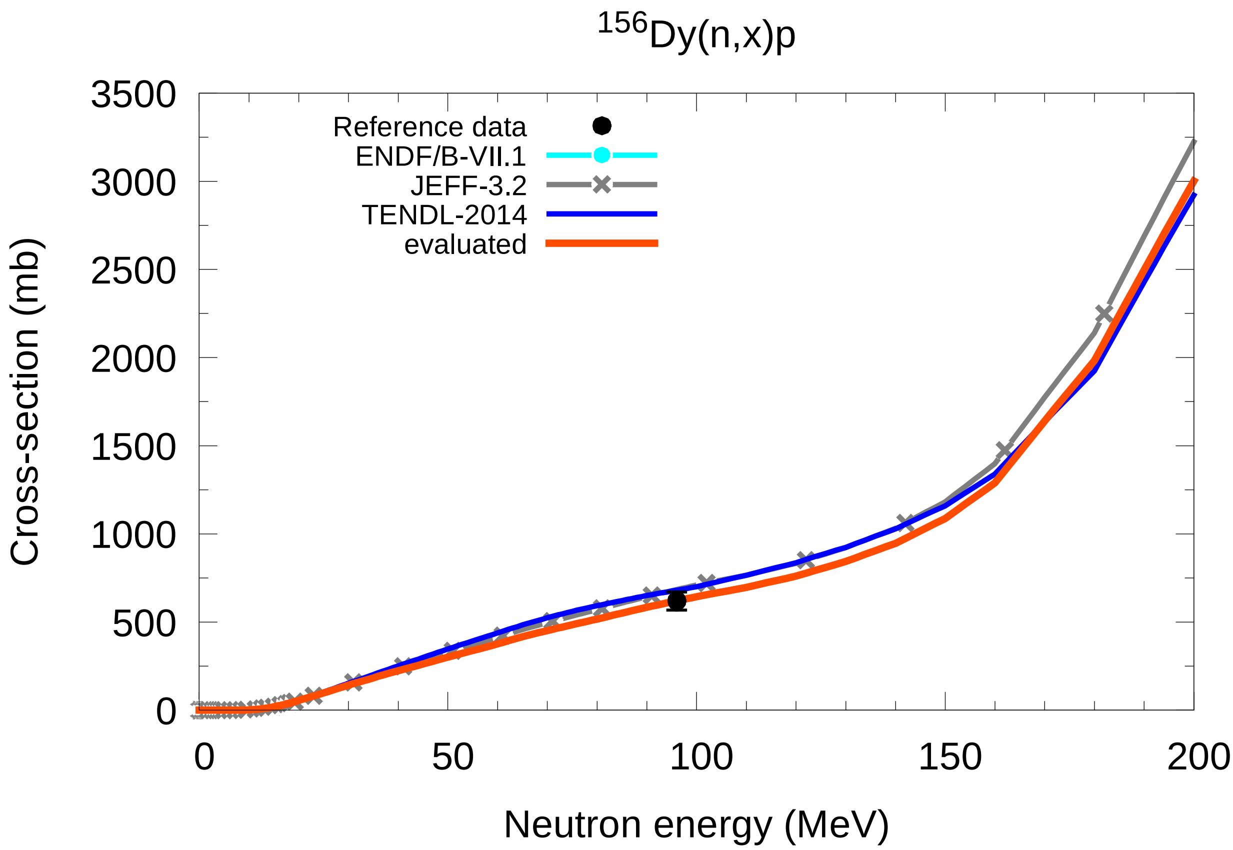
^{158}Gd(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0
50
100
150
200



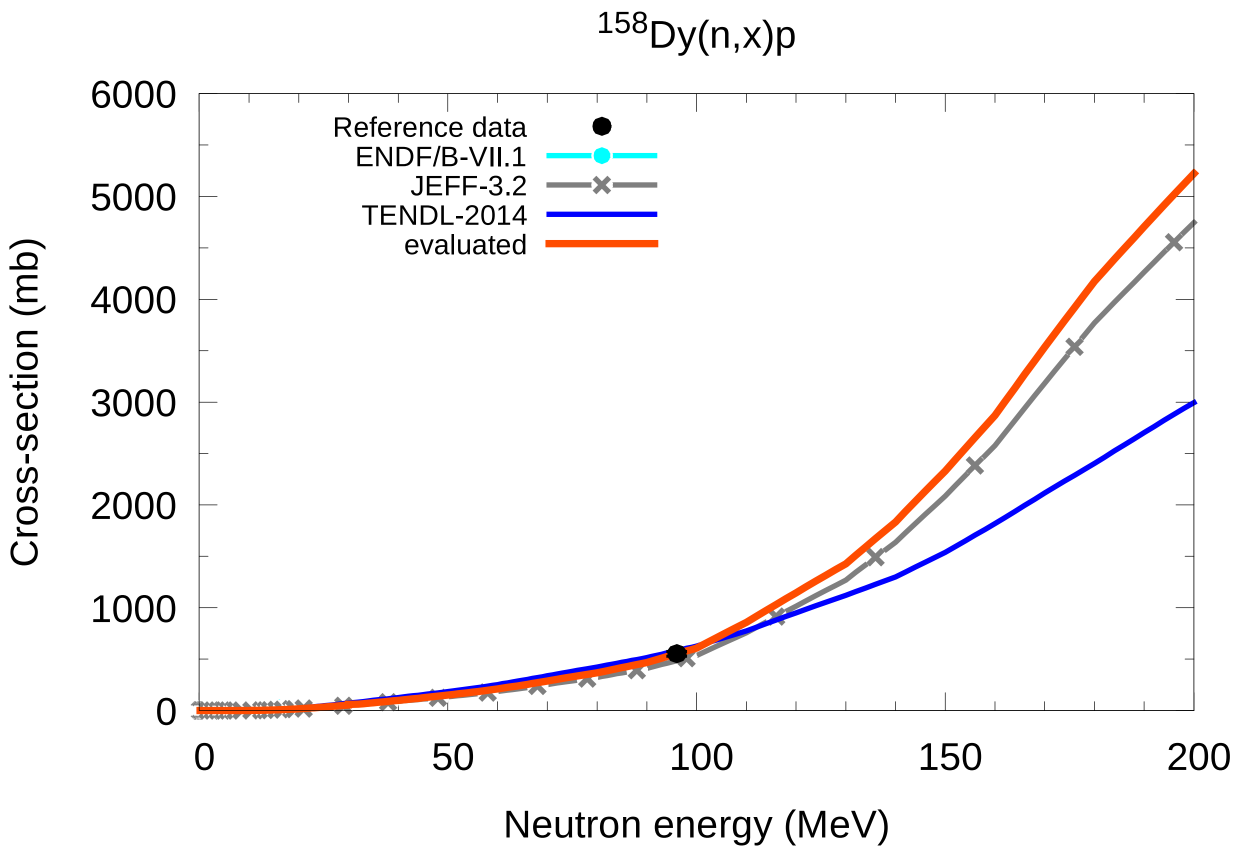
^{160}Gd(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
0
50
100
150
200



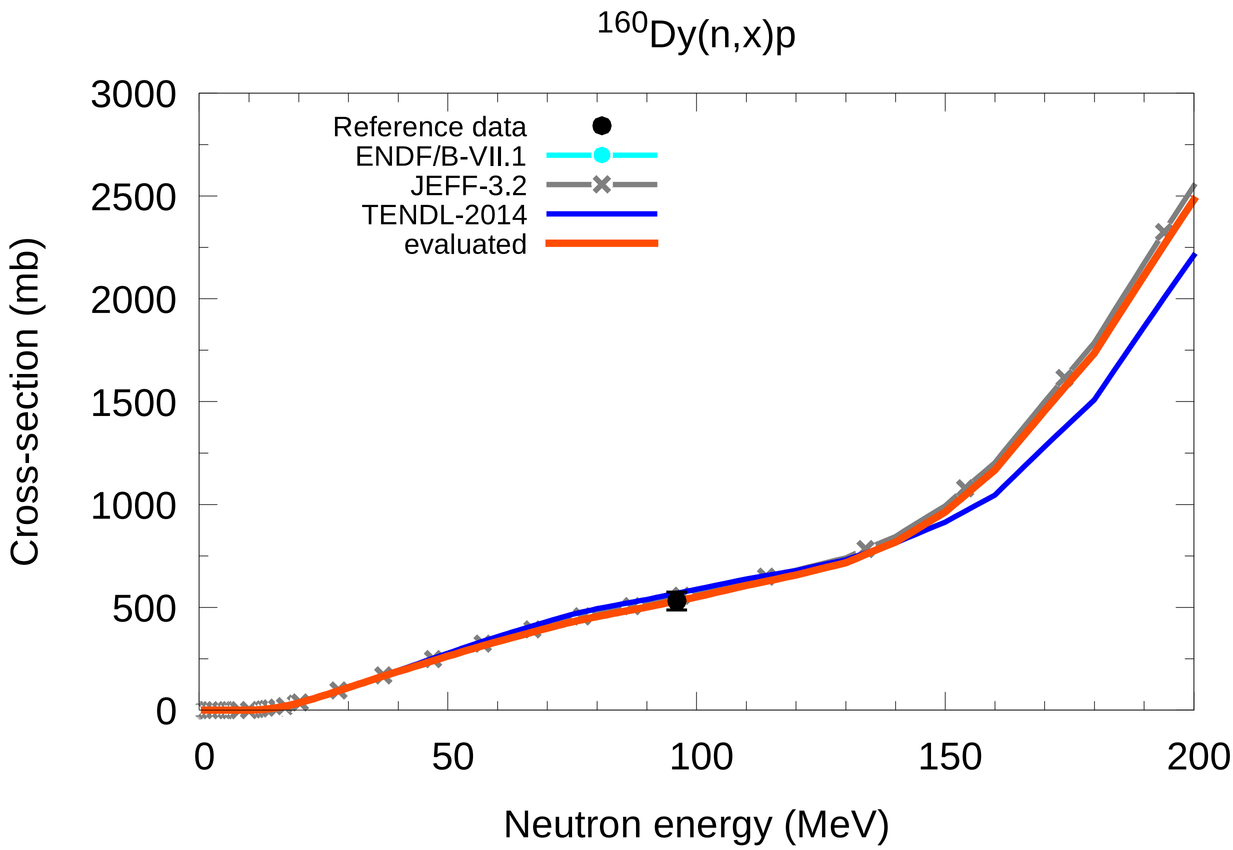
^{159}Tb(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
500
1000
1500
2000
2500
3000
0
50
100
150
200



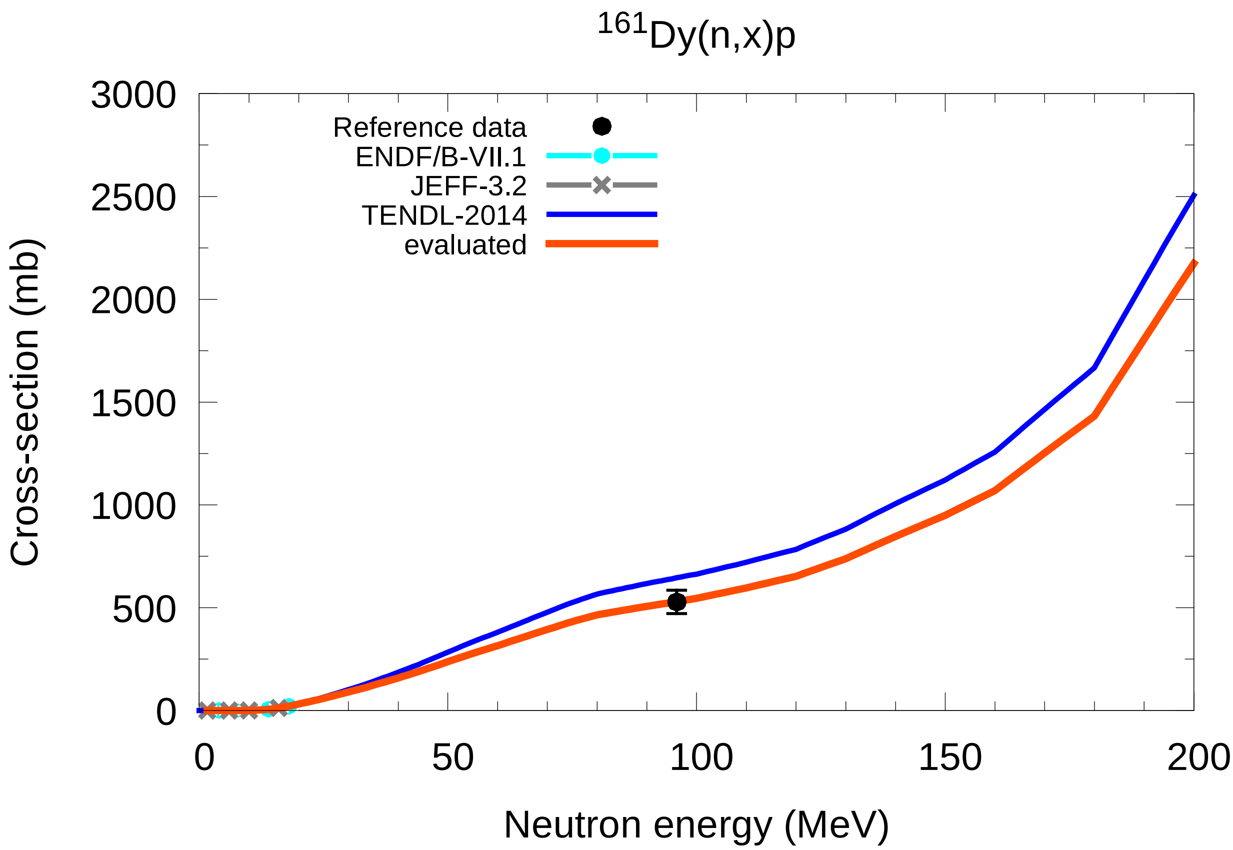
^{156}Dy(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
500
1000
1500
2000
2500
3000
3500
0
50
100
150
200



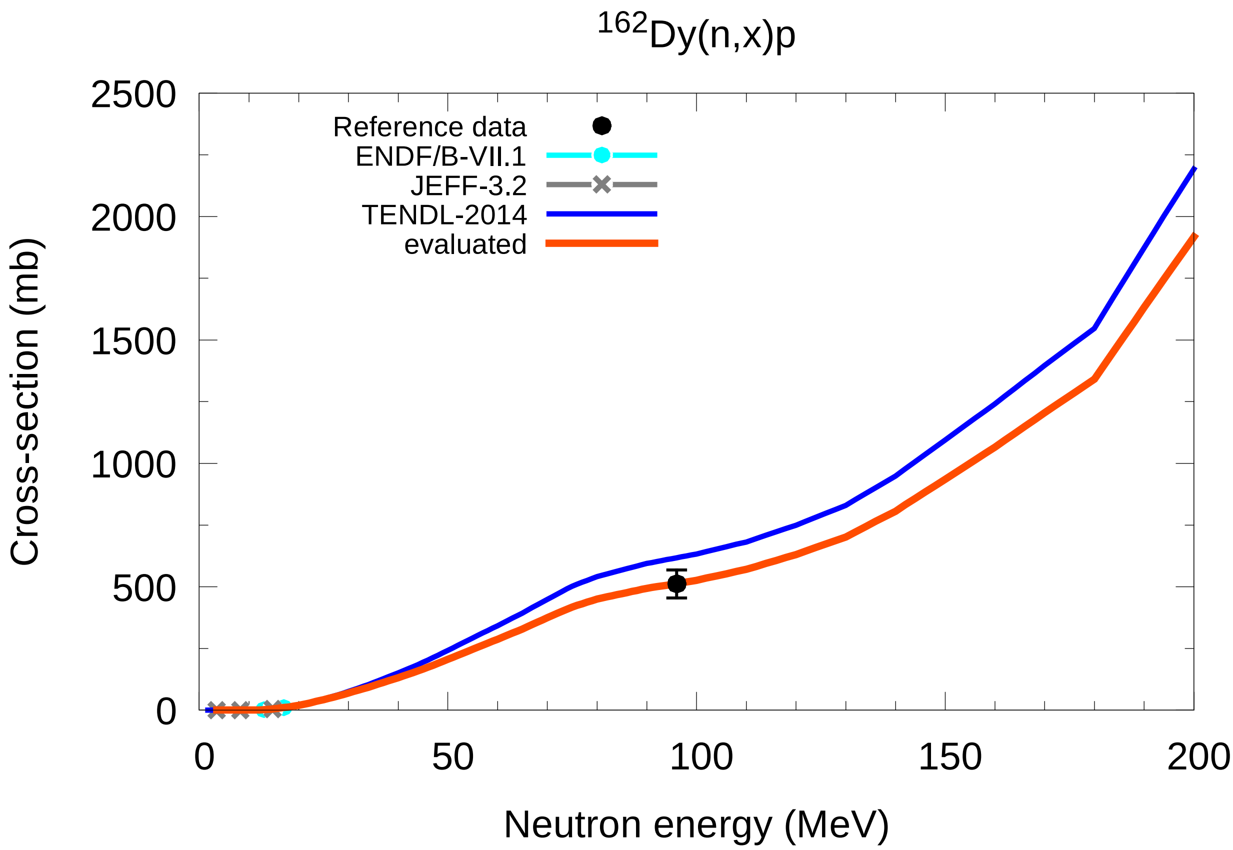
^{158}Dy(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
1000
2000
3000
4000
5000
6000
0
50
100
150
200



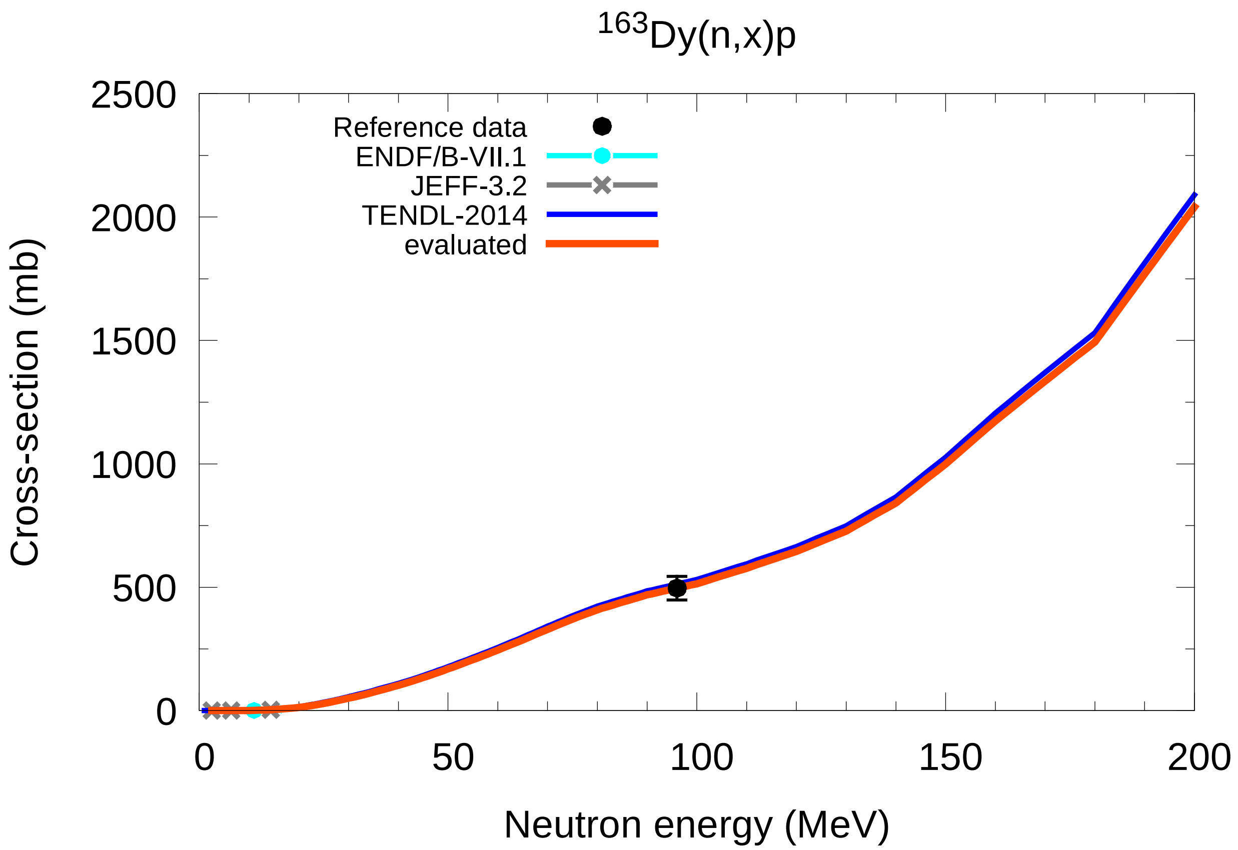
^{160}Dy(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
0
50
100
150
200



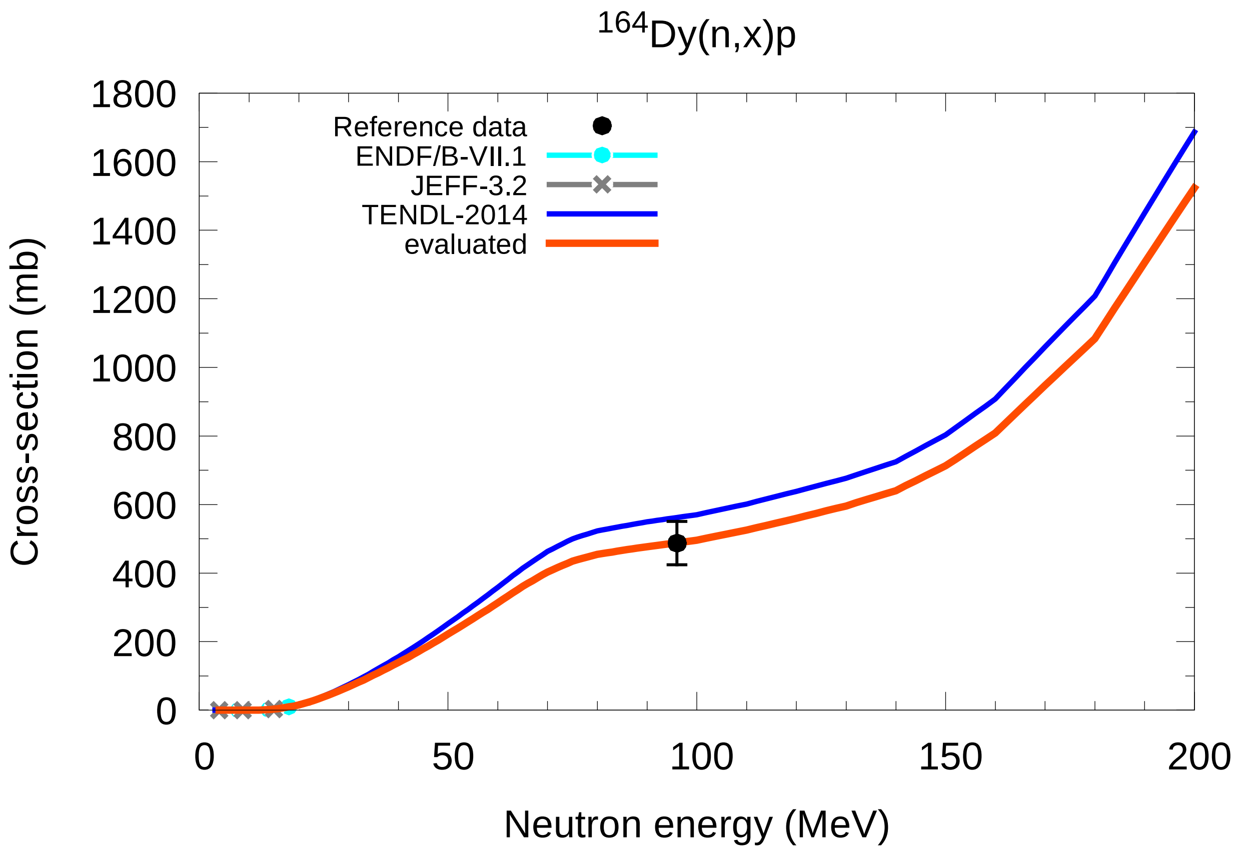
161Dy(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
0
50
100
150
200



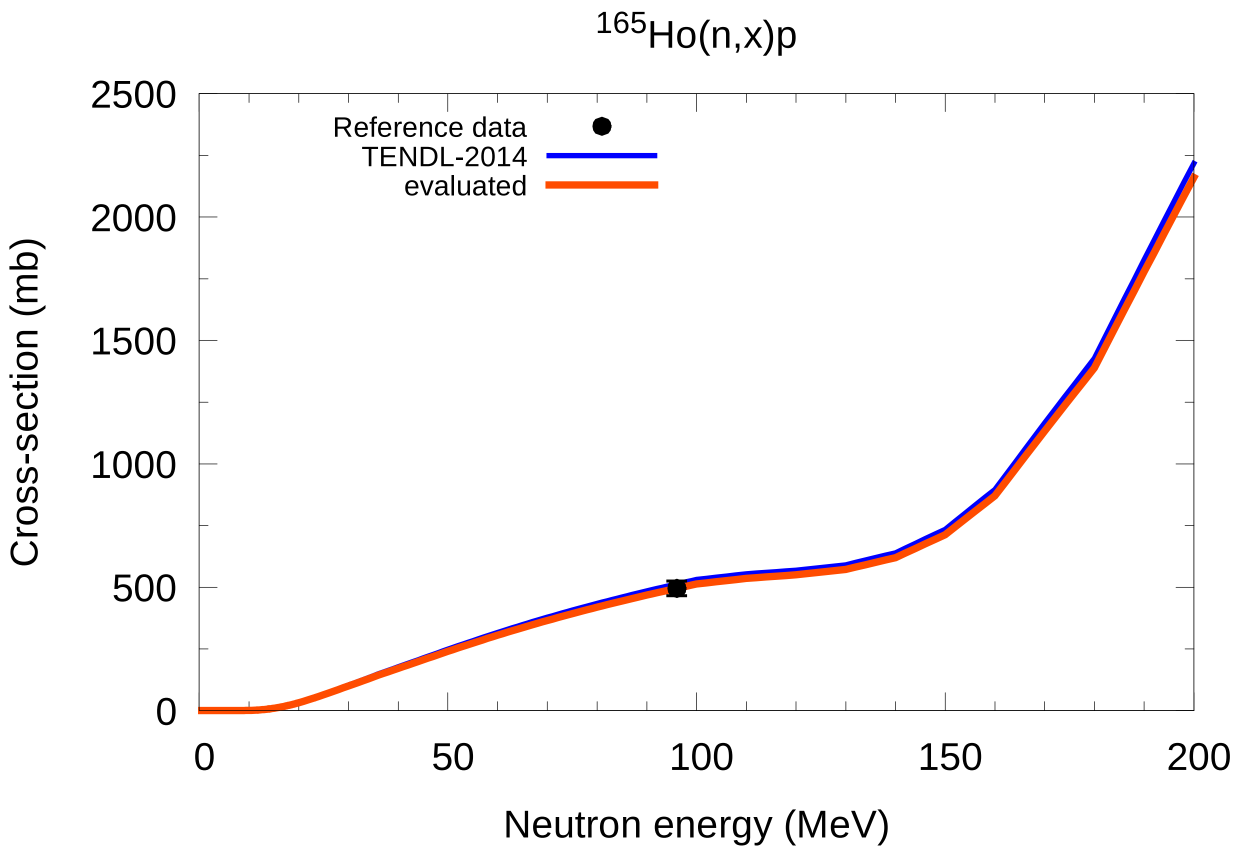
162Dy(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



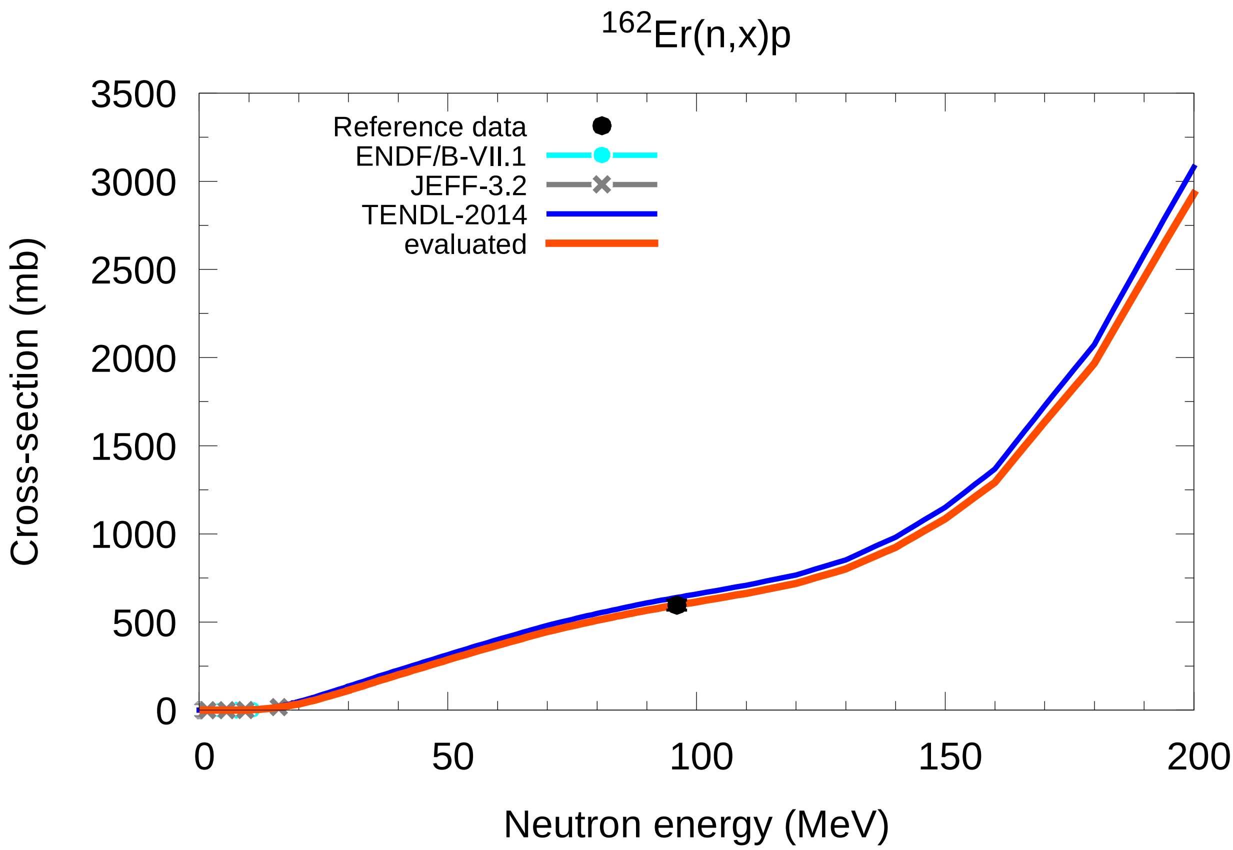
163Dy(n,x)p
2500
2000
1500
1000
500
0
0
50
100
150
200
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



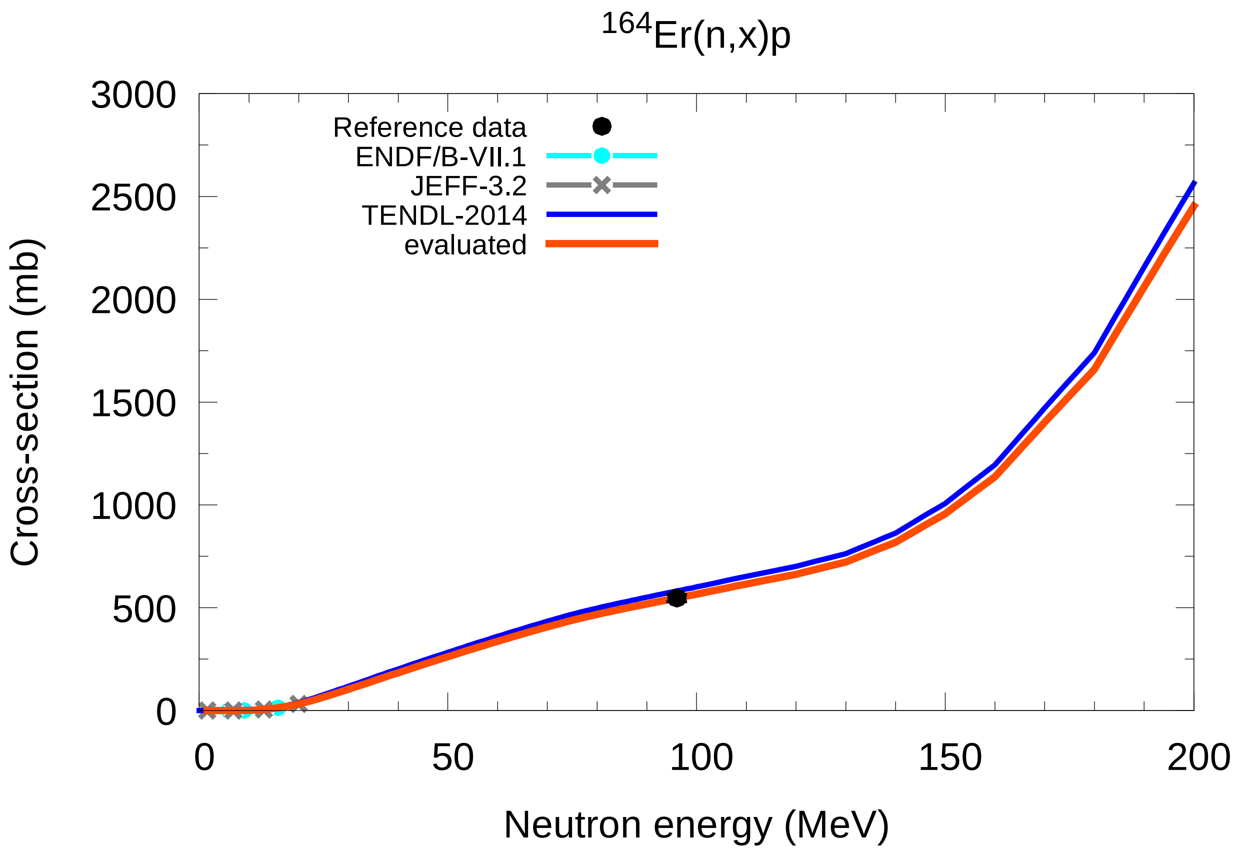
164Dy(n,x)p
1800
1600
1400
1200
1000
800
600
400
200
0
0
50
100
150
200
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



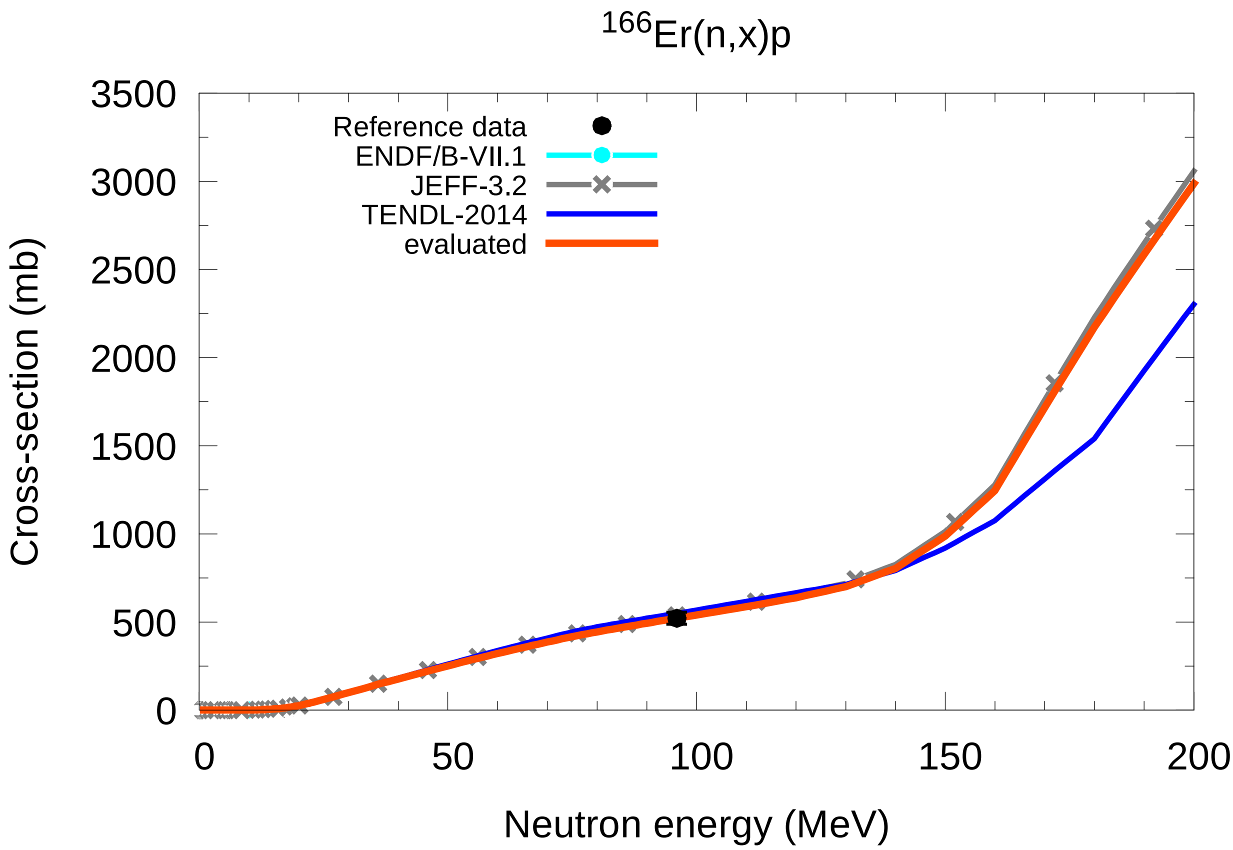
^{165}Ho(n,x)p
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



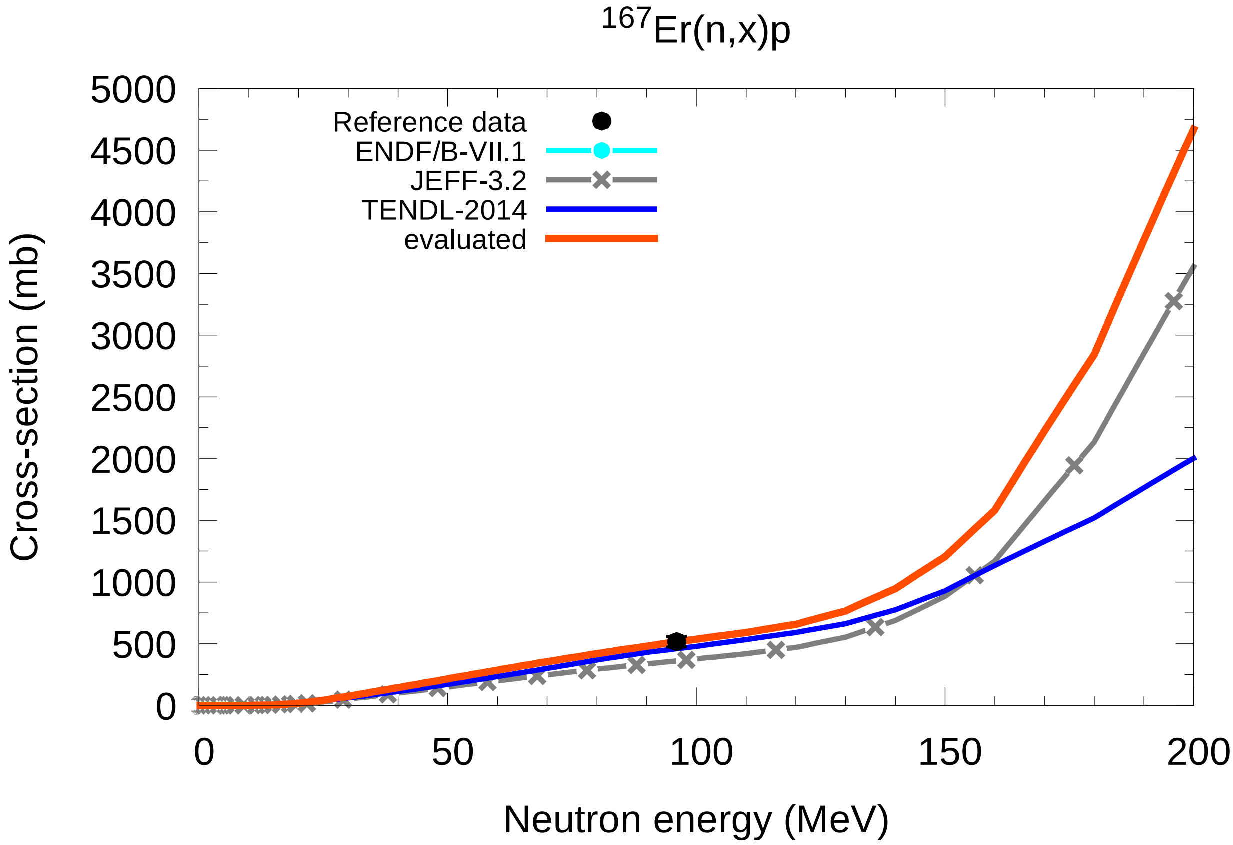
^{162}Er(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
3500
0
50
100
150
200



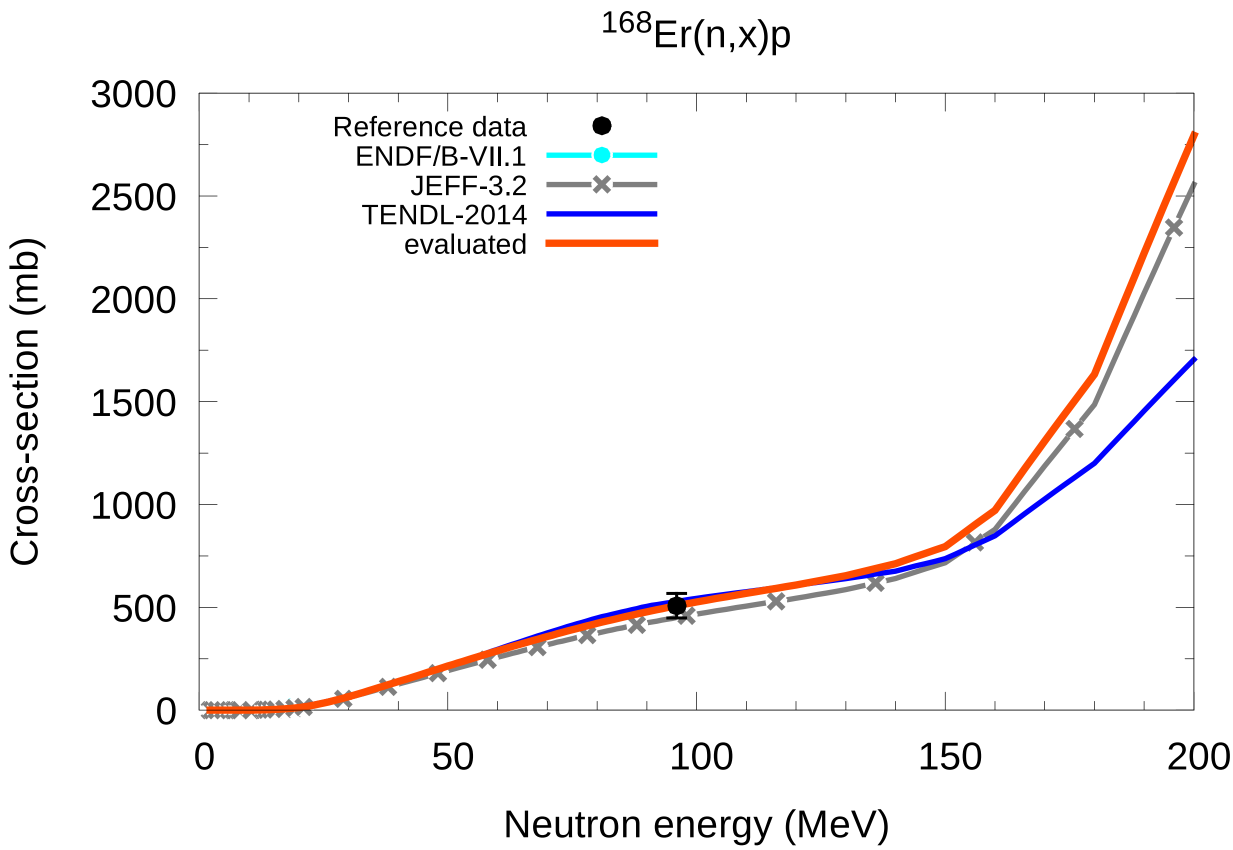
$^{164}Er(n,x)p$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
50
100
150
200



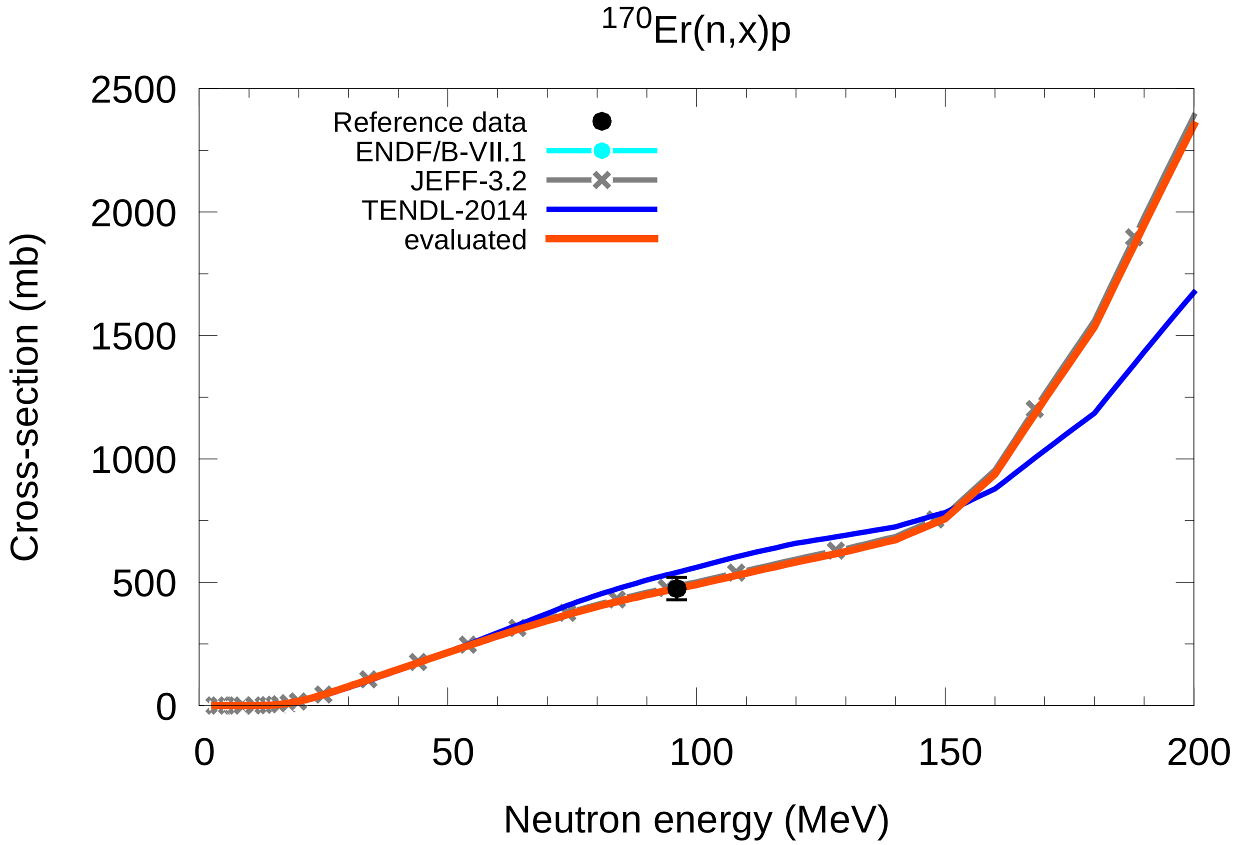
$^{166}Er(n,x)p$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
3500
50
100
150
200



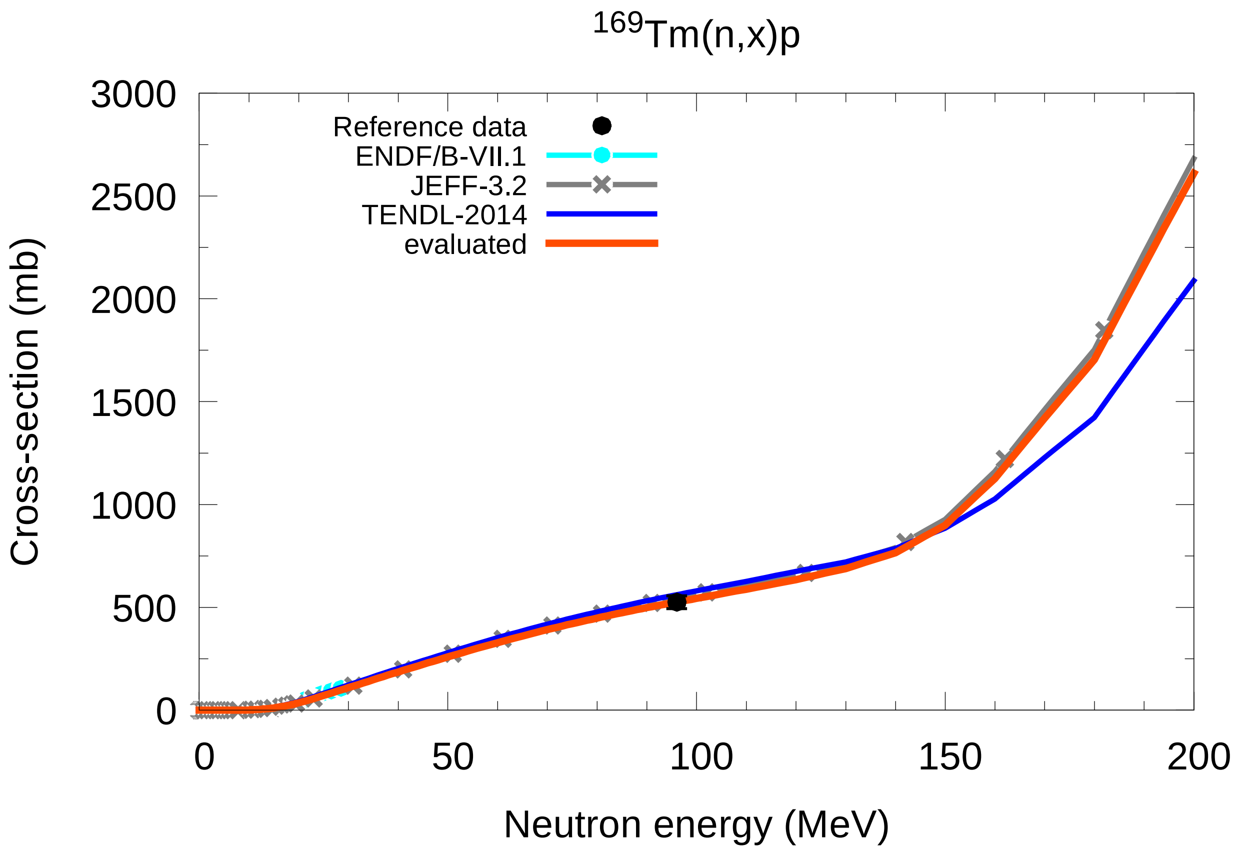
^{167}Er(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
0
50
100
150
200



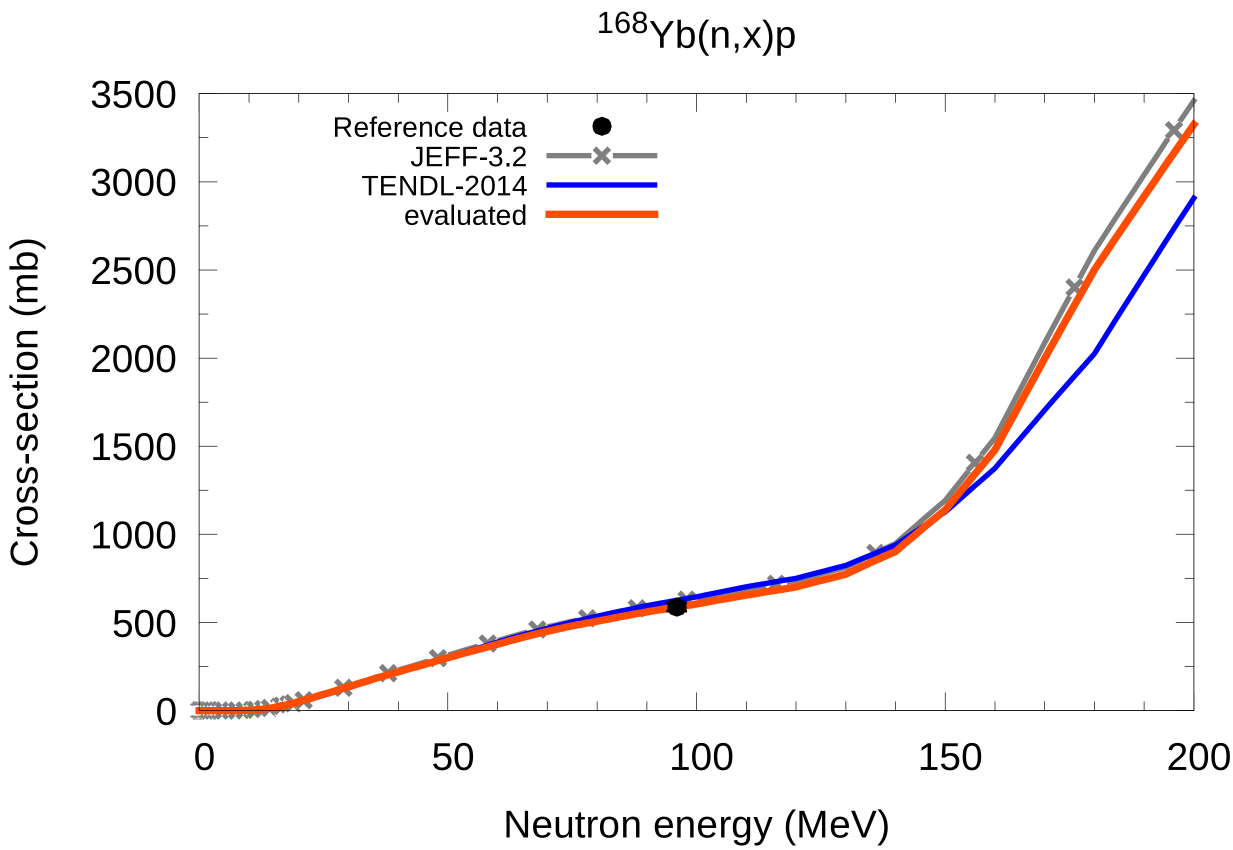
^{168}Er(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
0
50
100
150
200



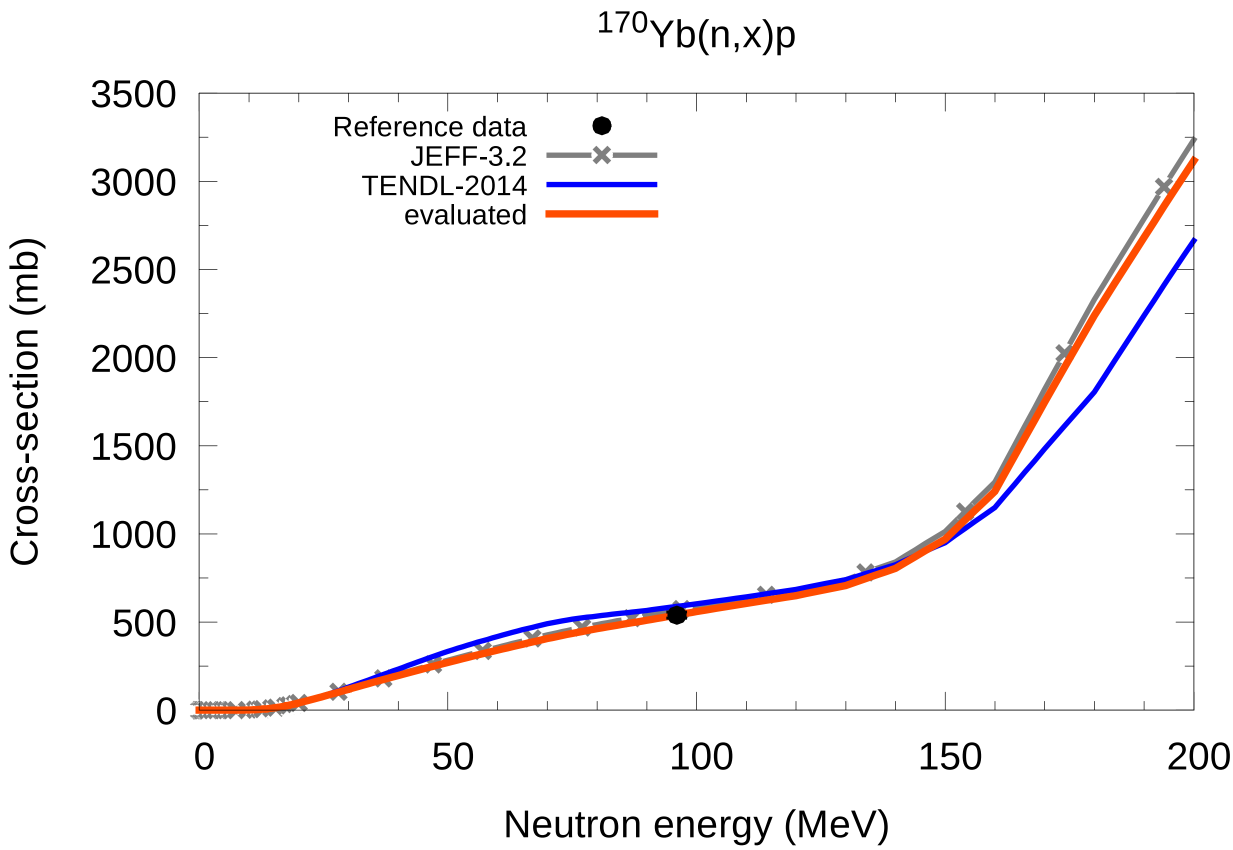
^{170}Er(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



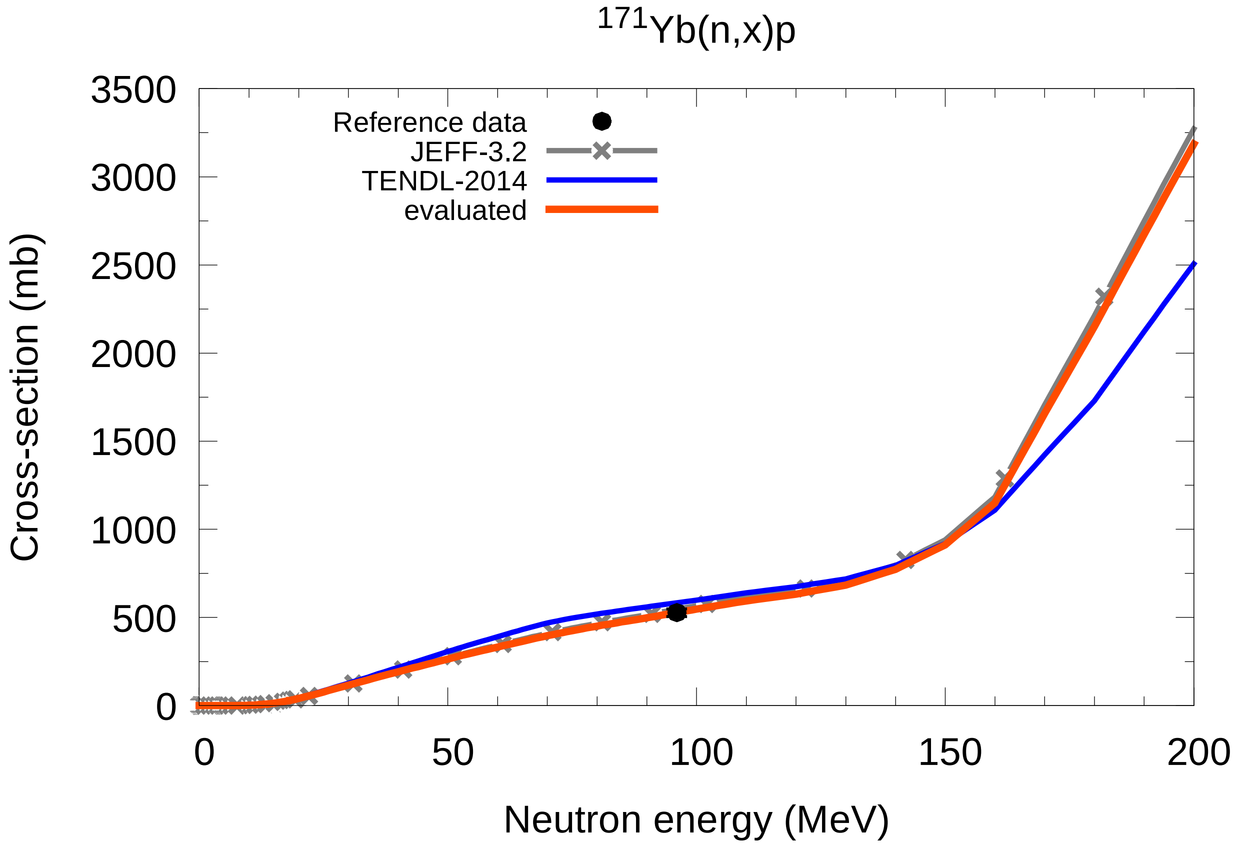
^{169}Tm(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
0
50
100
150
200



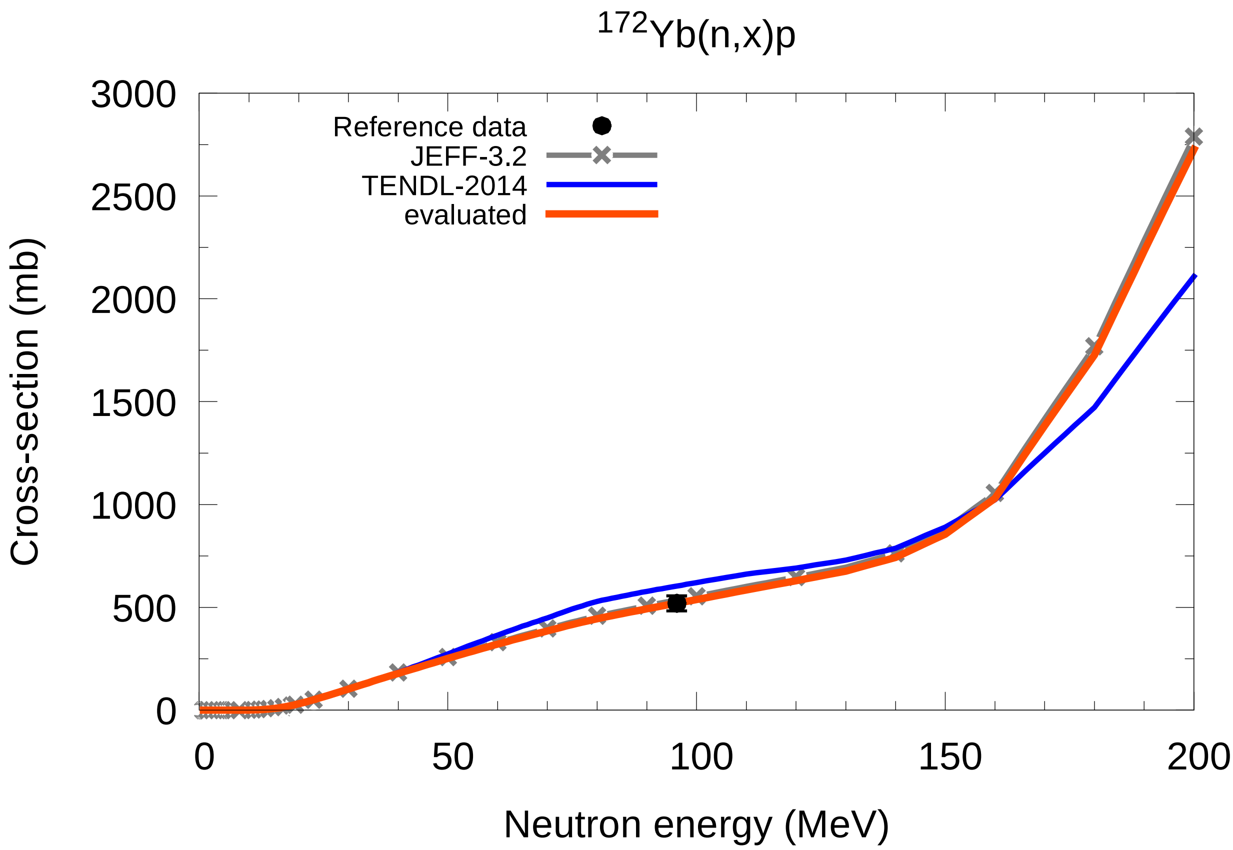
^{168}Yb(n,x)p
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
3500
0
50
100
150
200



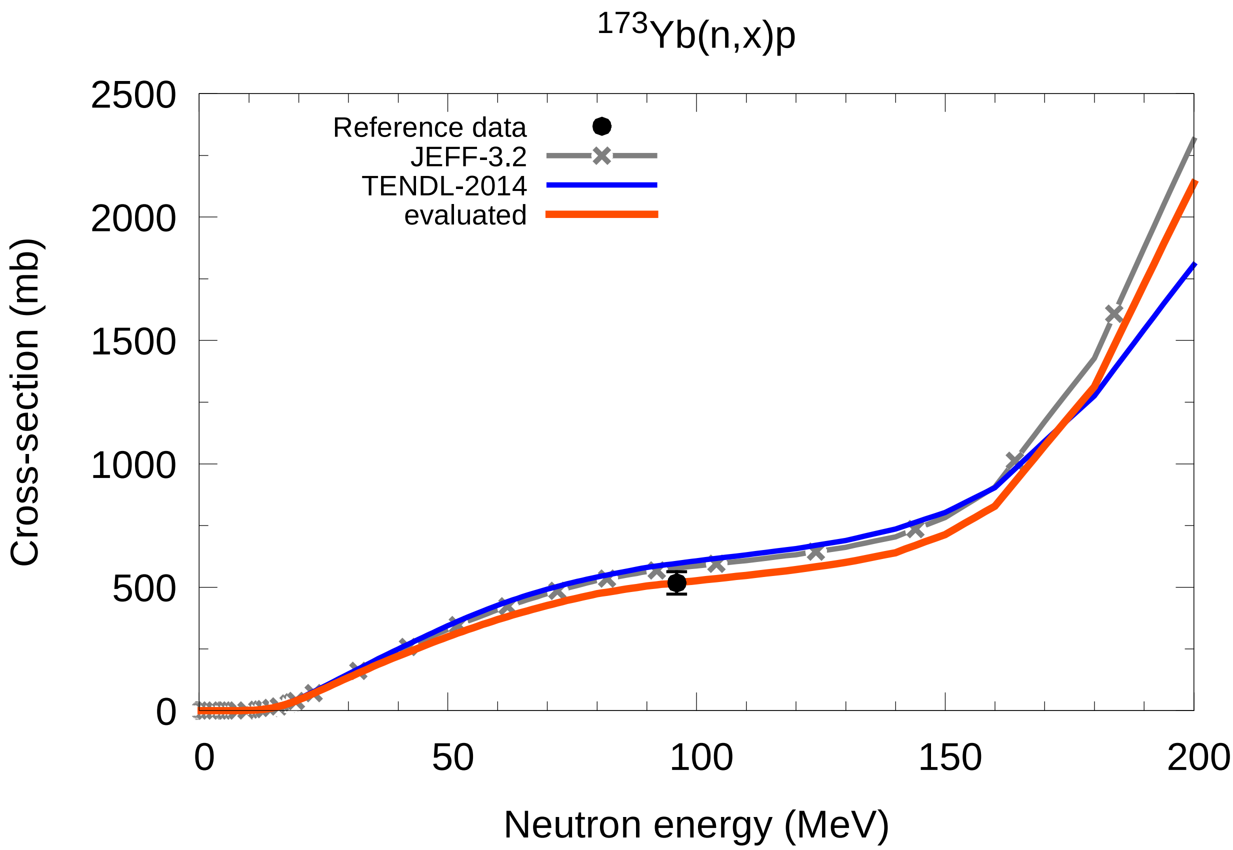
^{170}Yb(n,x)p
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
3500
0
50
100
150
200



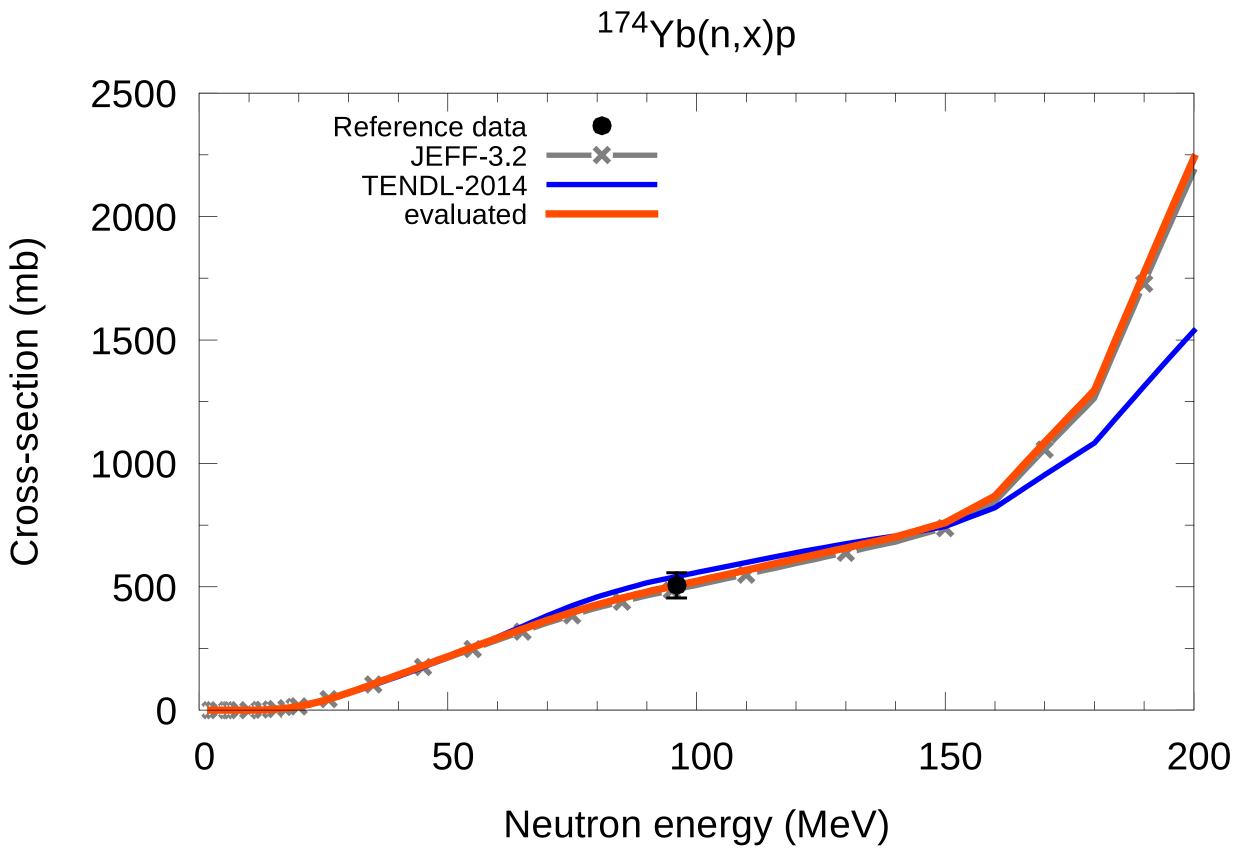
^{171}Yb(n,x)p
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
3500
0
50
100
150
200



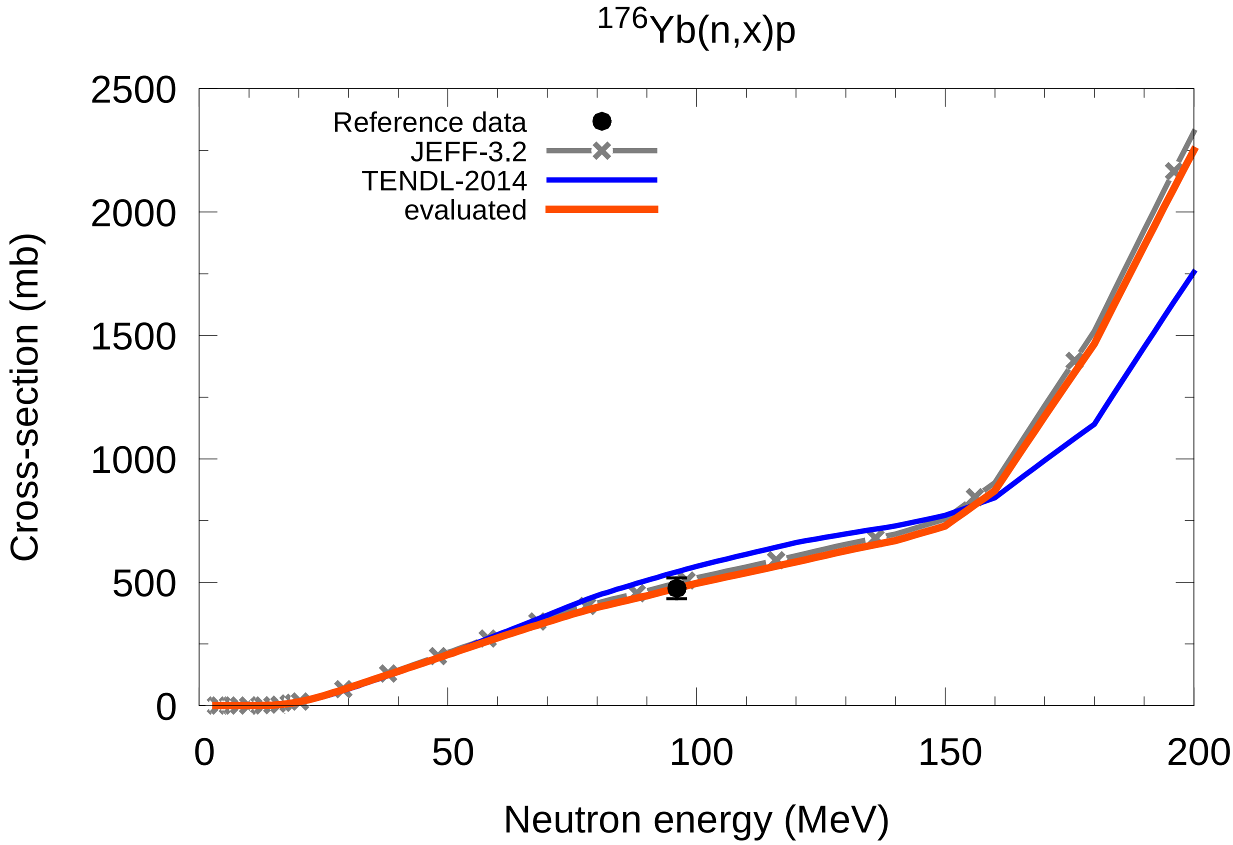
^{172}Yb(n,x)p
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
0
50
100
150
200

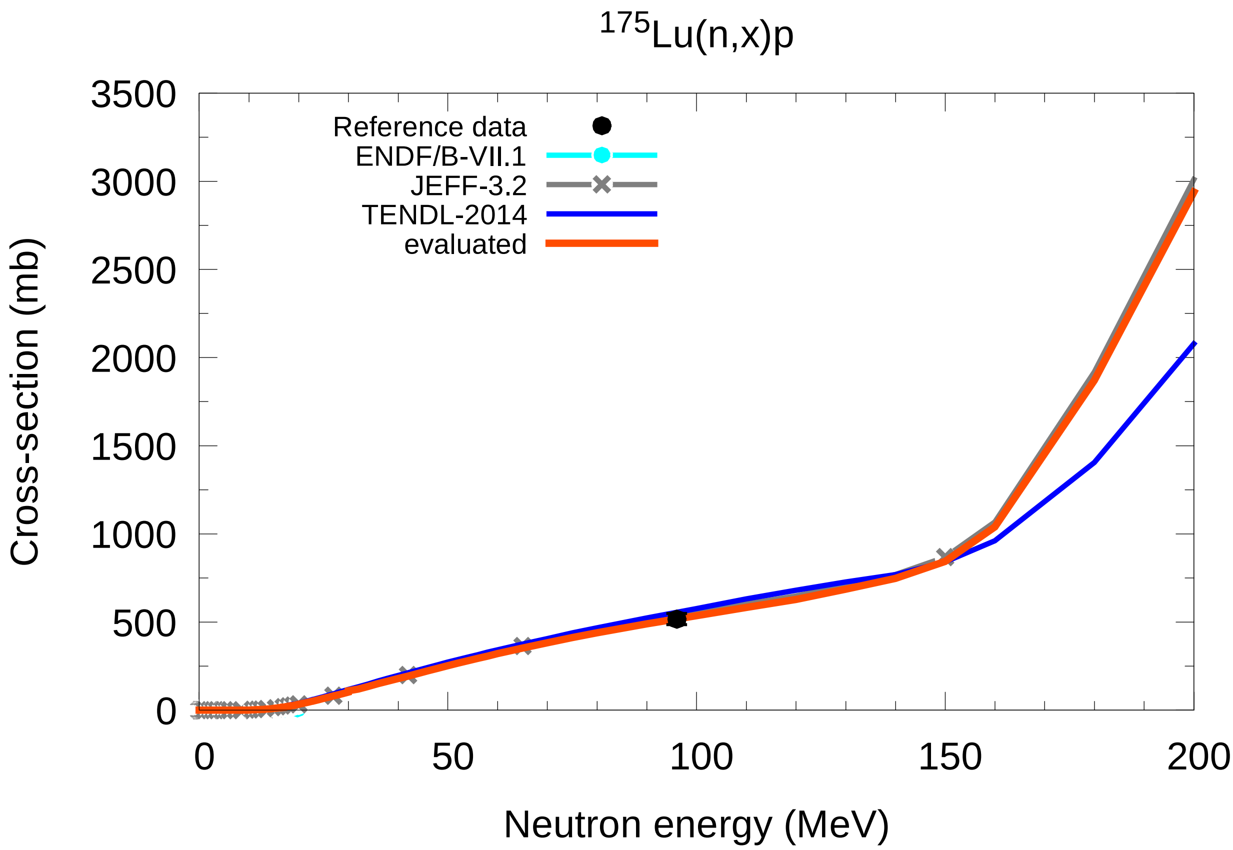


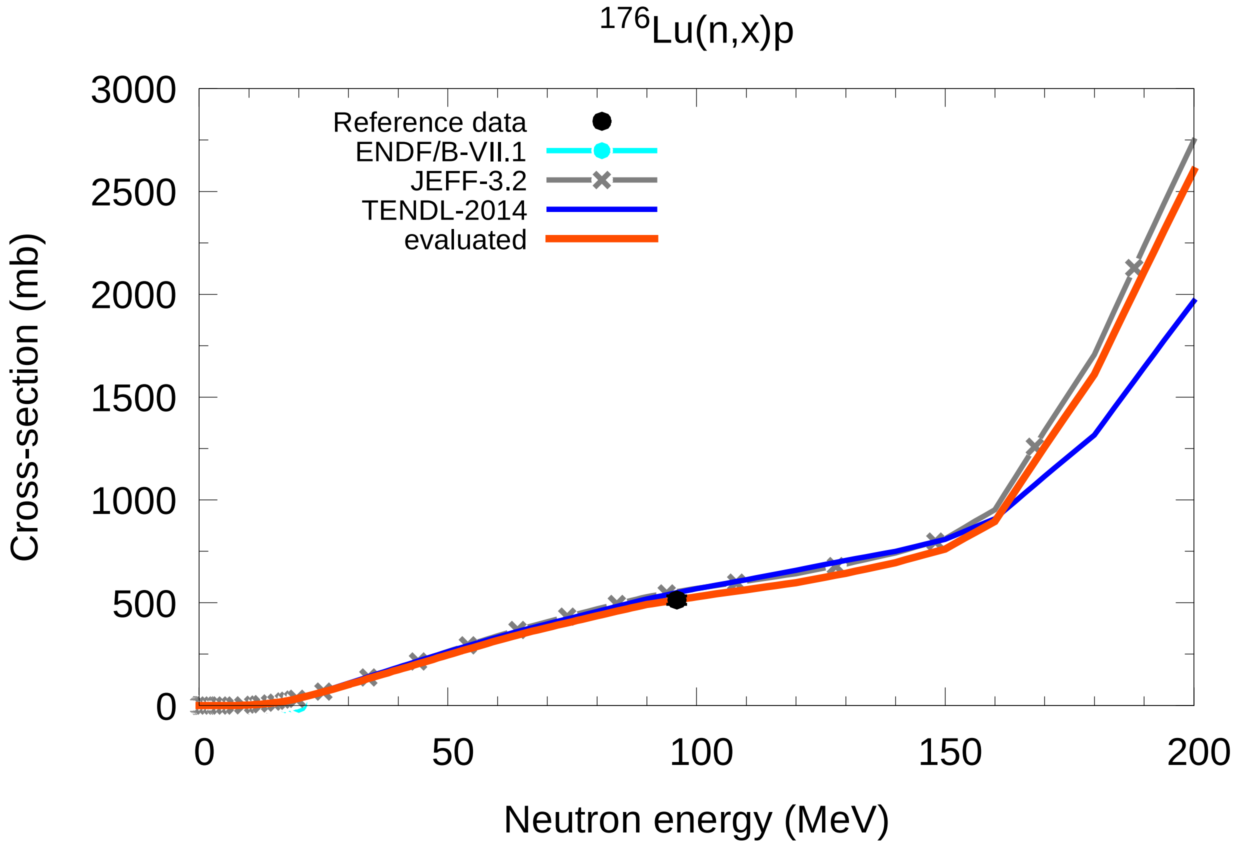
^{173}Yb(n,x)p
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
0
500
1000
1500
2000
2500
0
50
100
150
200
Neutron energy (MeV)



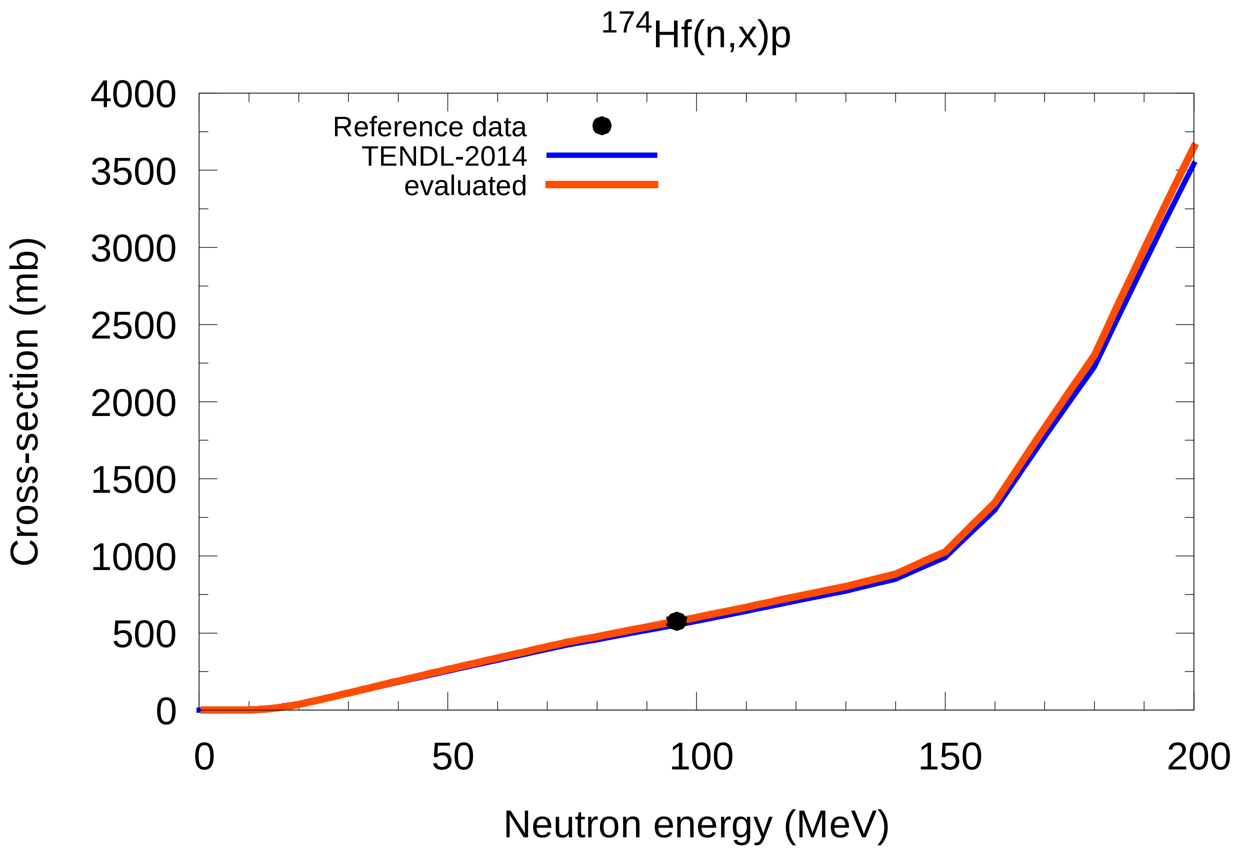
^{174}Yb(n,x)p
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
0
500
1000
1500
2000
2500
0
50
100
150
200
Neutron energy (MeV)


^{176}Yb(n,x)p
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200

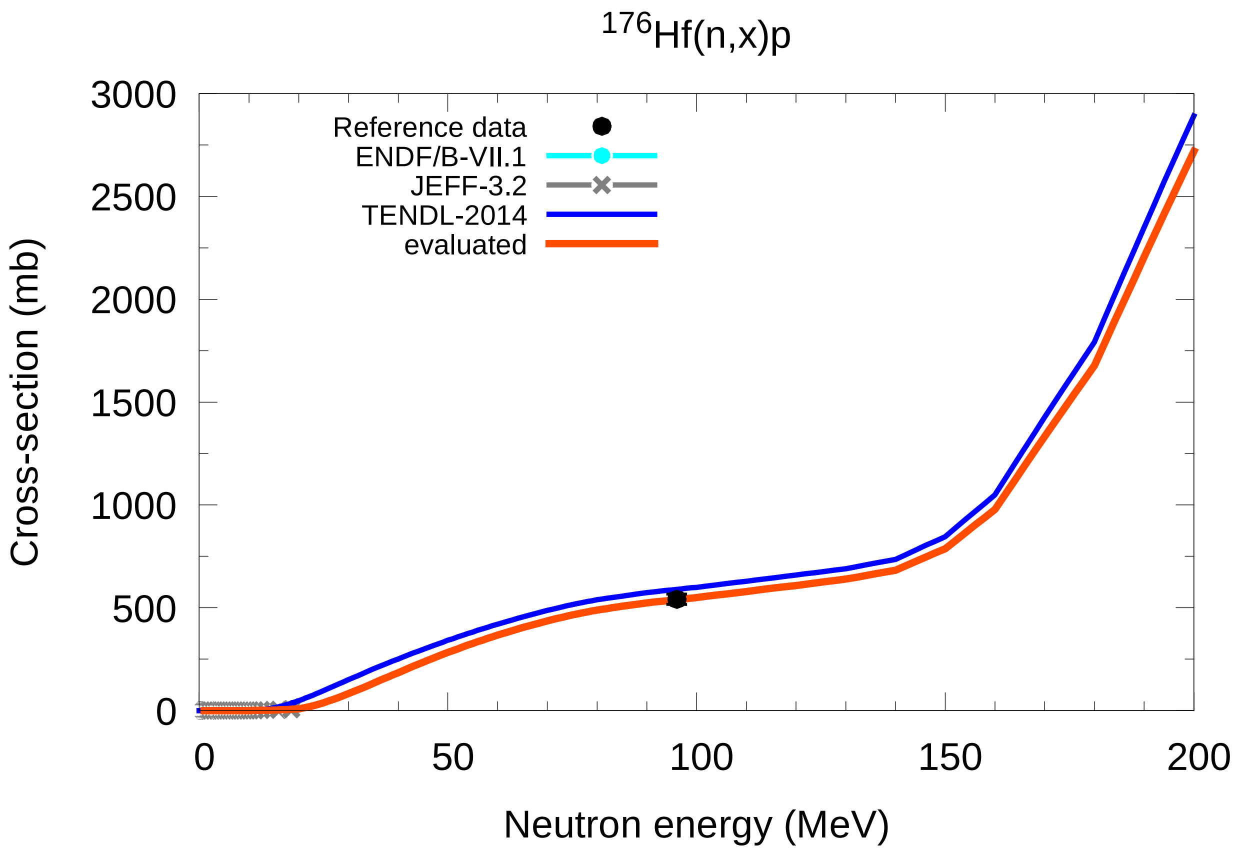

^{175}Lu(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
3500
0
50
100
150
200



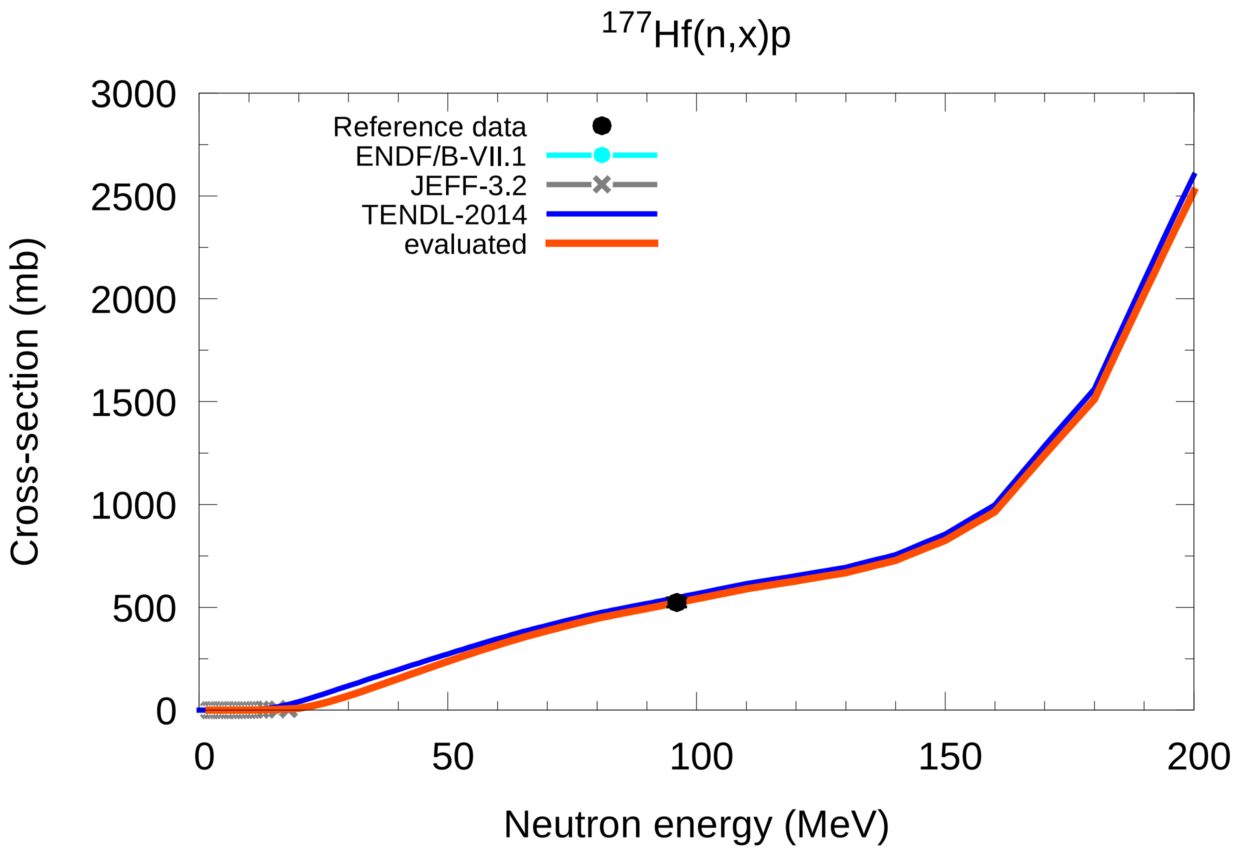
^{176}Lu(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
0
50
100
150
200



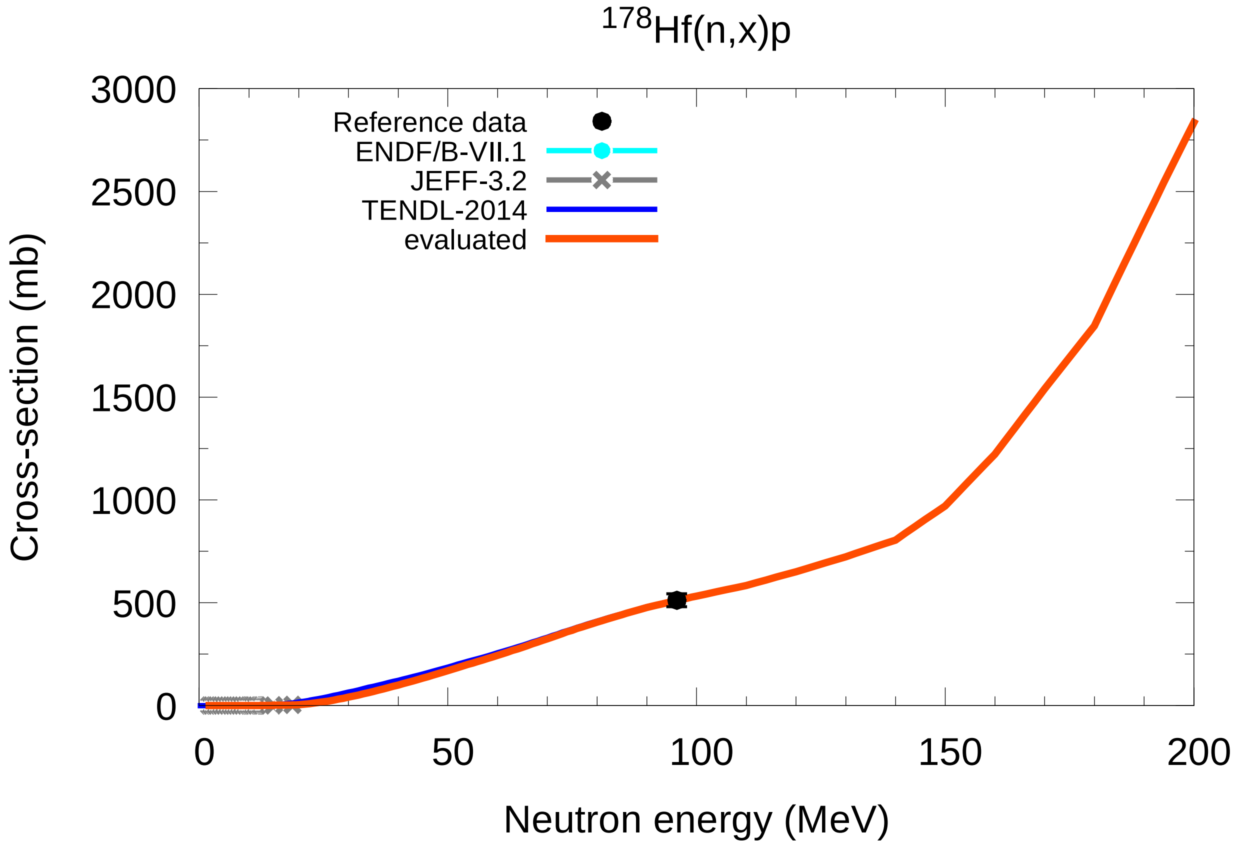
^{174}Hf(n,x)p
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
3500
4000
0
50
100
150
200



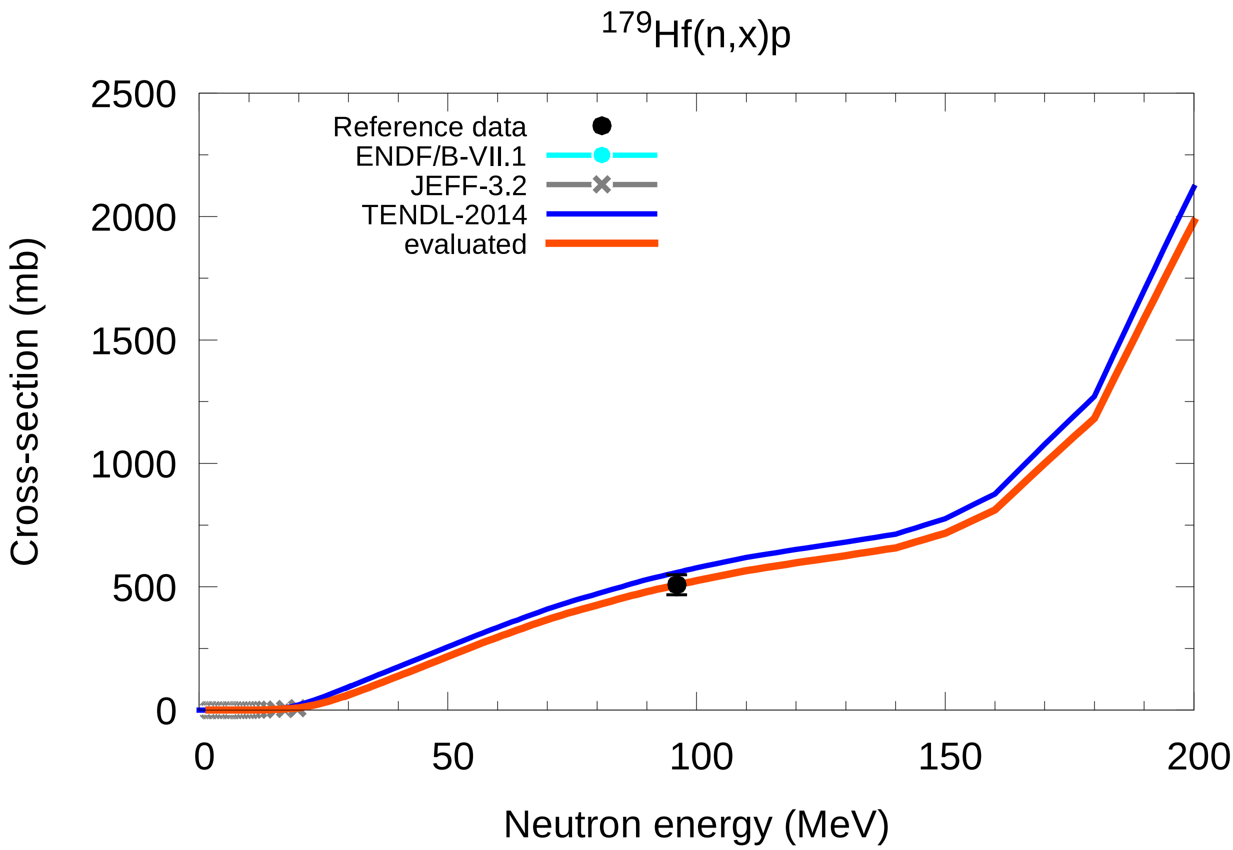
^{176}Hf(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
0
50
100
150
200



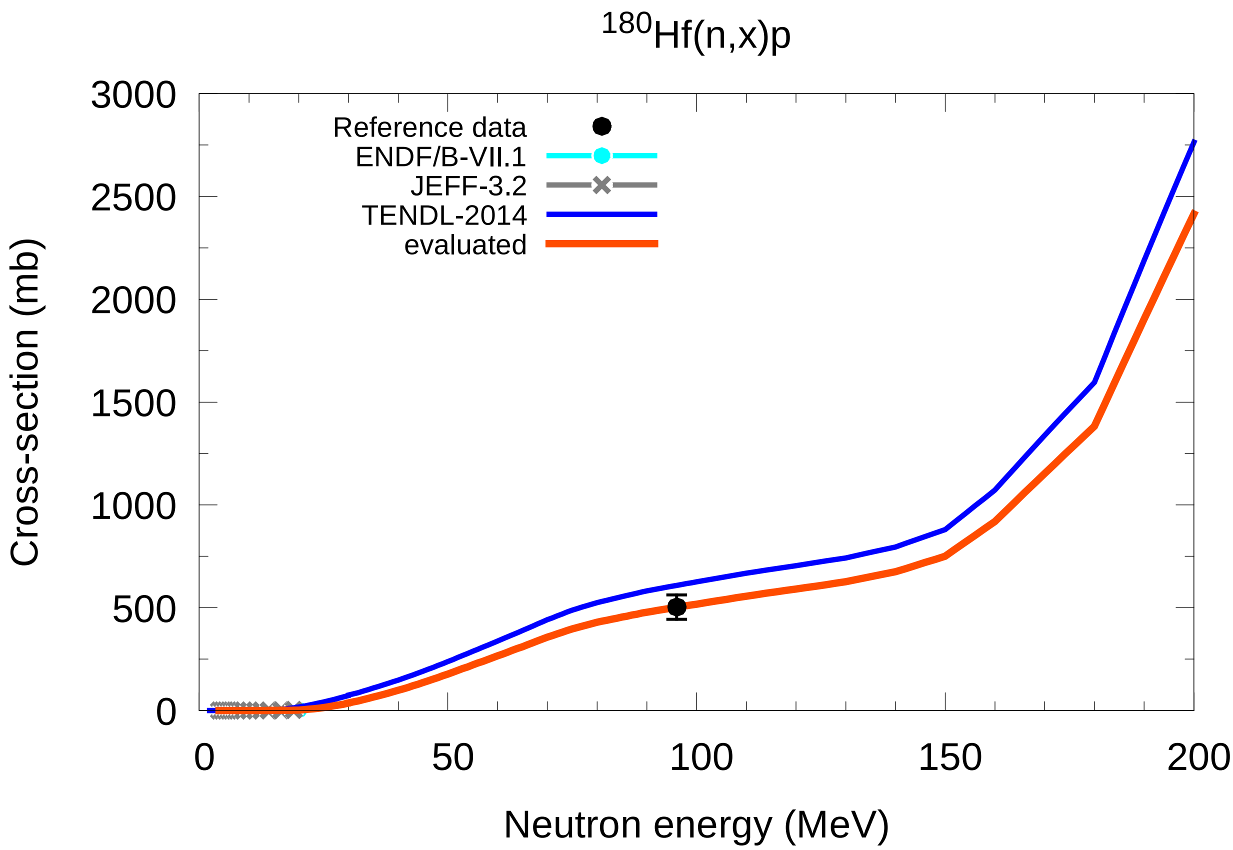
^{177}Hf(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
0
50
100
150
200



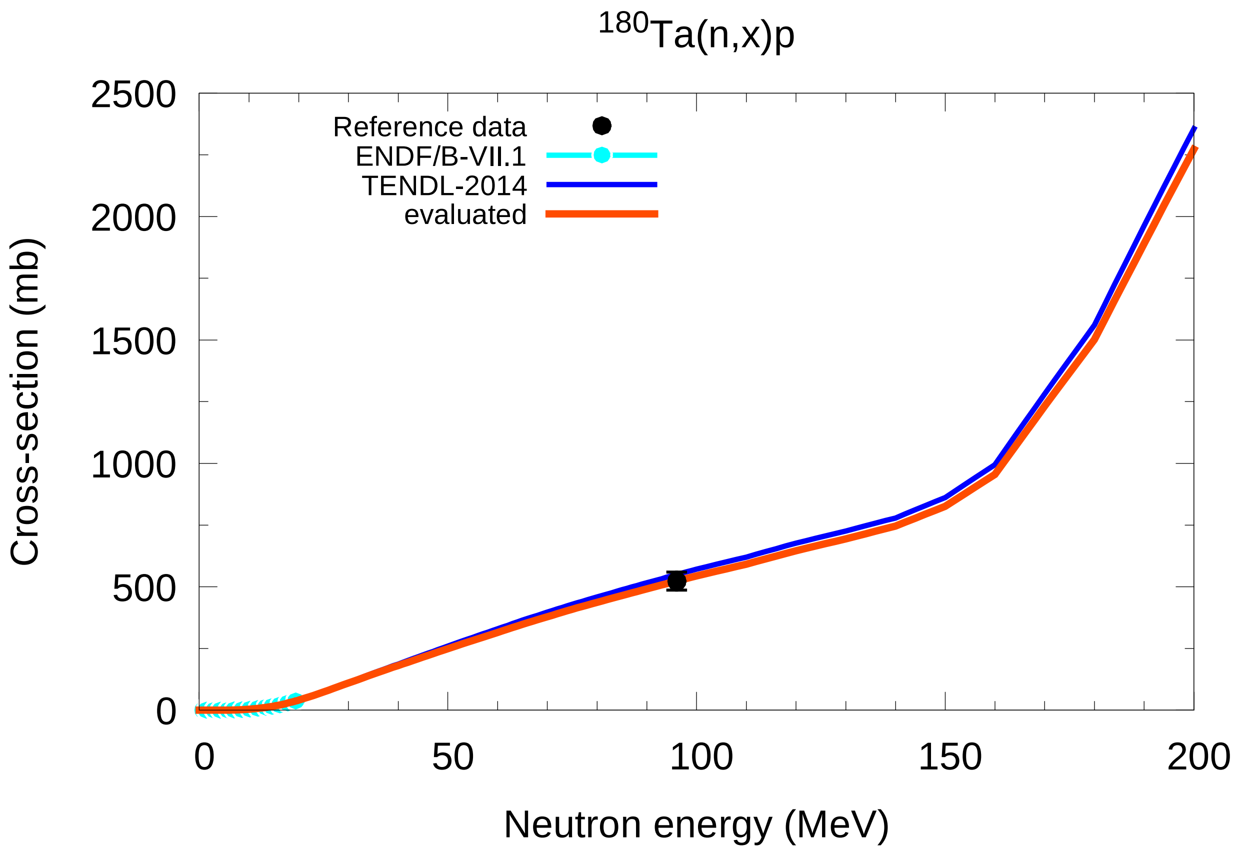
^{178}Hf(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
3000
2500
2000
1500
1000
500
0
0
50
100
150
200
Neutron energy (MeV)



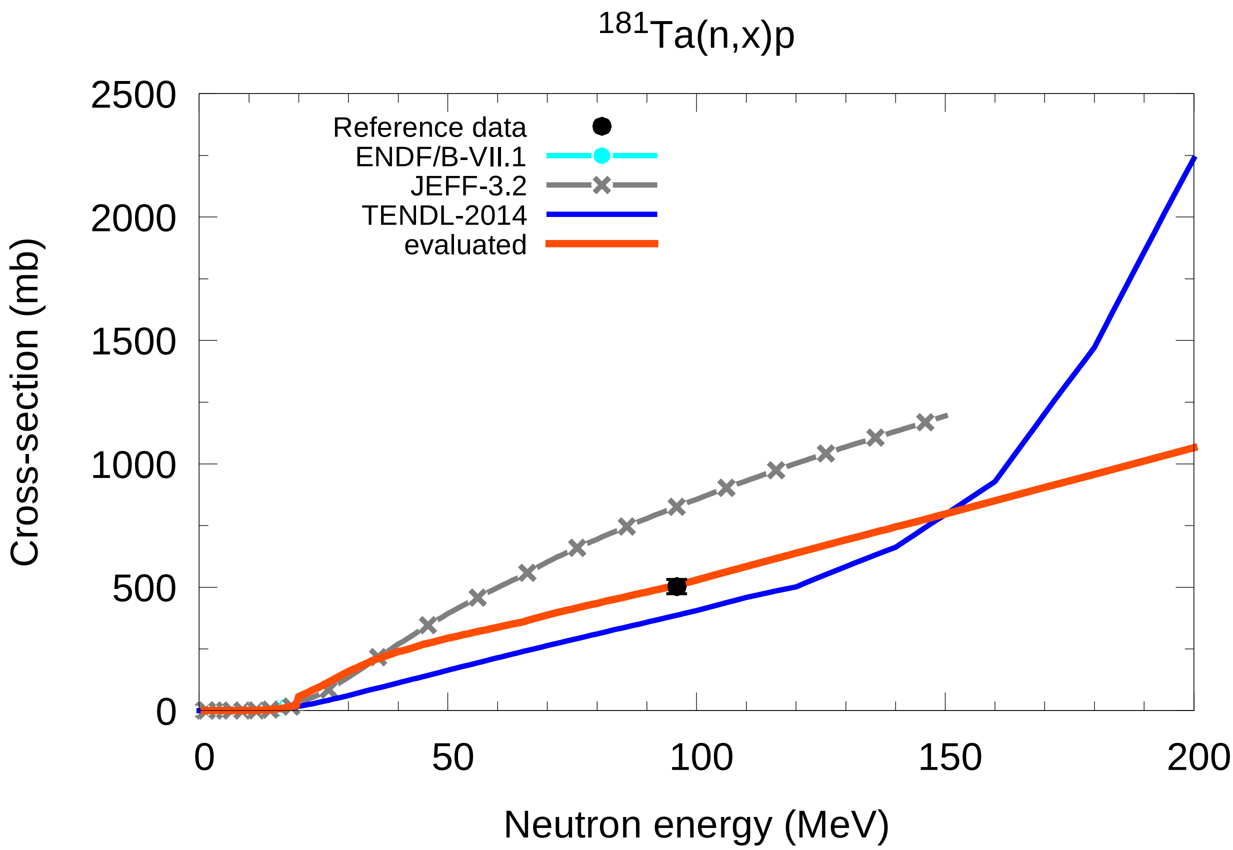
^{179}Hf(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
2500
2000
1500
1000
500
0
0
50
100
150
200
Neutron energy (MeV)



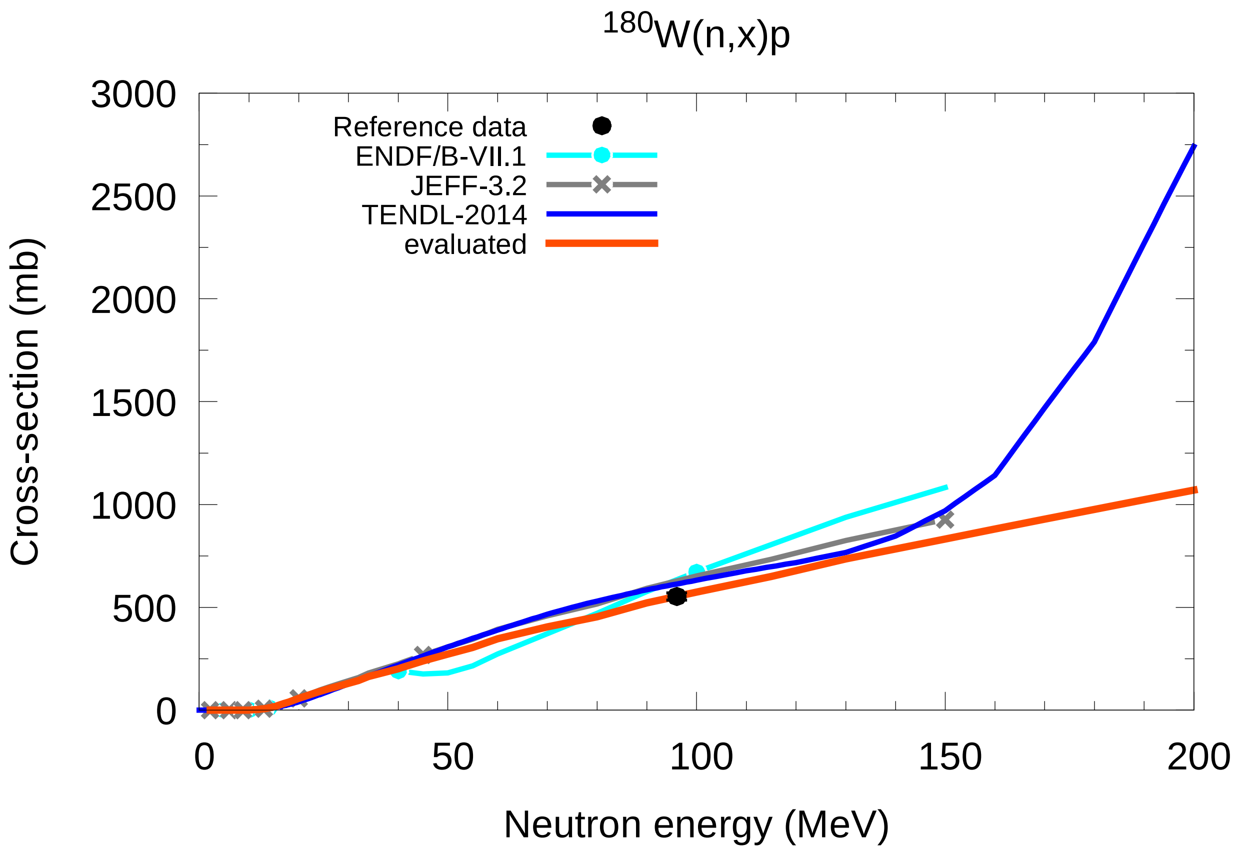
^{180}Hf(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
0
50
100
150
200



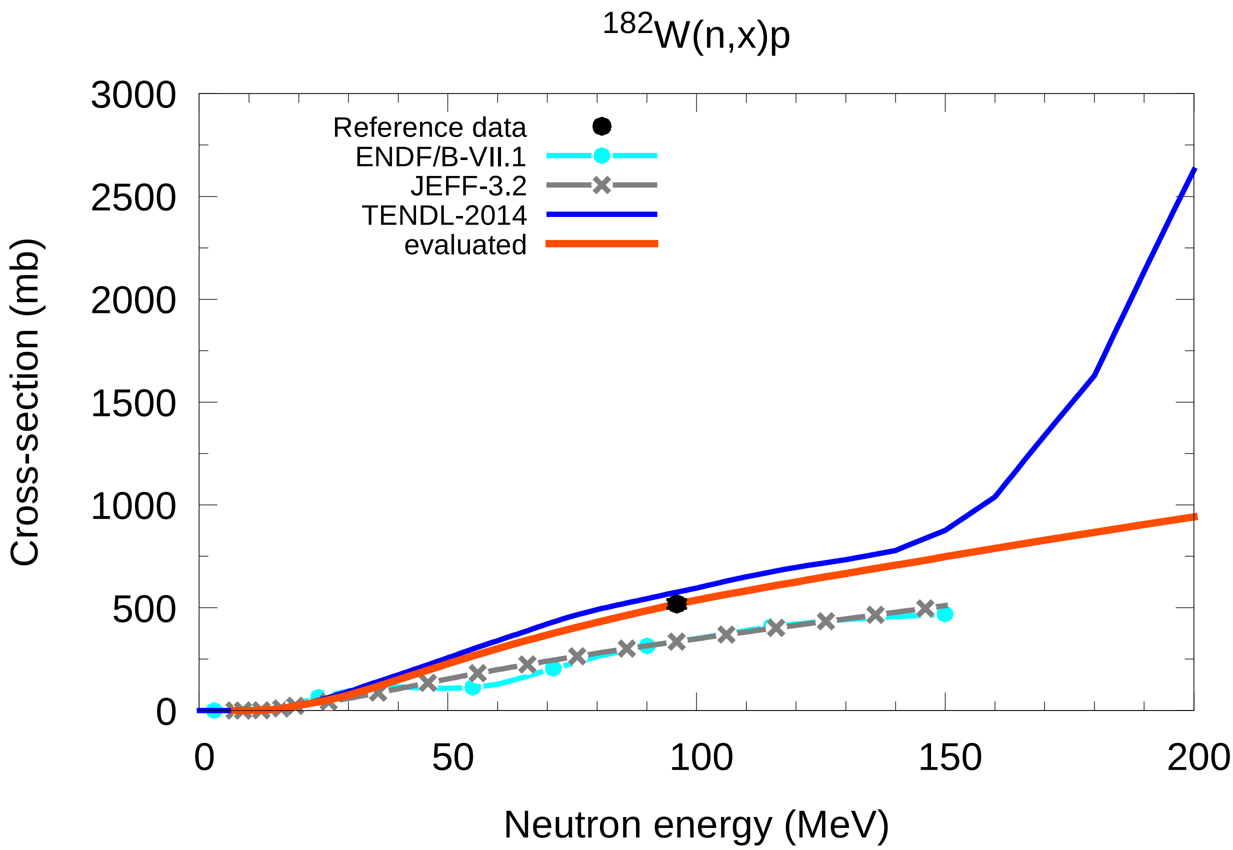
^{180}Ta(n,x)p
Reference data
ENDF/B-VII.1
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



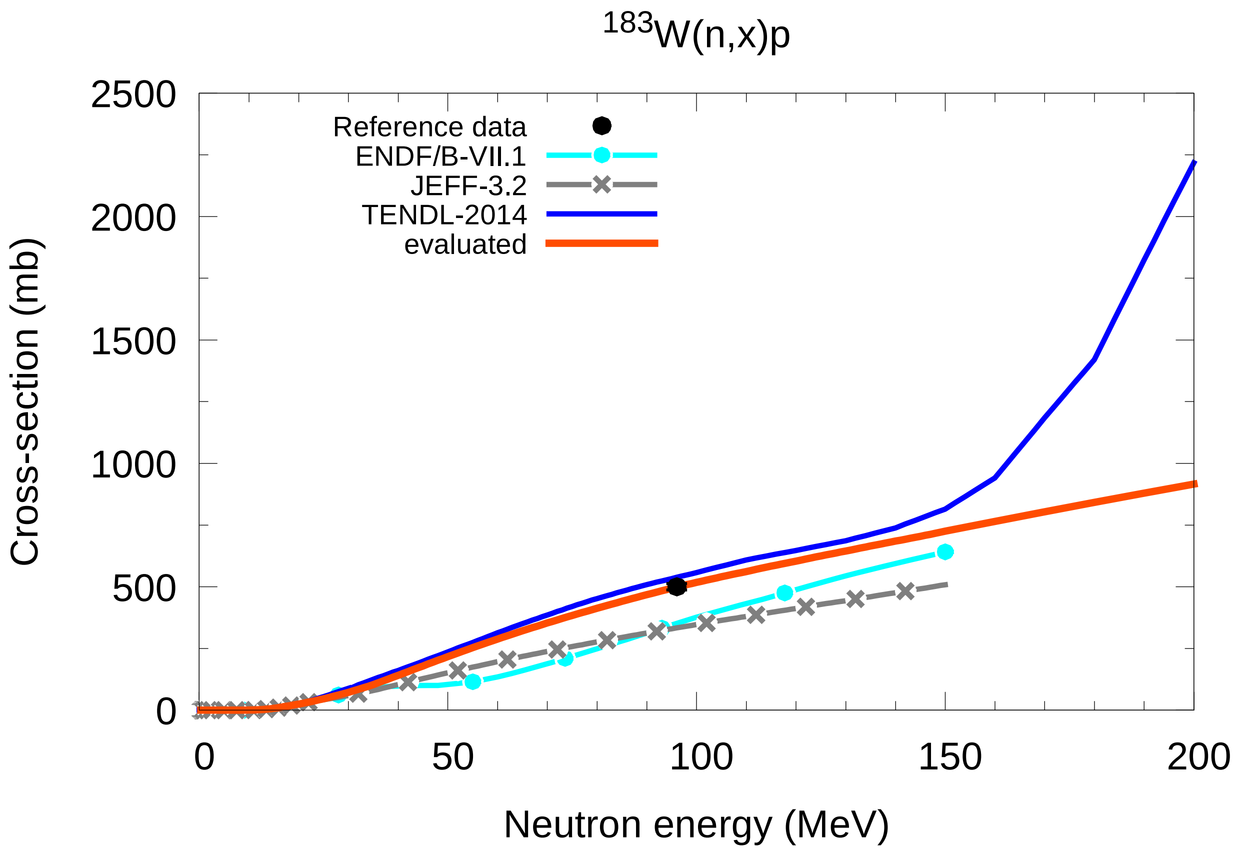
^{181}Ta(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



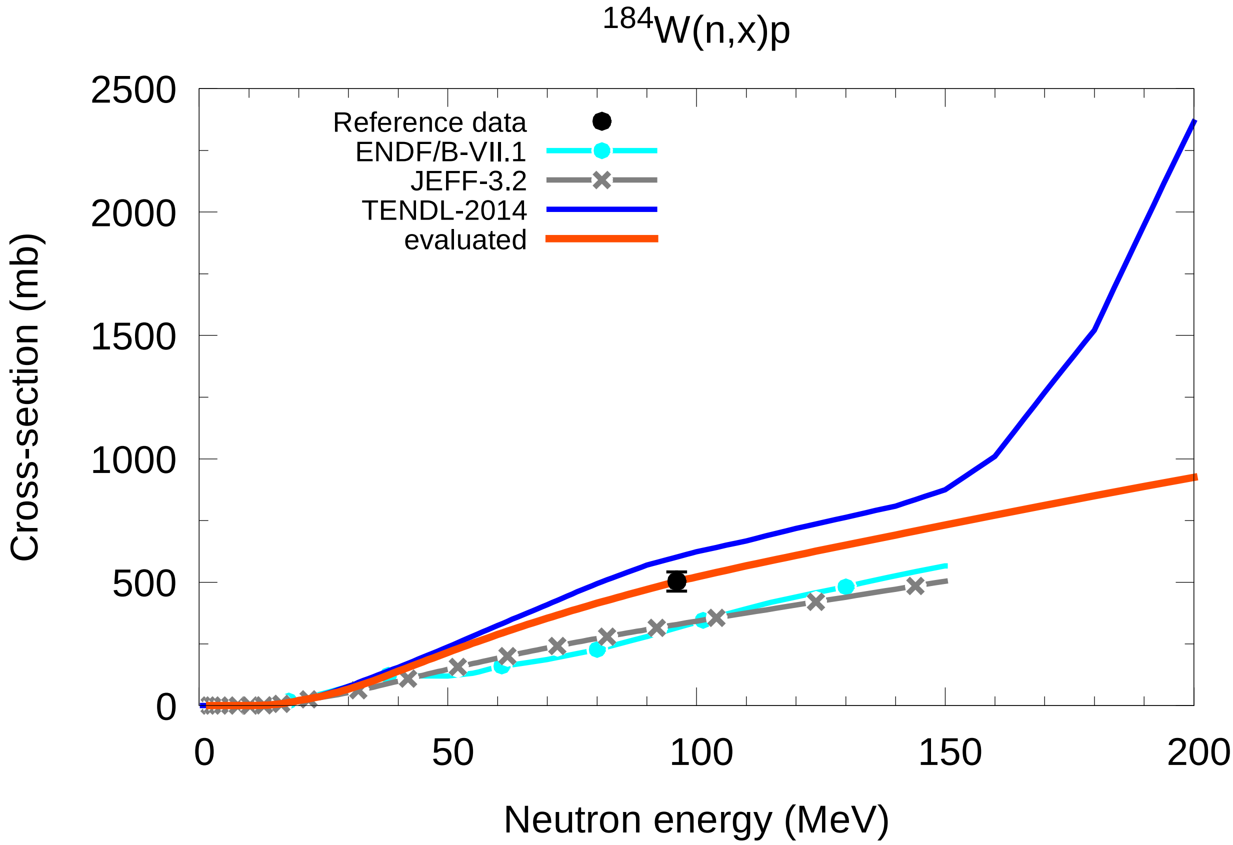
^{180}W(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
0
50
100
150
200



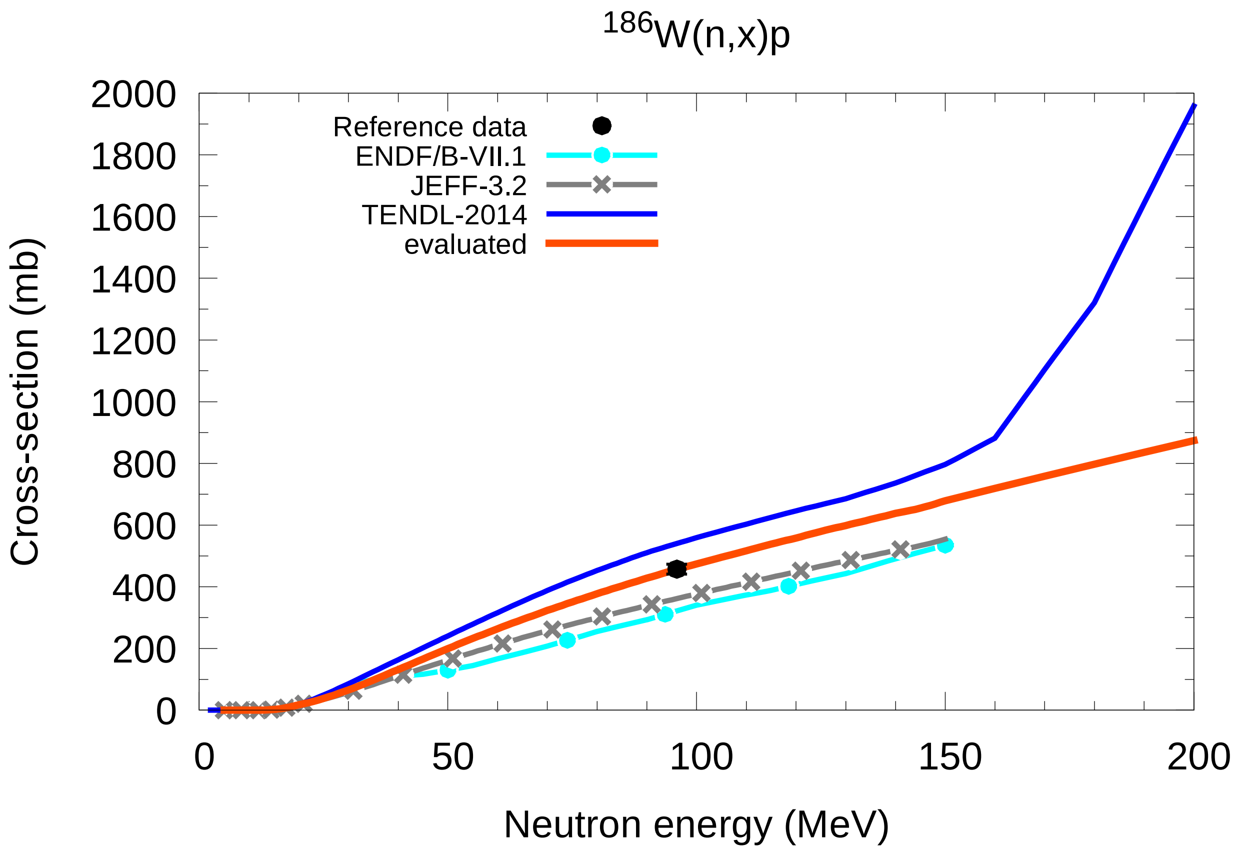
$^{182}W(n,x)p$
3000
2500
2000
1500
1000
500
0
0
50
100
150
200
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



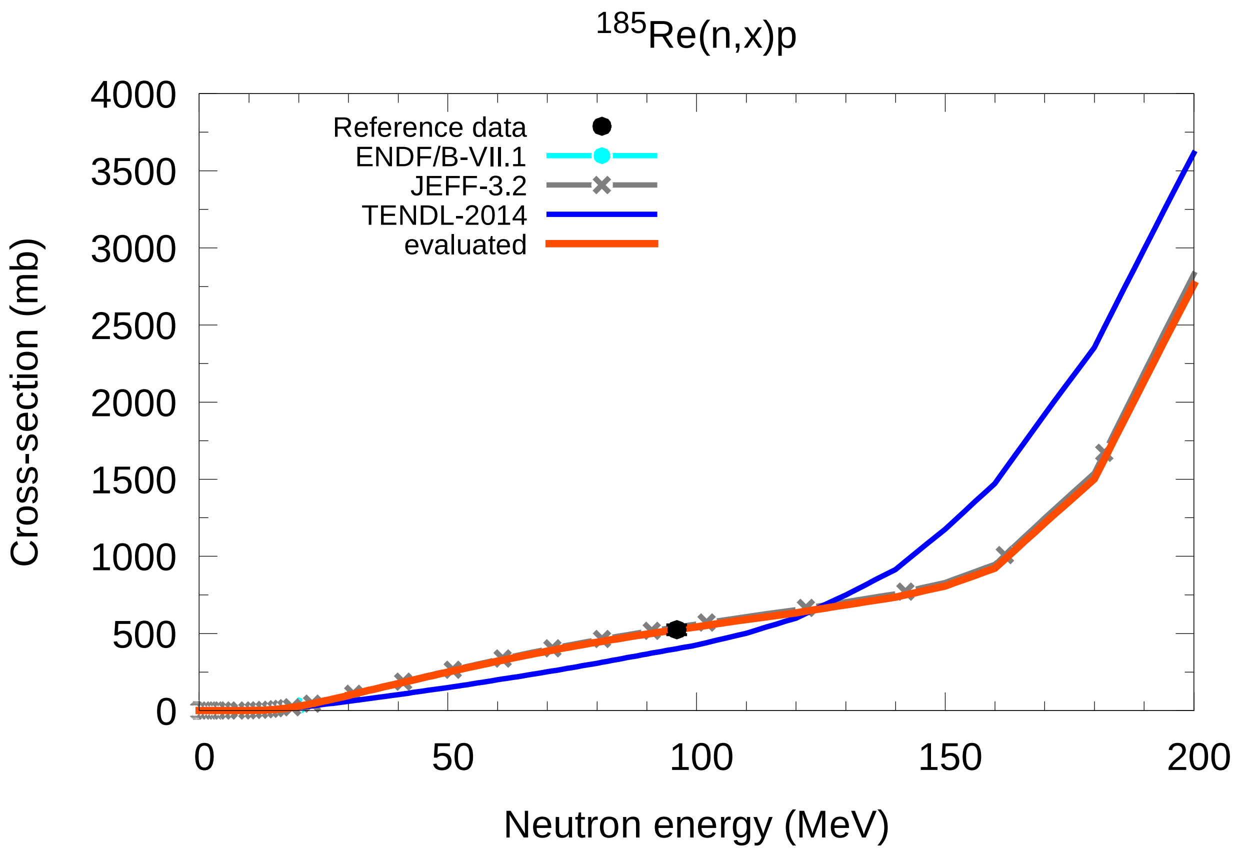
$^{183}W(n,x)p$
2500
2000
1500
1000
500
0
0
50
100
150
200
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



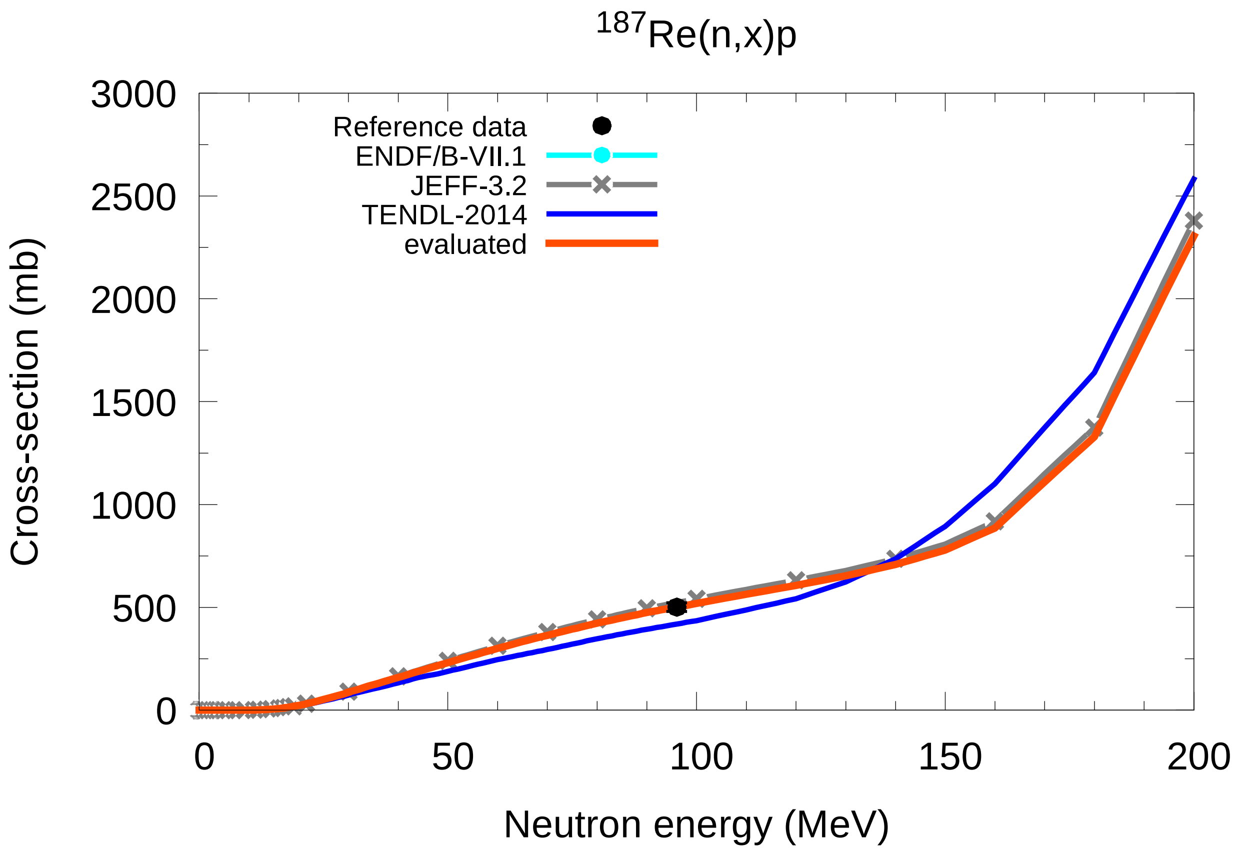
184W(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



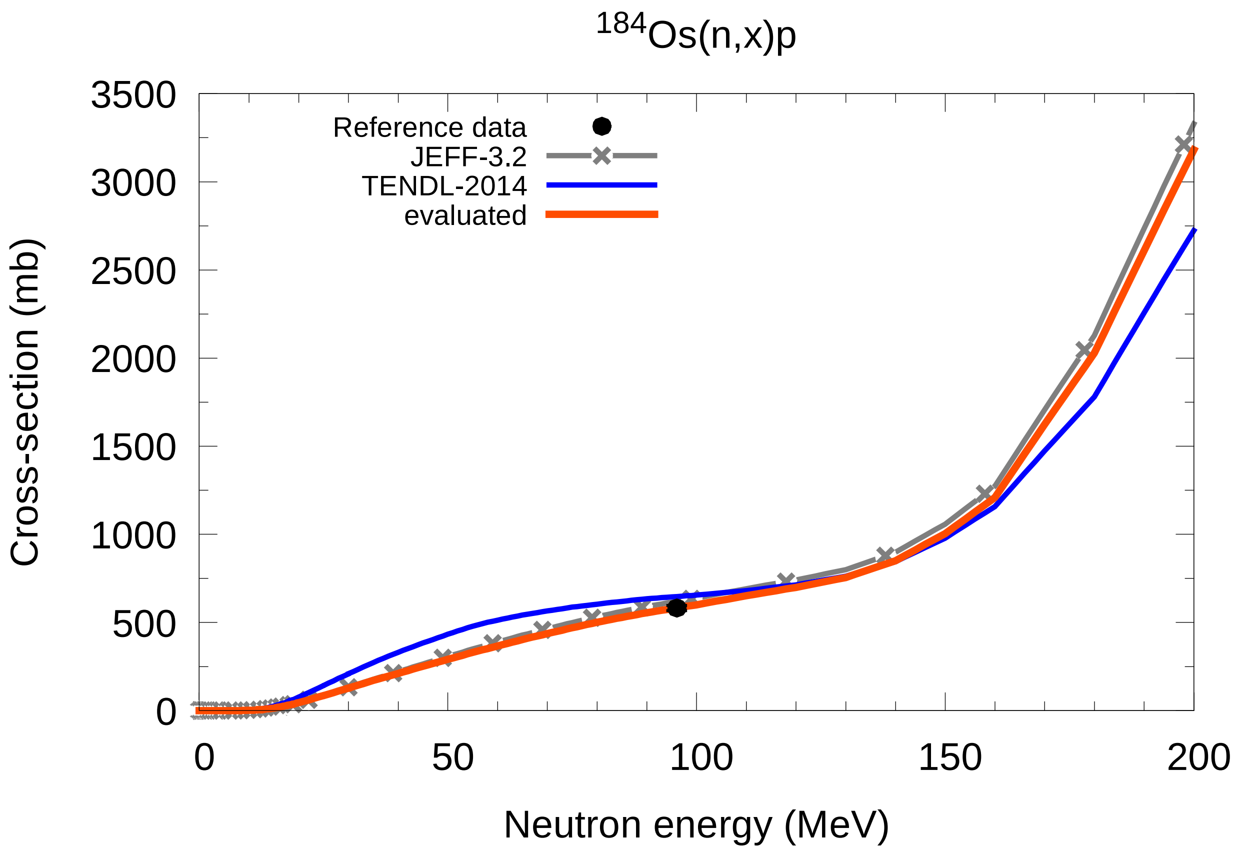
186W(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0
50
100
150
200



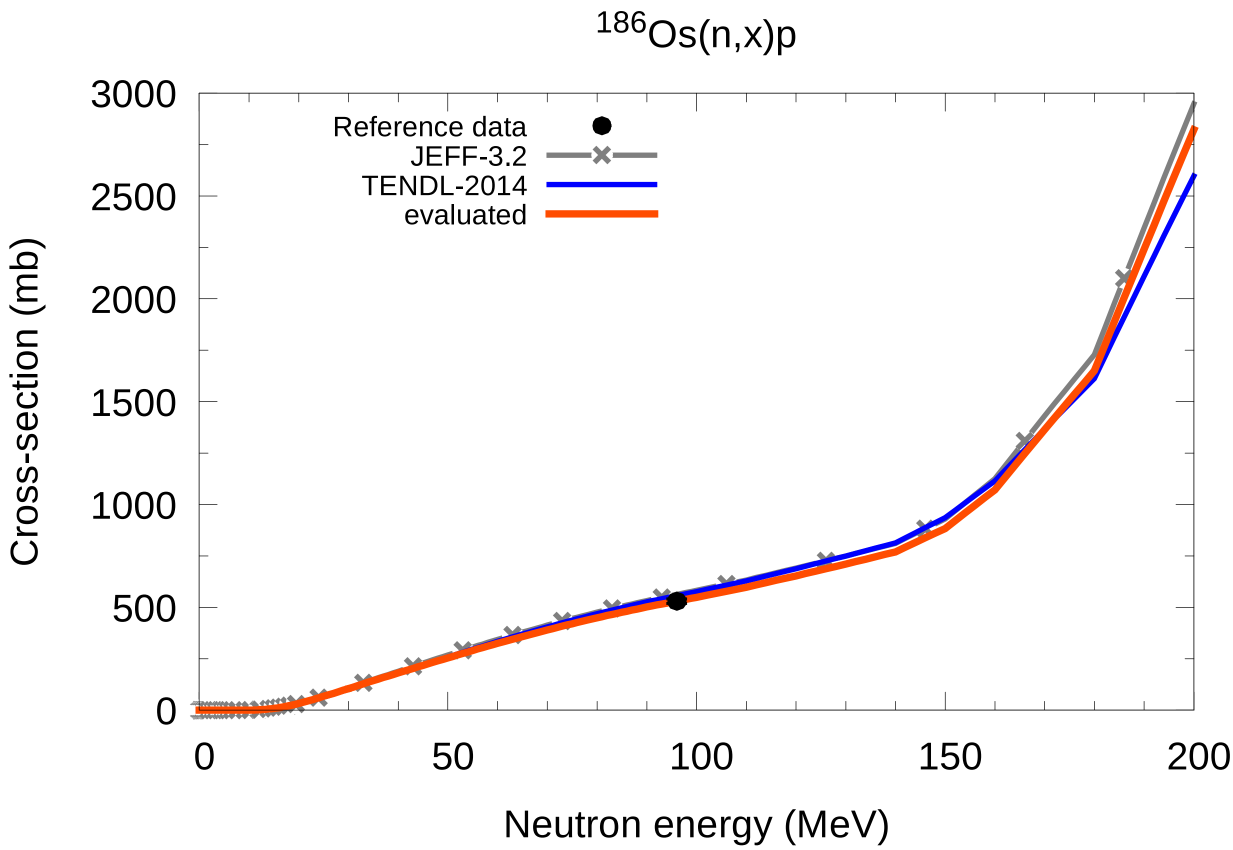
^{185}Re(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
3500
4000
0
50
100
150
200



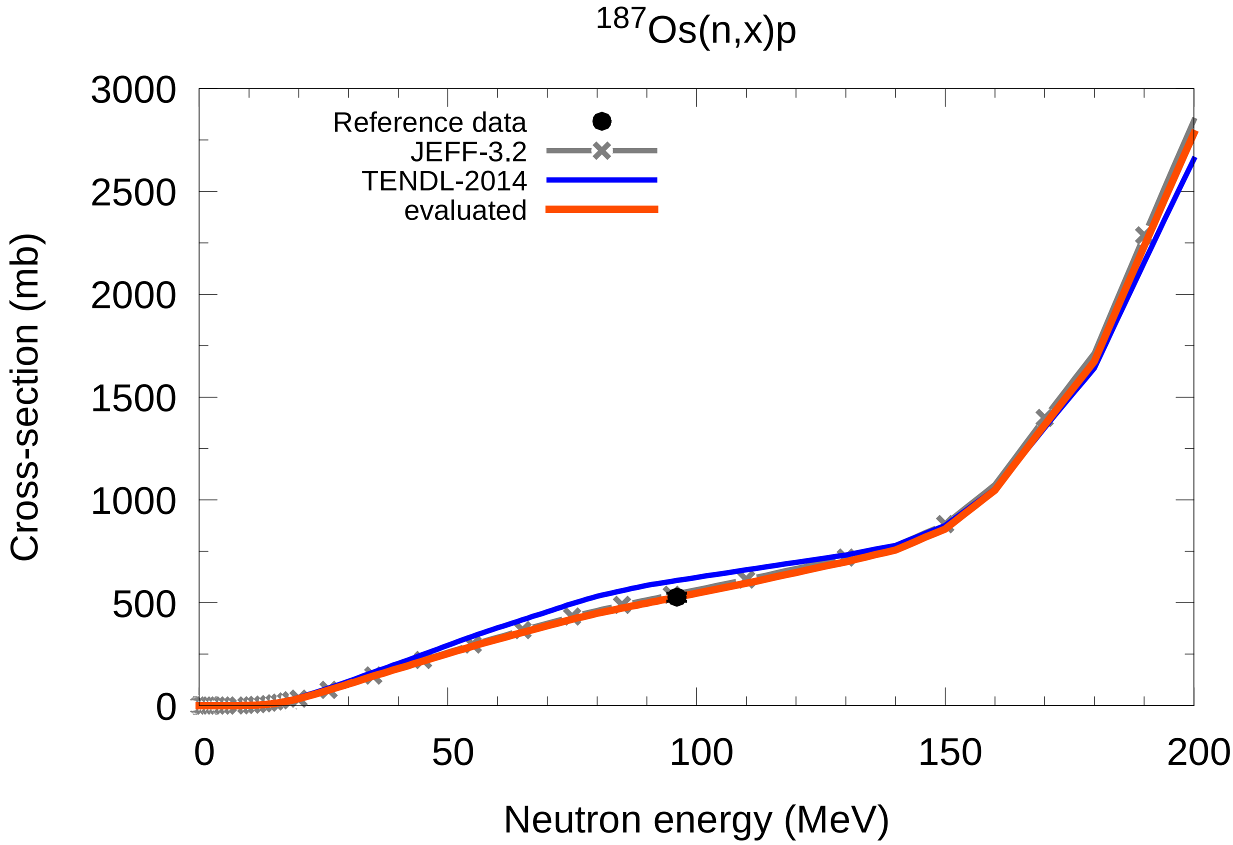
^{187}Re(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
0
50
100
150
200



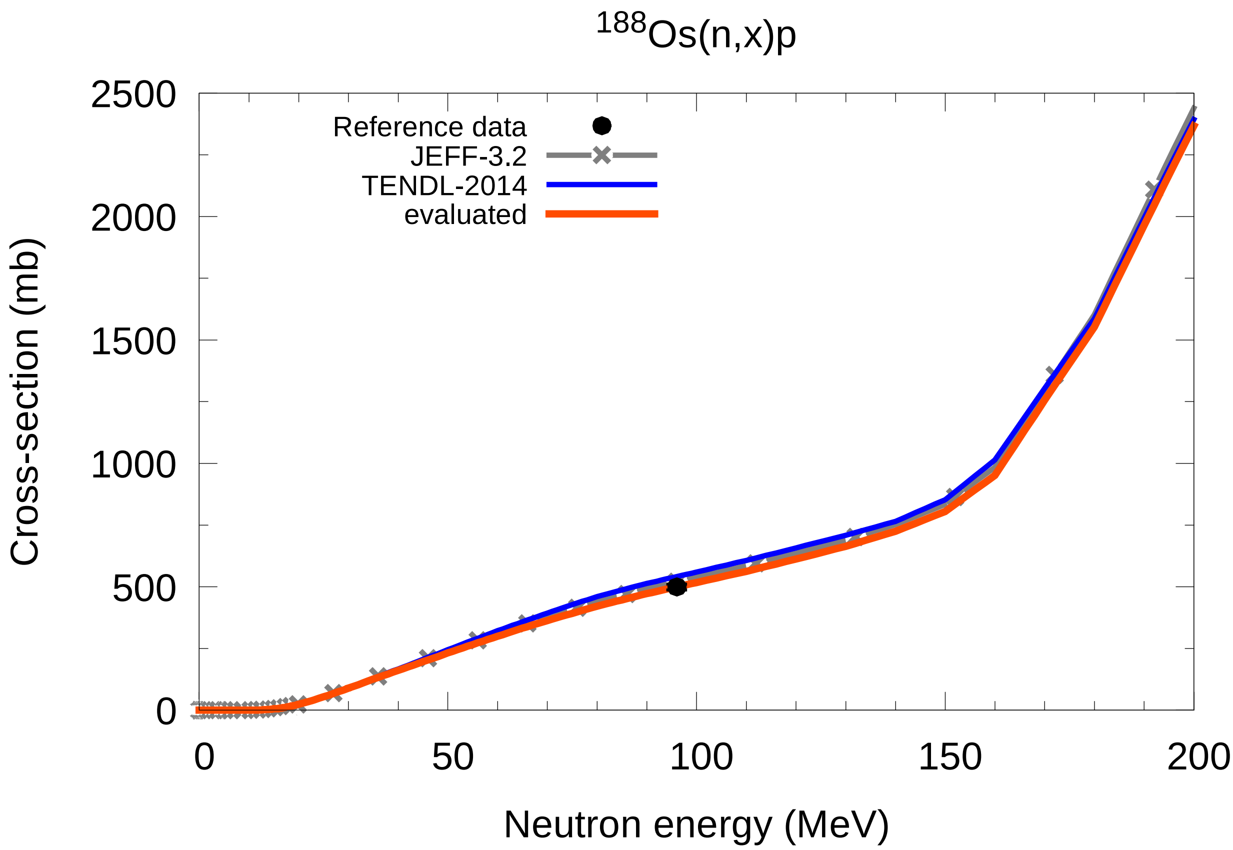
^{184}Os(n,x)p
Reference data
JEFF-3.2
TENDL-2014
evaluated
3500
3000
2500
2000
1500
1000
500
0
0
50
100
150
200
Cross-section (mb)
Neutron energy (MeV)



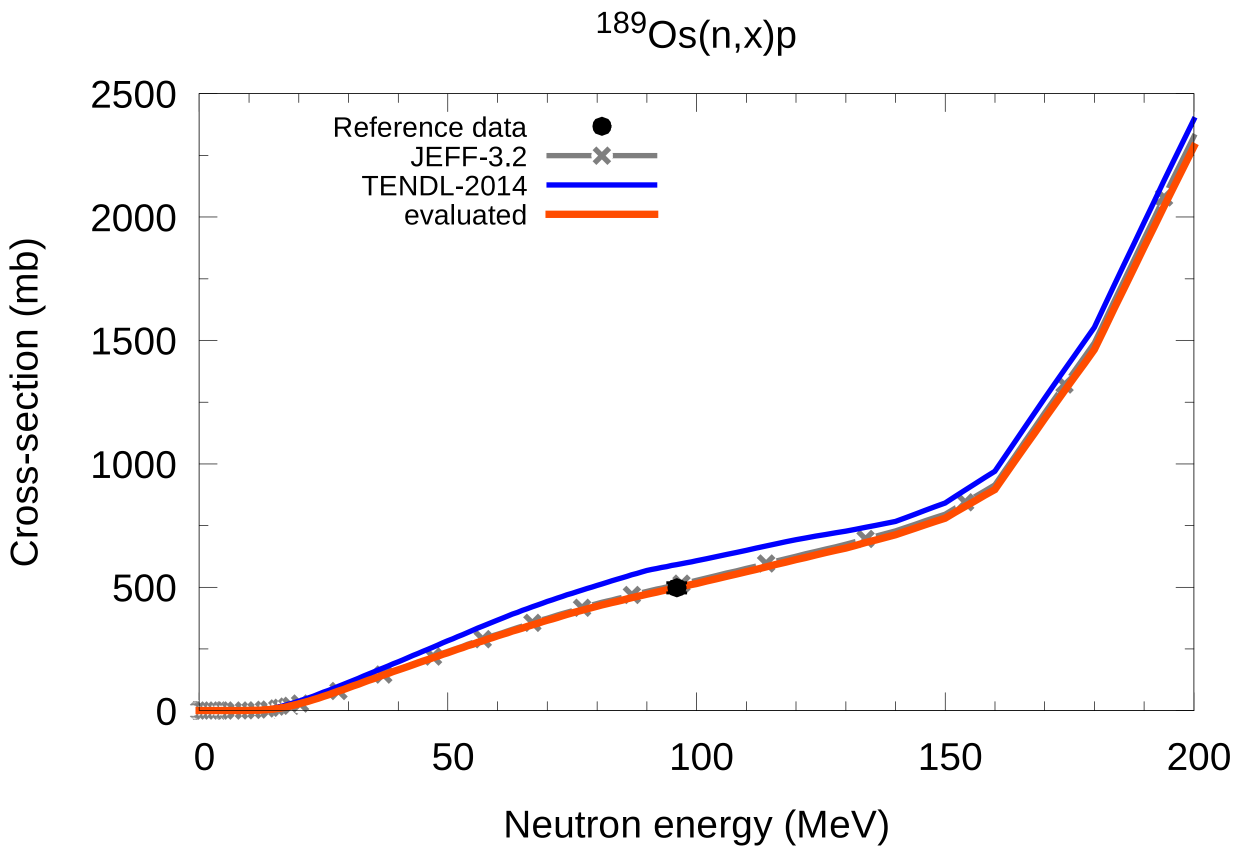
^{186}Os(n,x)p
Reference data
JEFF-3.2
TENDL-2014
evaluated
3000
2500
2000
1500
1000
500
0
0
50
100
150
200
Cross-section (mb)
Neutron energy (MeV)



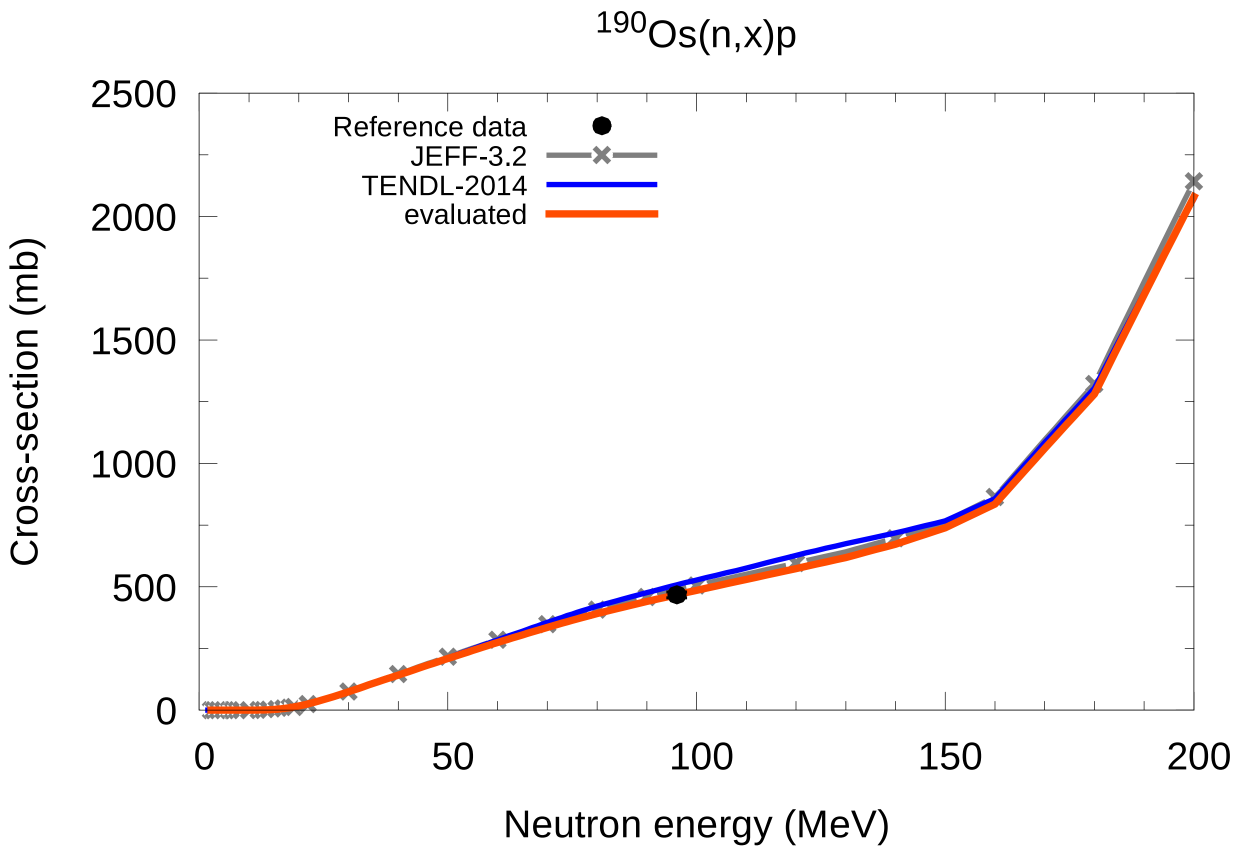
^{187}Os(n,x)p
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
0
50
100
150
200



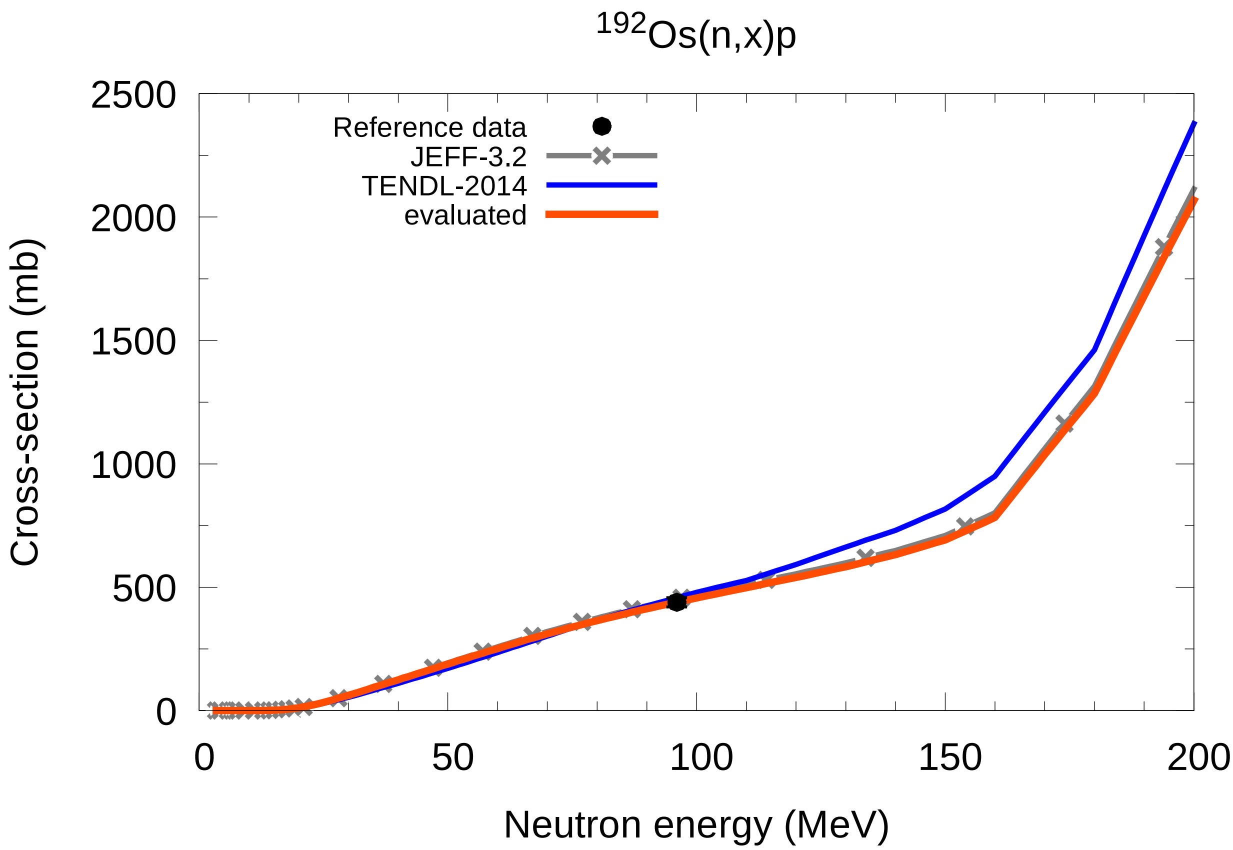
^{188}Os(n,x)p
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



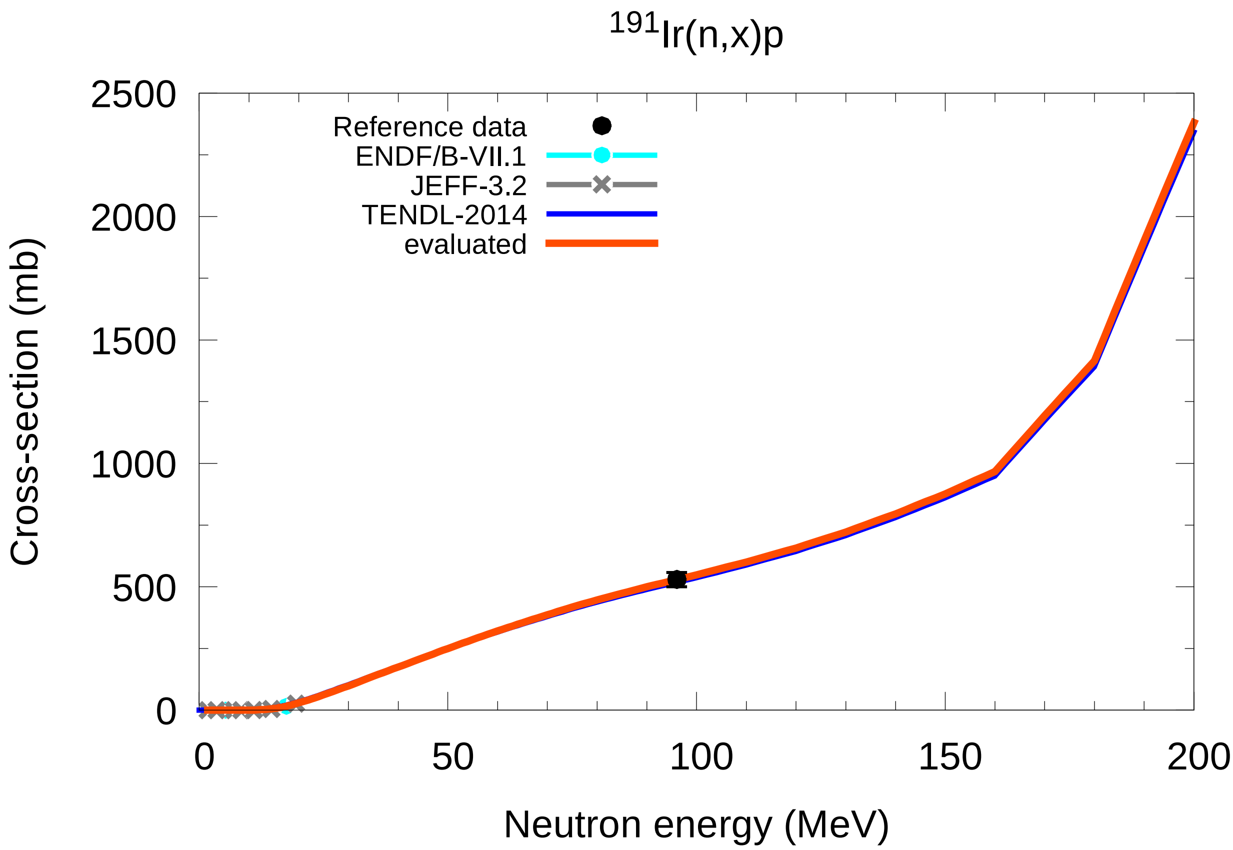
^{189}Os(n,x)p
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



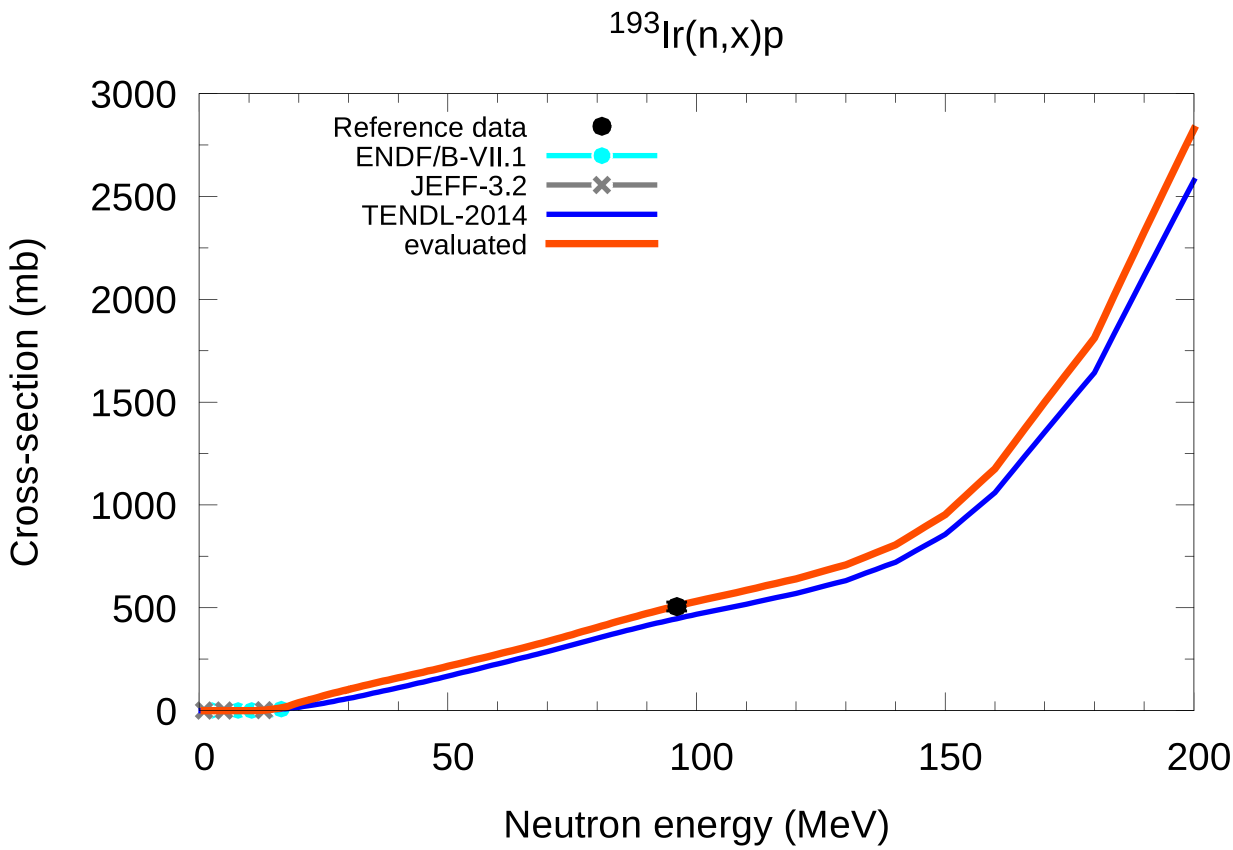
^{190}Os(n,x)p
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



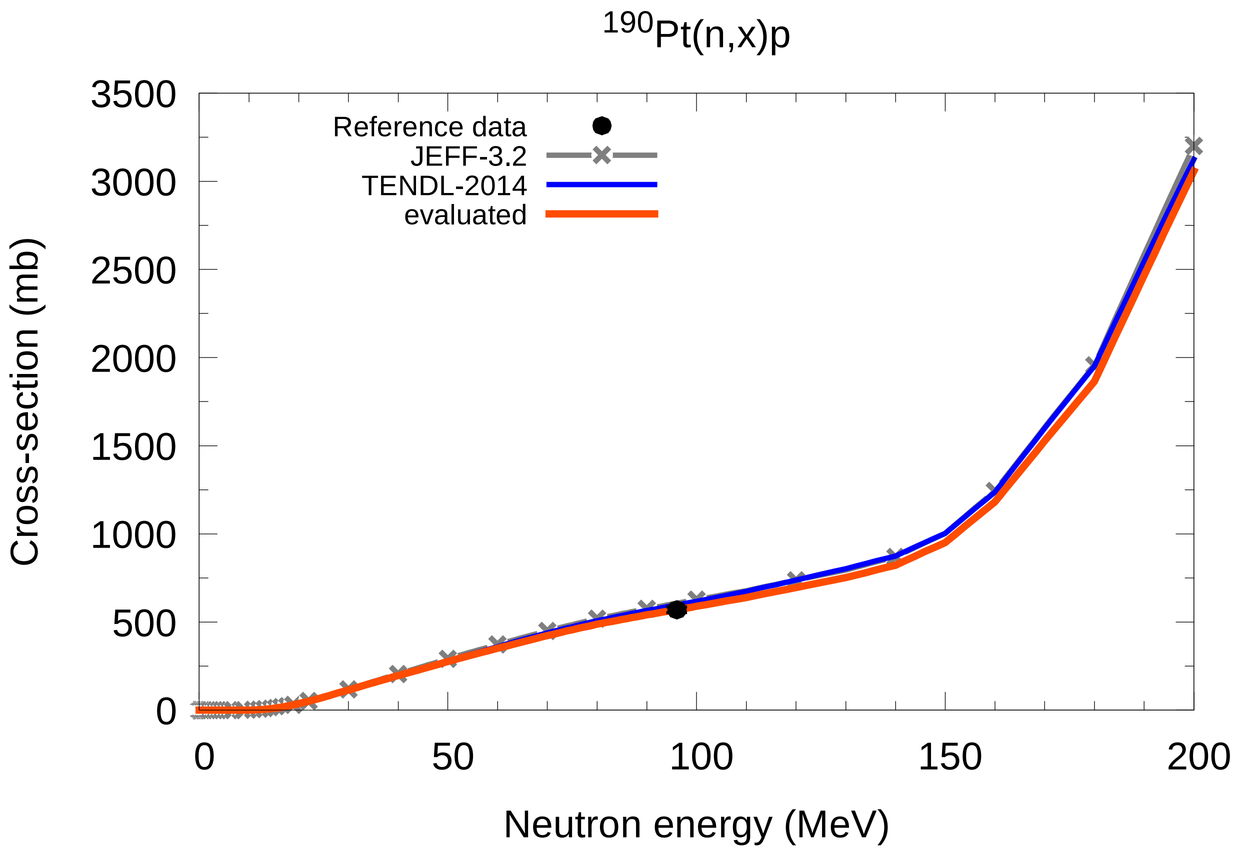
^{192}Os(n,x)p
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



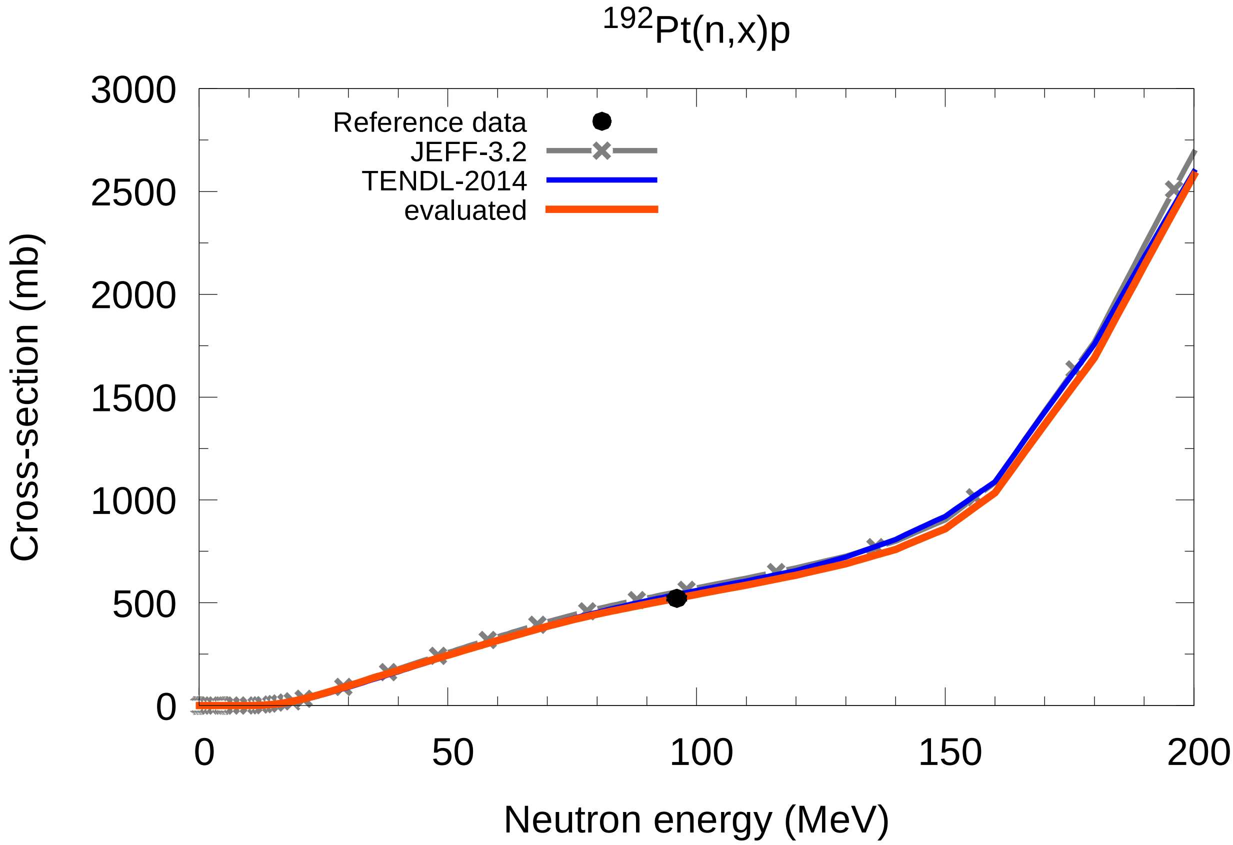
^{191}Ir(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



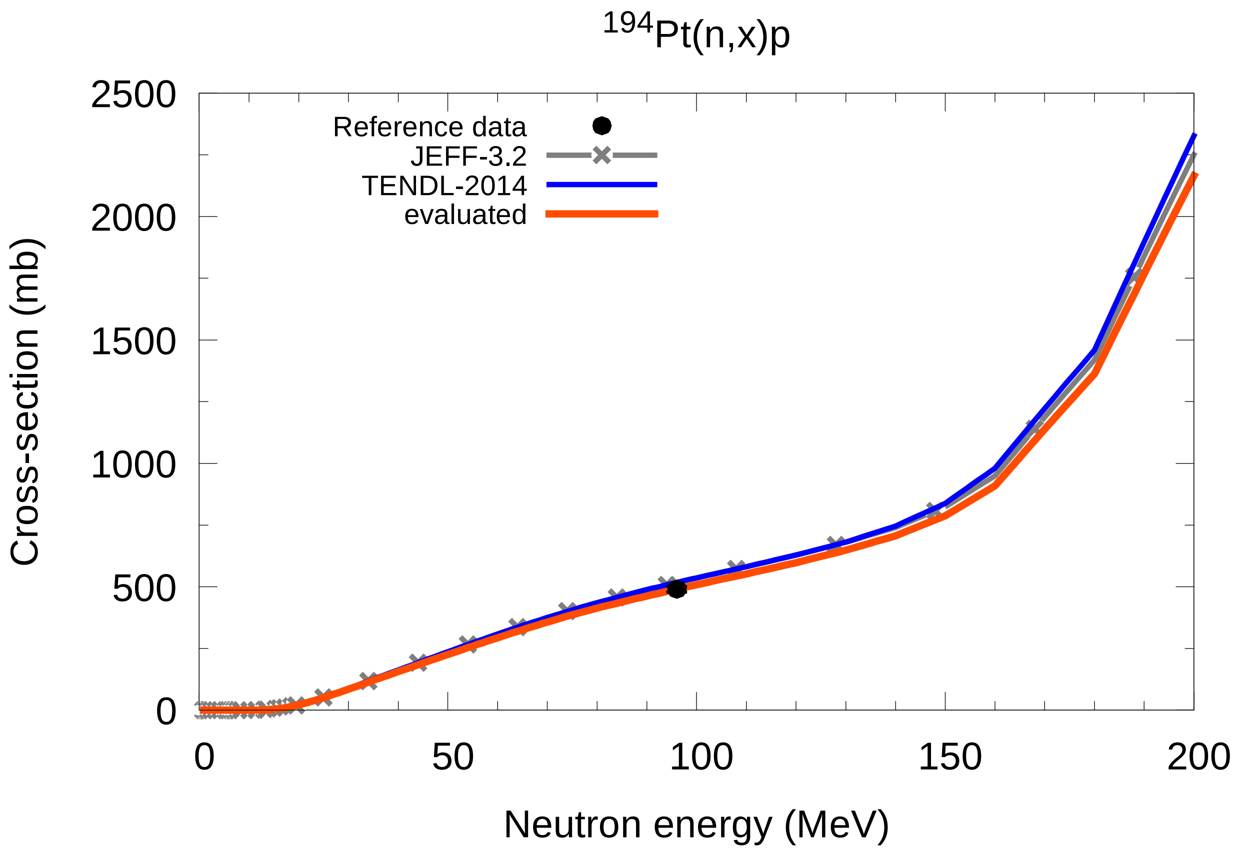
^{193}Ir(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
0
50
100
150
200



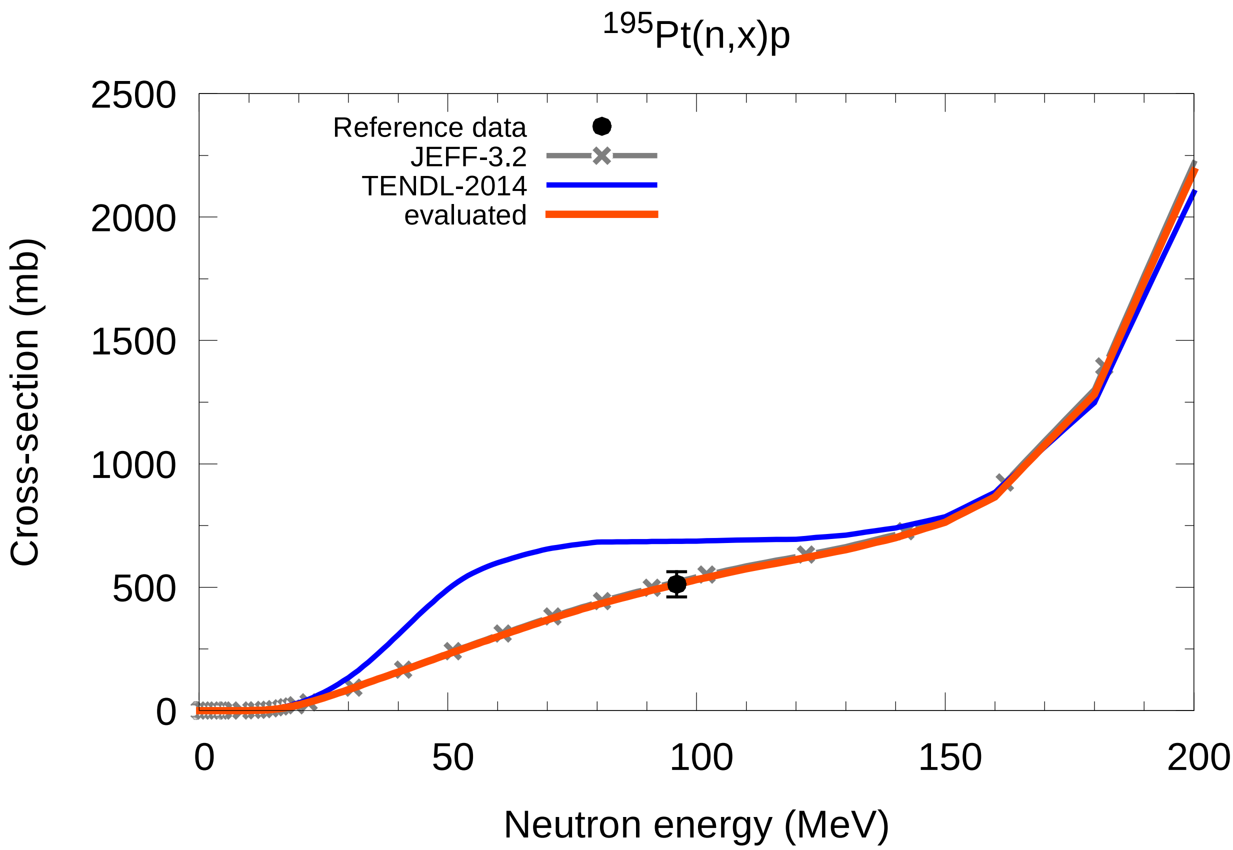
^{190}Pt(n,x)p
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
3500
0
50
100
150
200



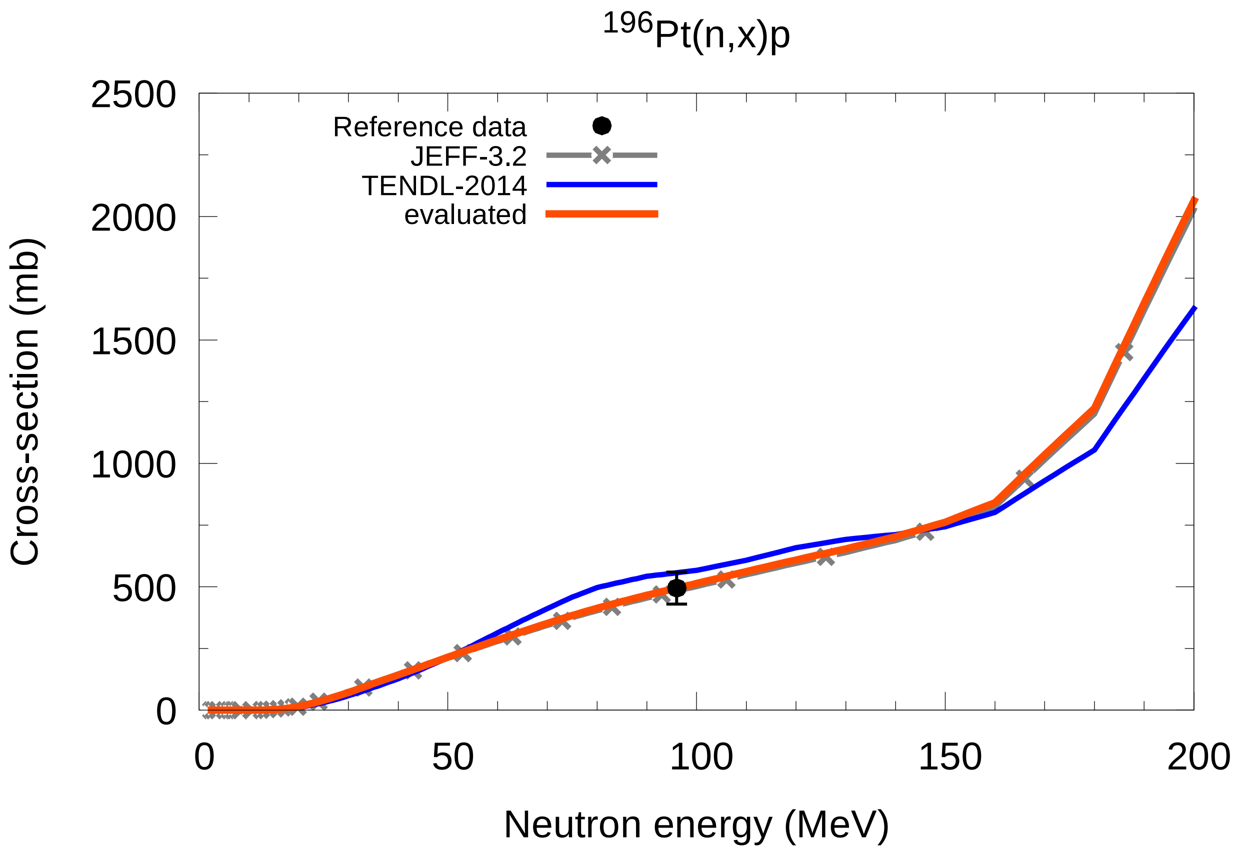
^{192}Pt(n,x)p
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
0
50
100
150
200



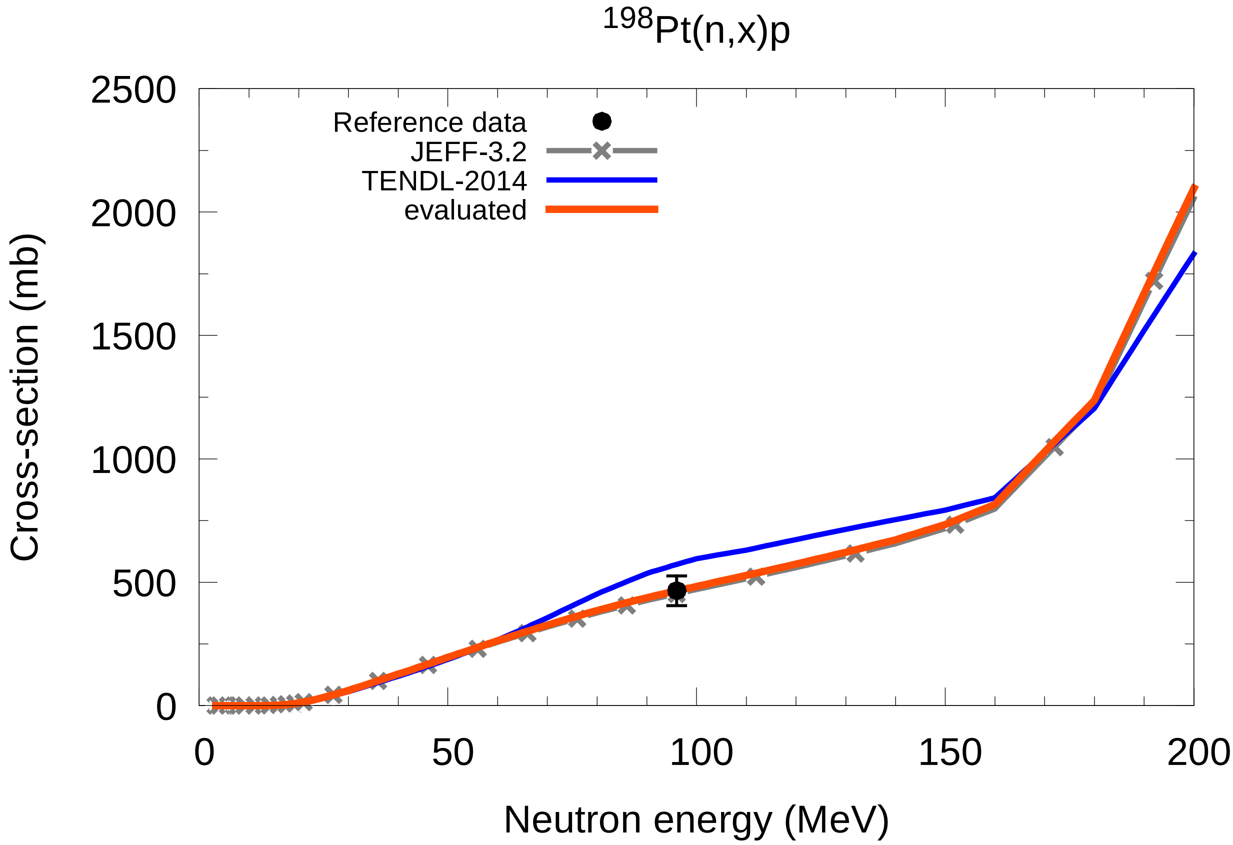
^{194}Pt(n,x)p
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



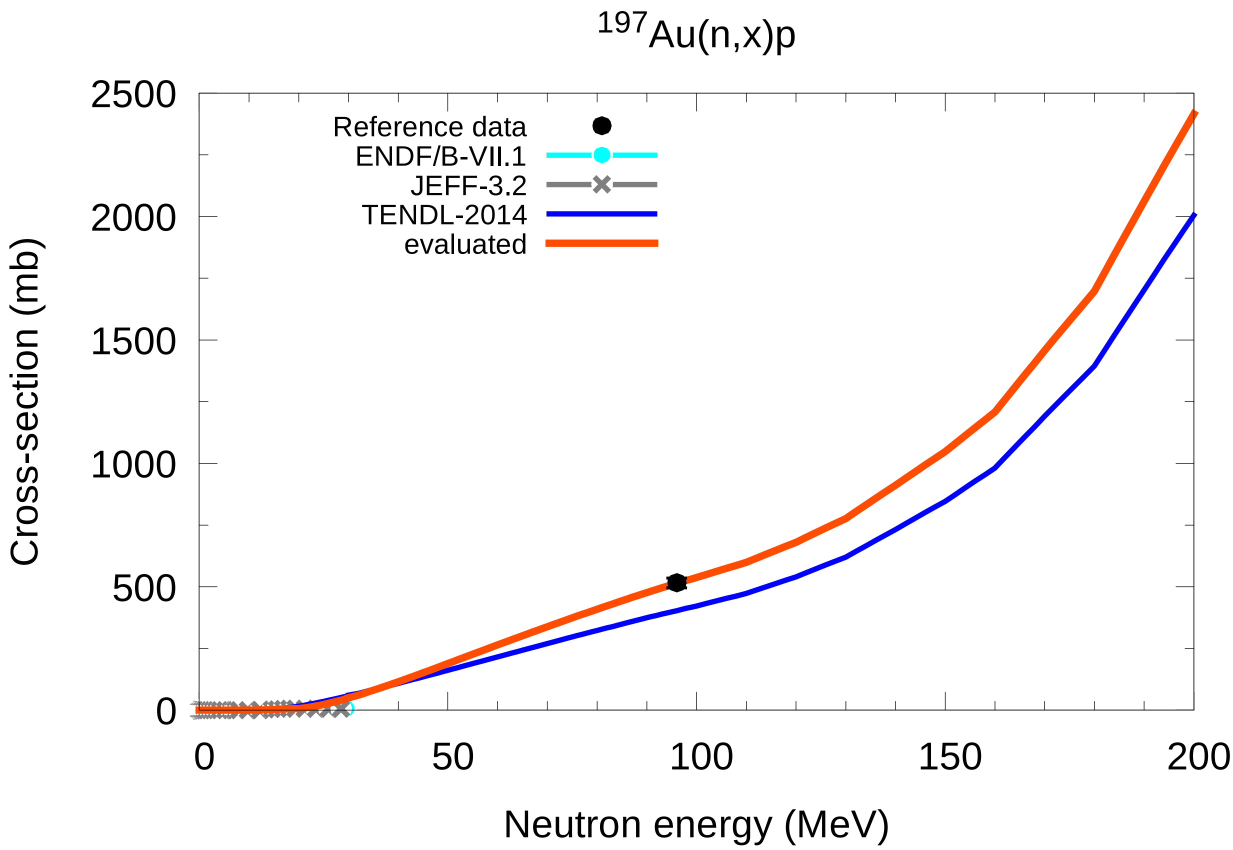
195Pt(n,x)p
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
2500
2000
1500
1000
500
0
0
50
100
150
200
Neutron energy (MeV)



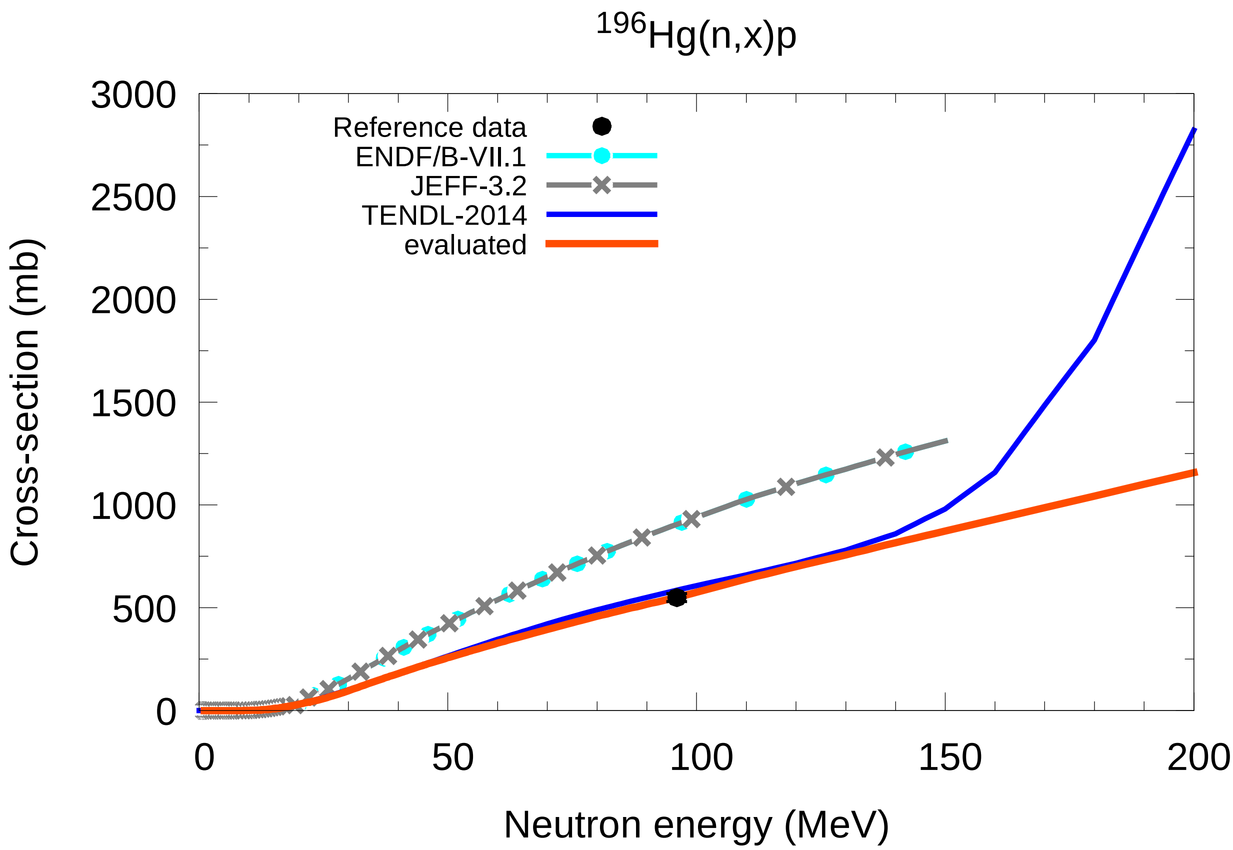
196Pt(n,x)p
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
2500
2000
1500
1000
500
0
0
50
100
150
200
Neutron energy (MeV)



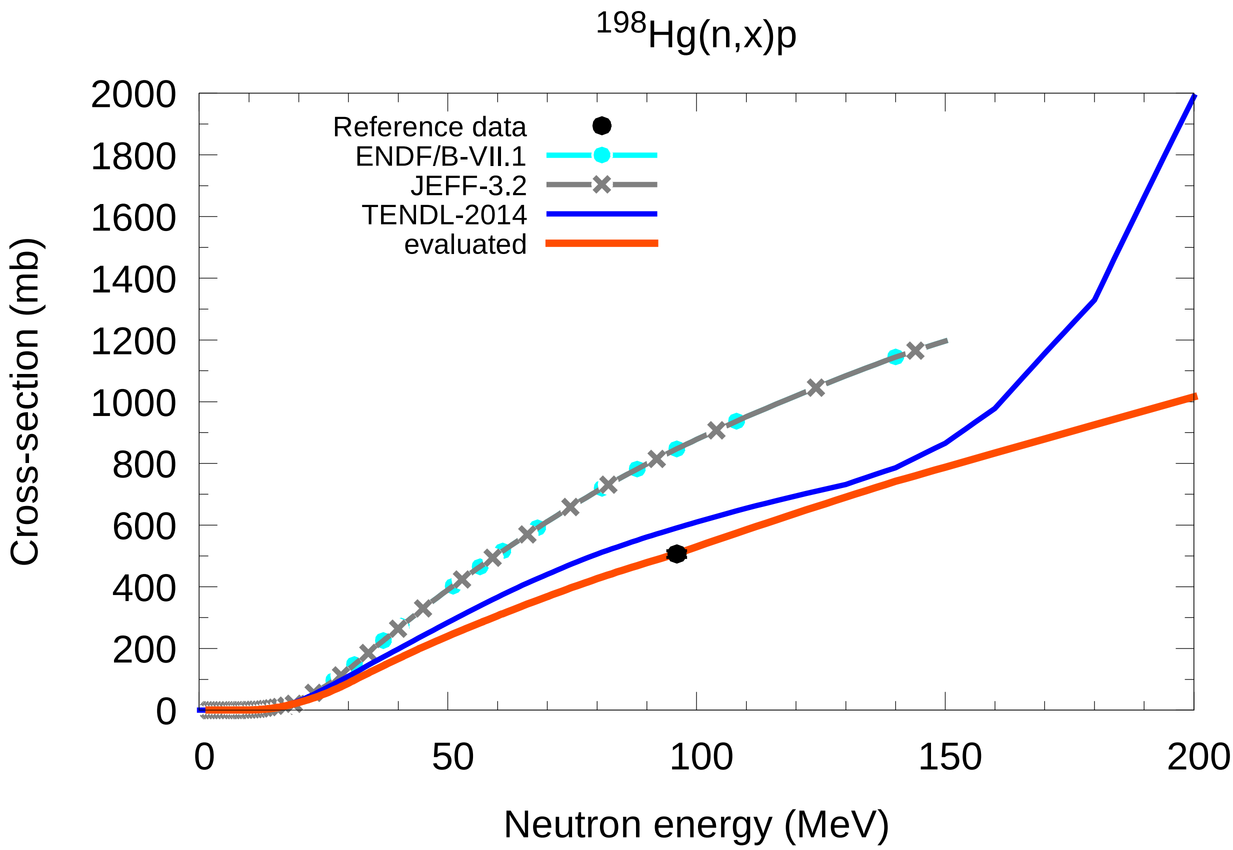
^{198}Pt(n,x)p
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



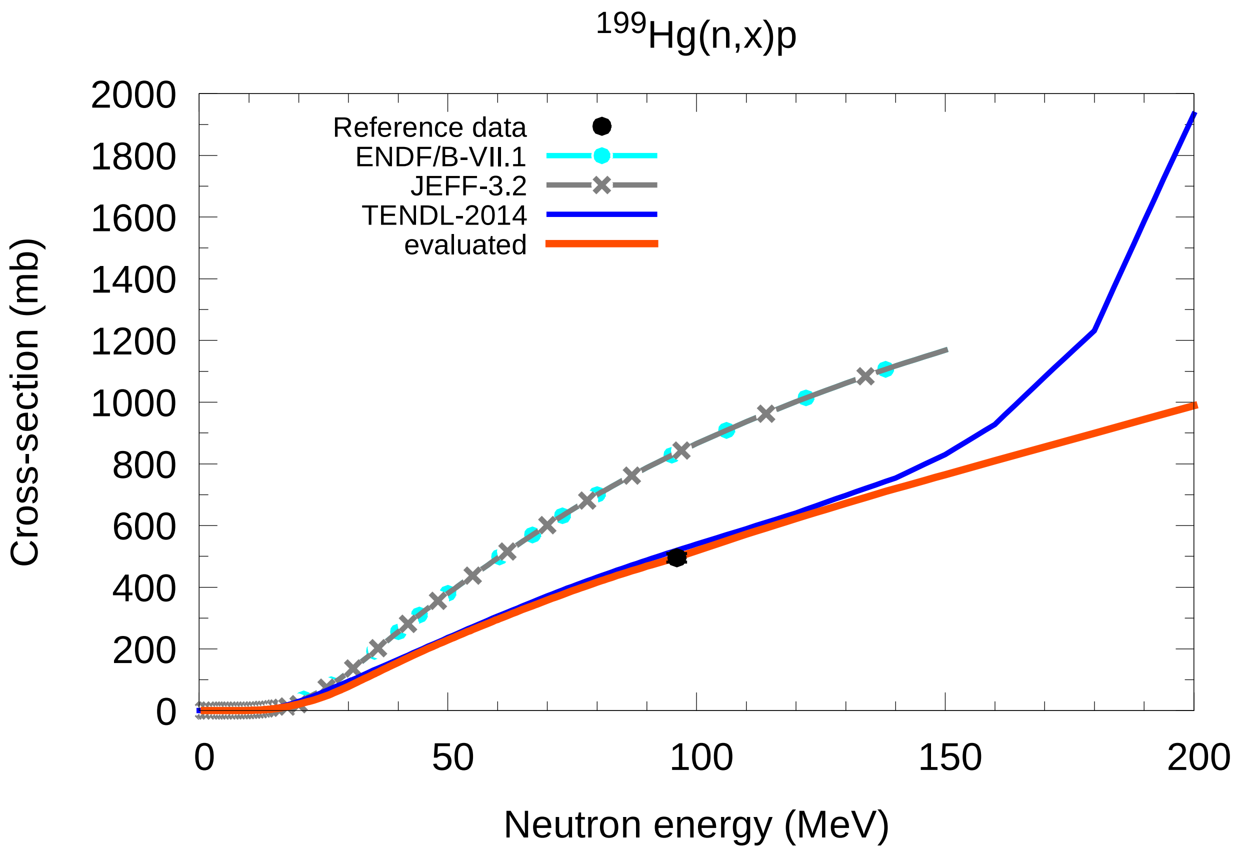
^{197}Au(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



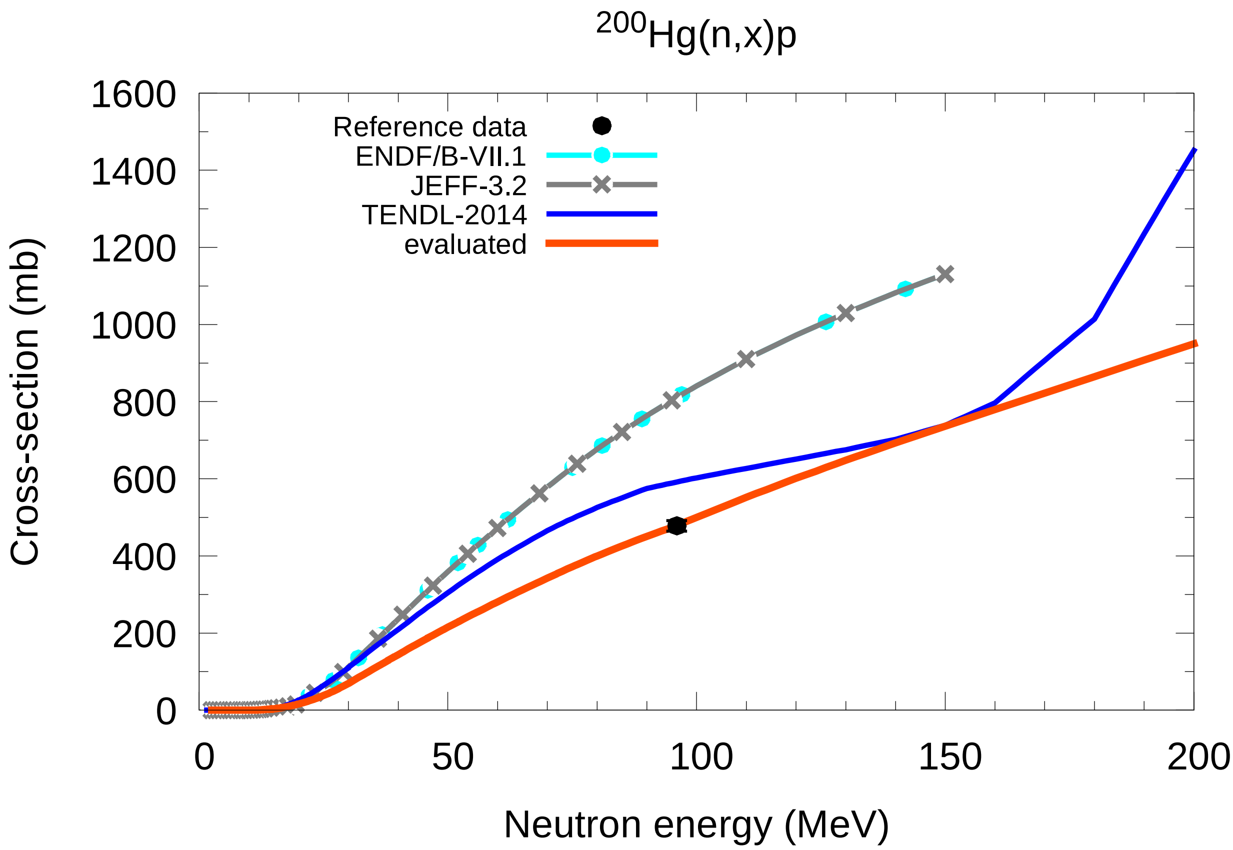
^{196}Hg(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
3000
0
50
100
150
200



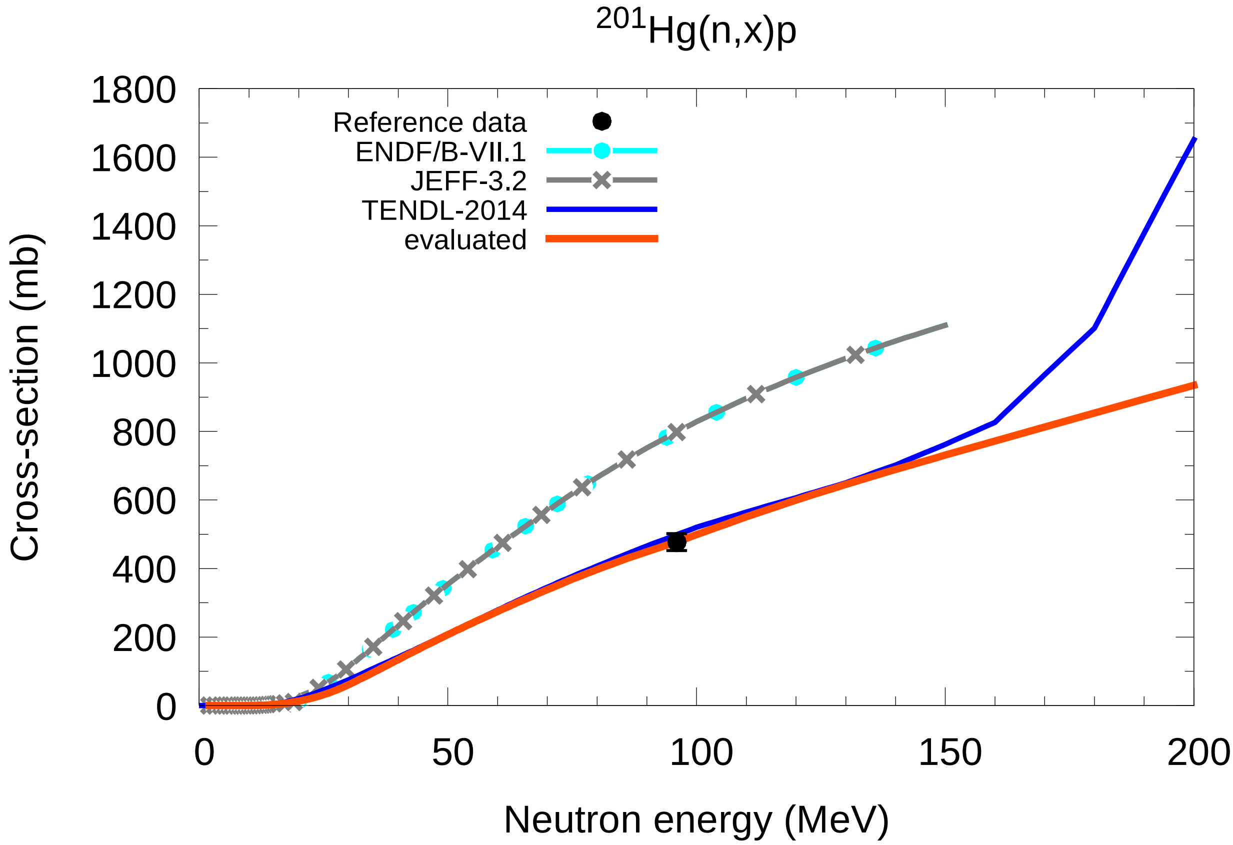
^{198}Hg(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0
50
100
150
200



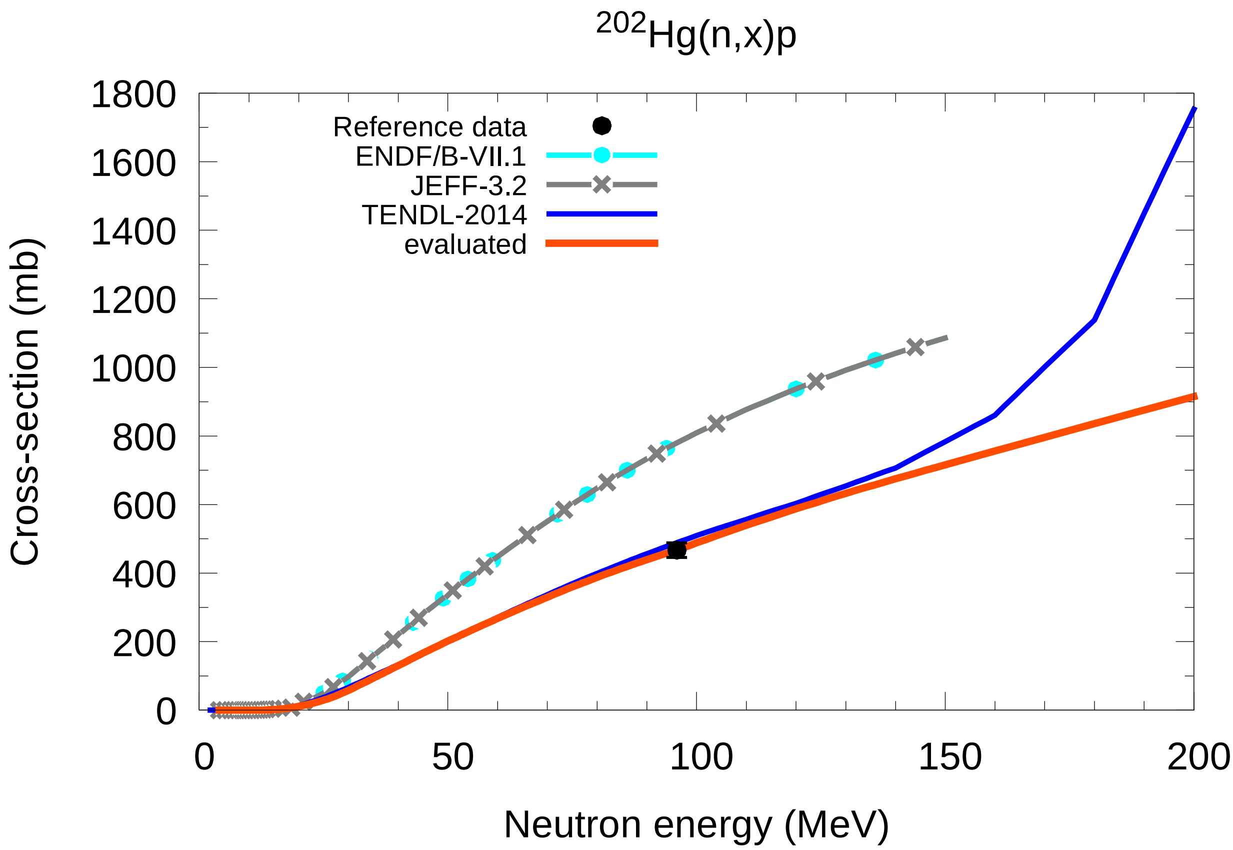
^{199}Hg(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0
50
100
150
200



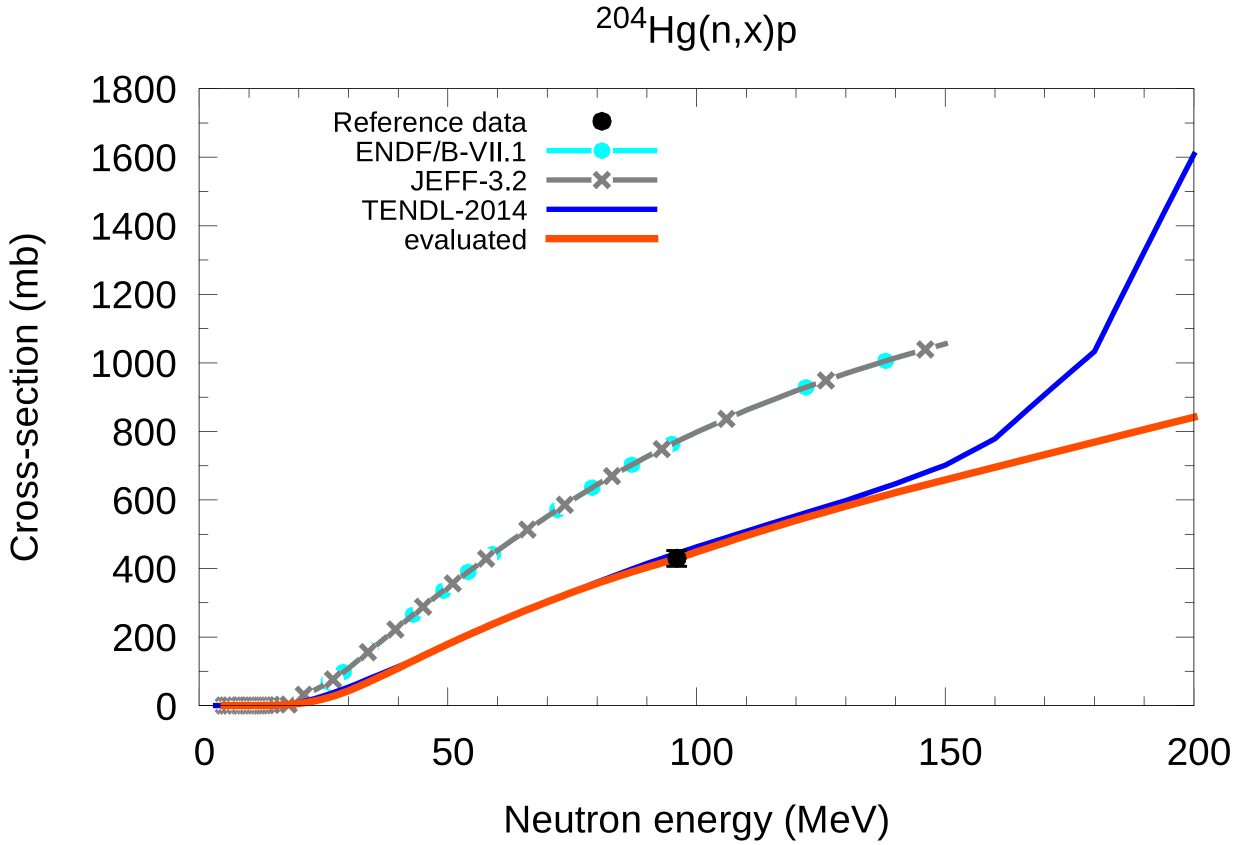
^{200}Hg(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
0
50
100
150
200



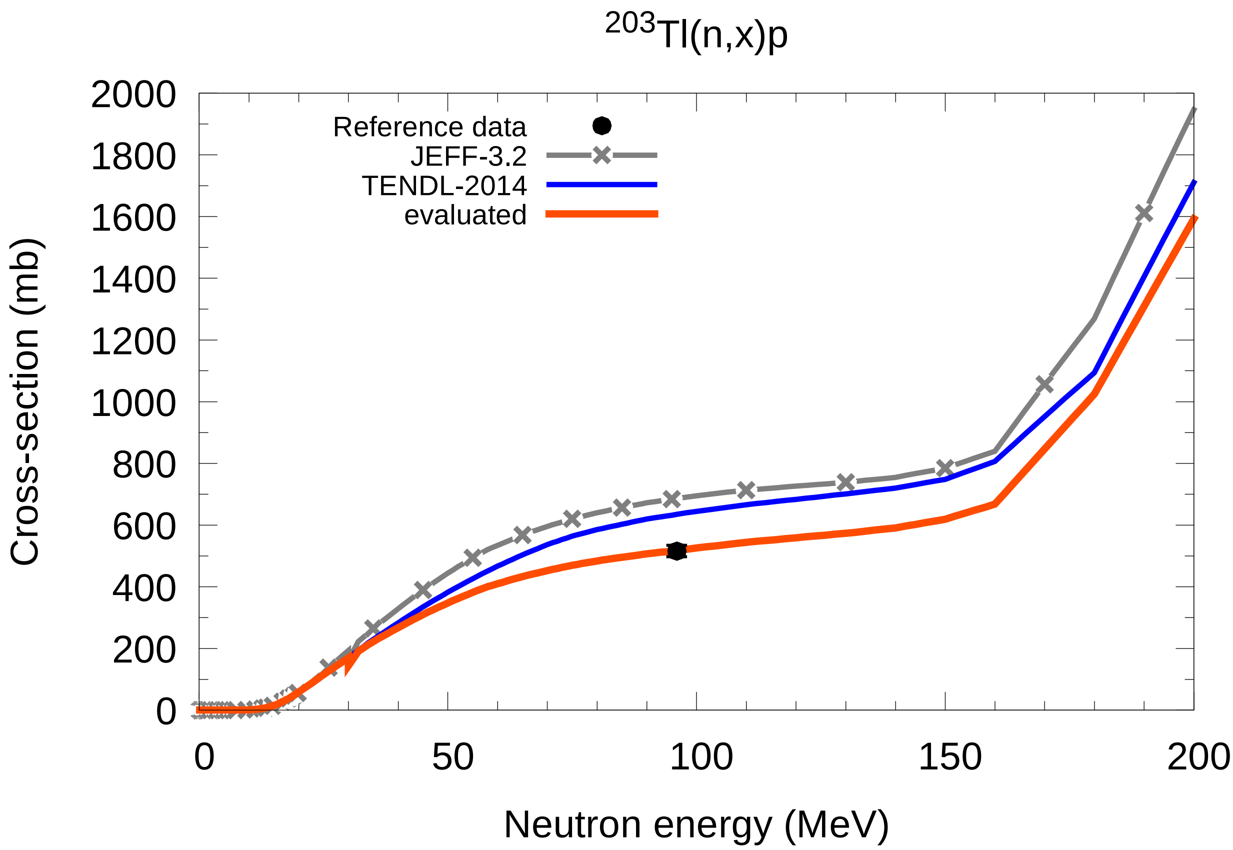
^{201}Hg(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
200
400
600
800
1000
1200
1400
1600
1800
0
50
100
150
200



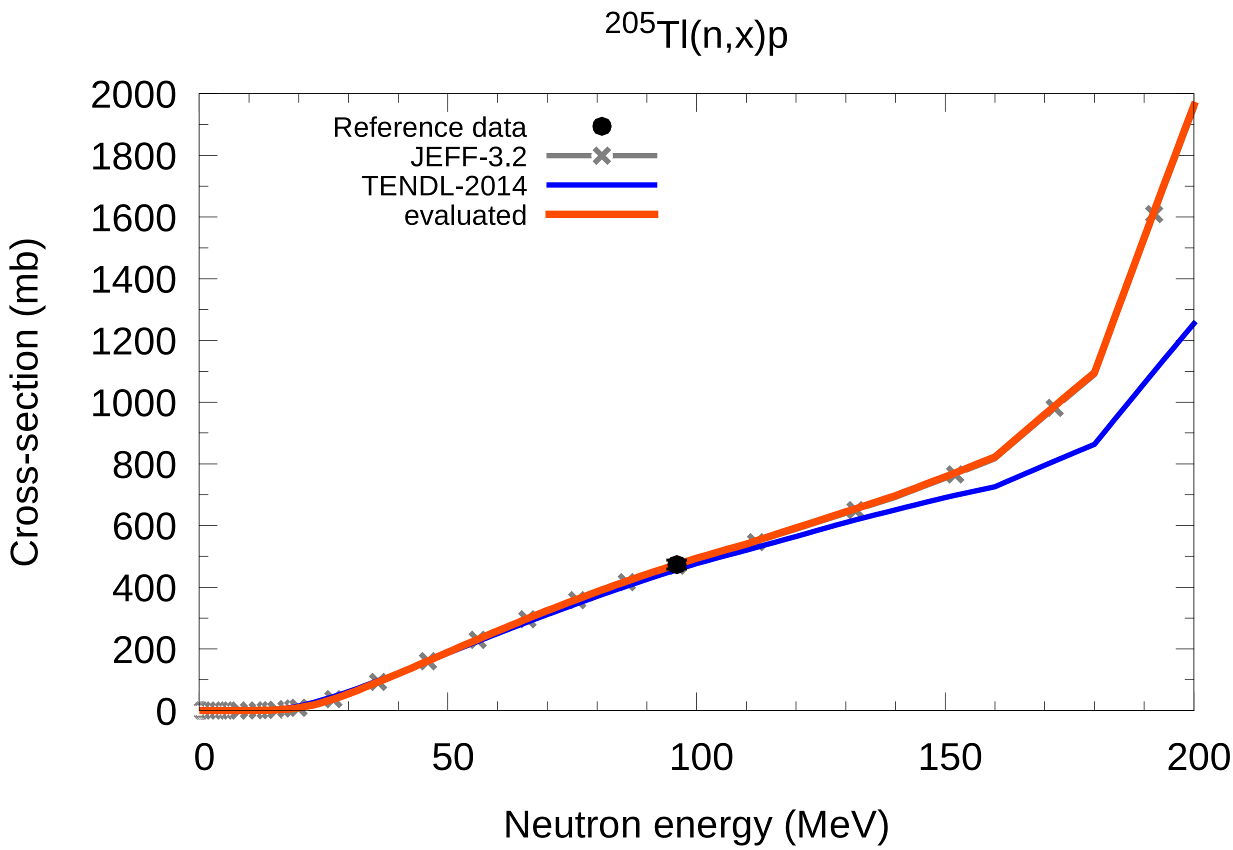
^{202}Hg(n,x)p
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
200
400
600
800
1000
1200
1400
1600
1800
0
50
100
150
200



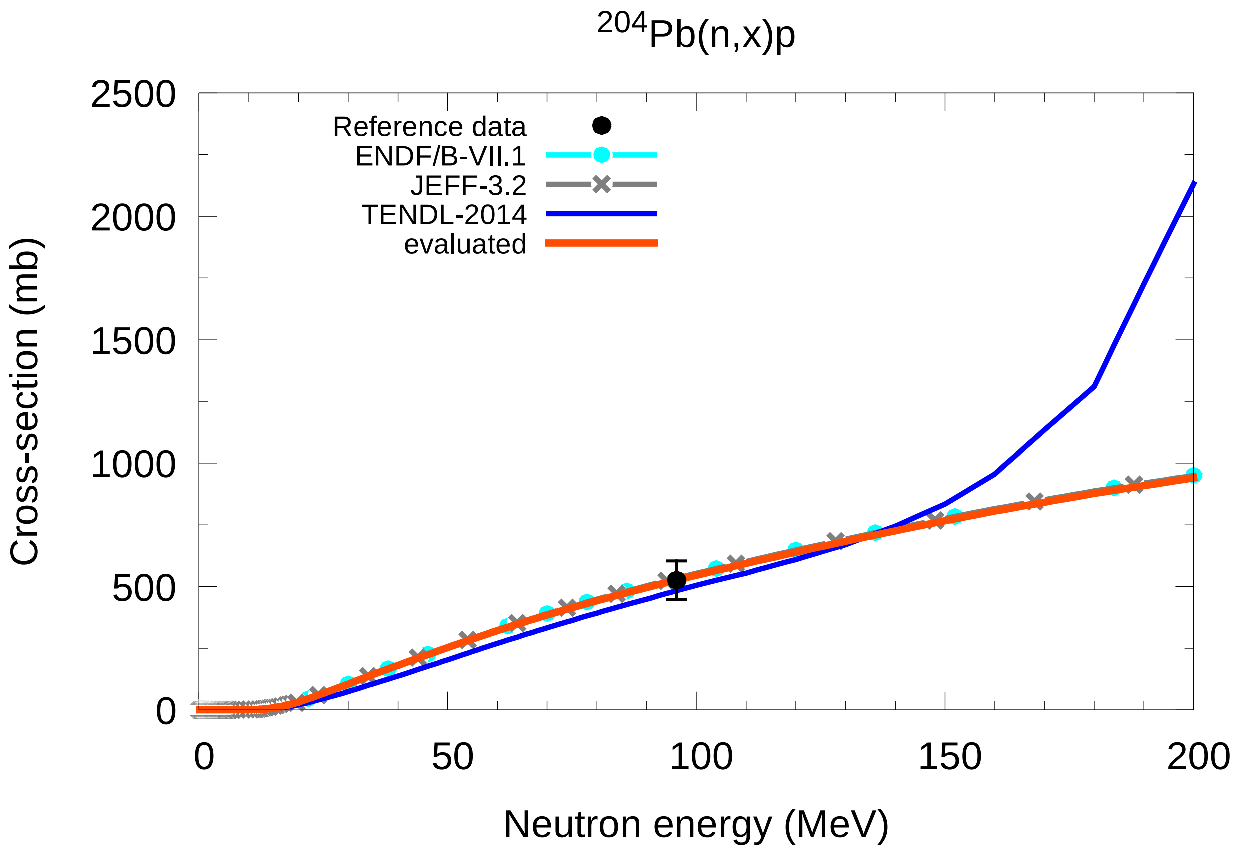
204Hg(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
0
200
400
600
800
1000
1200
1400
1600
1800



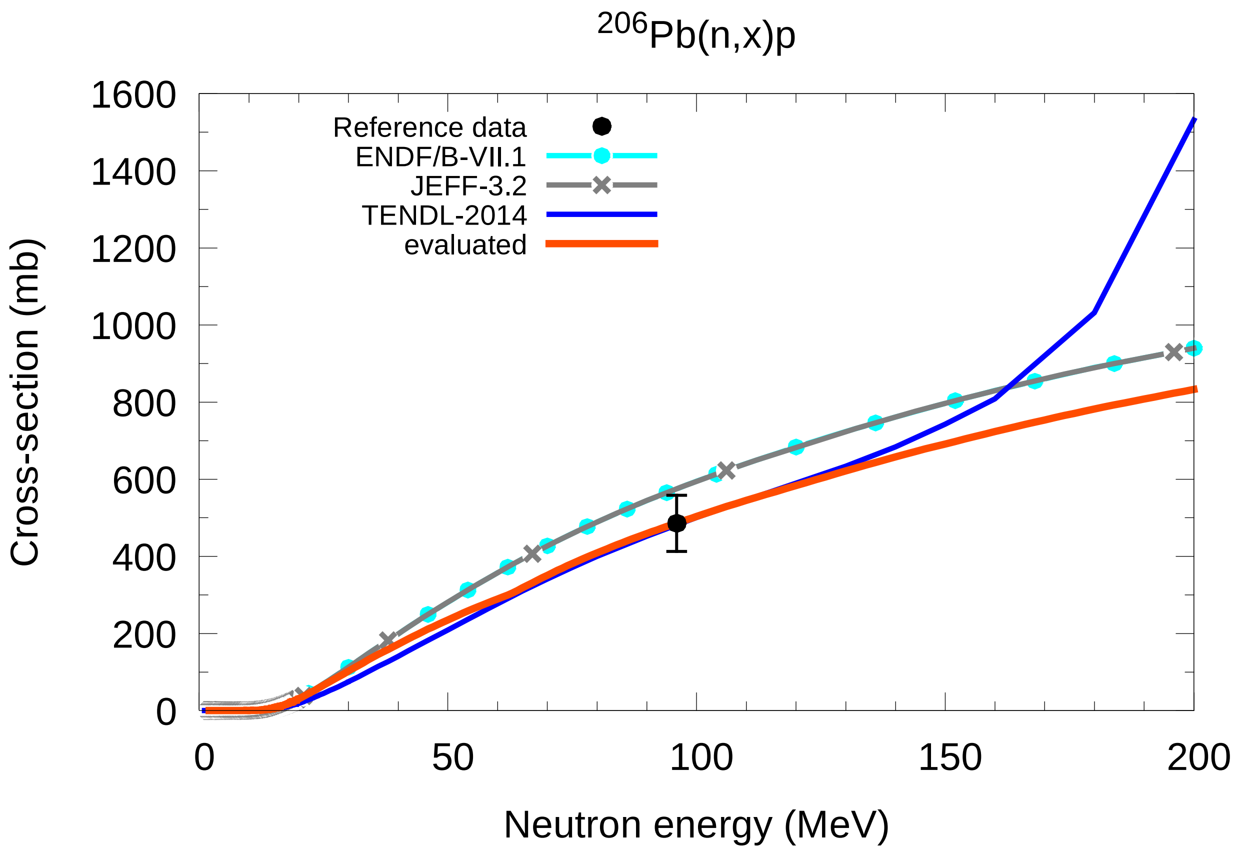
203Tl(n,x)p
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
0
200
400
600
800
1000
1200
1400
1600
1800
2000



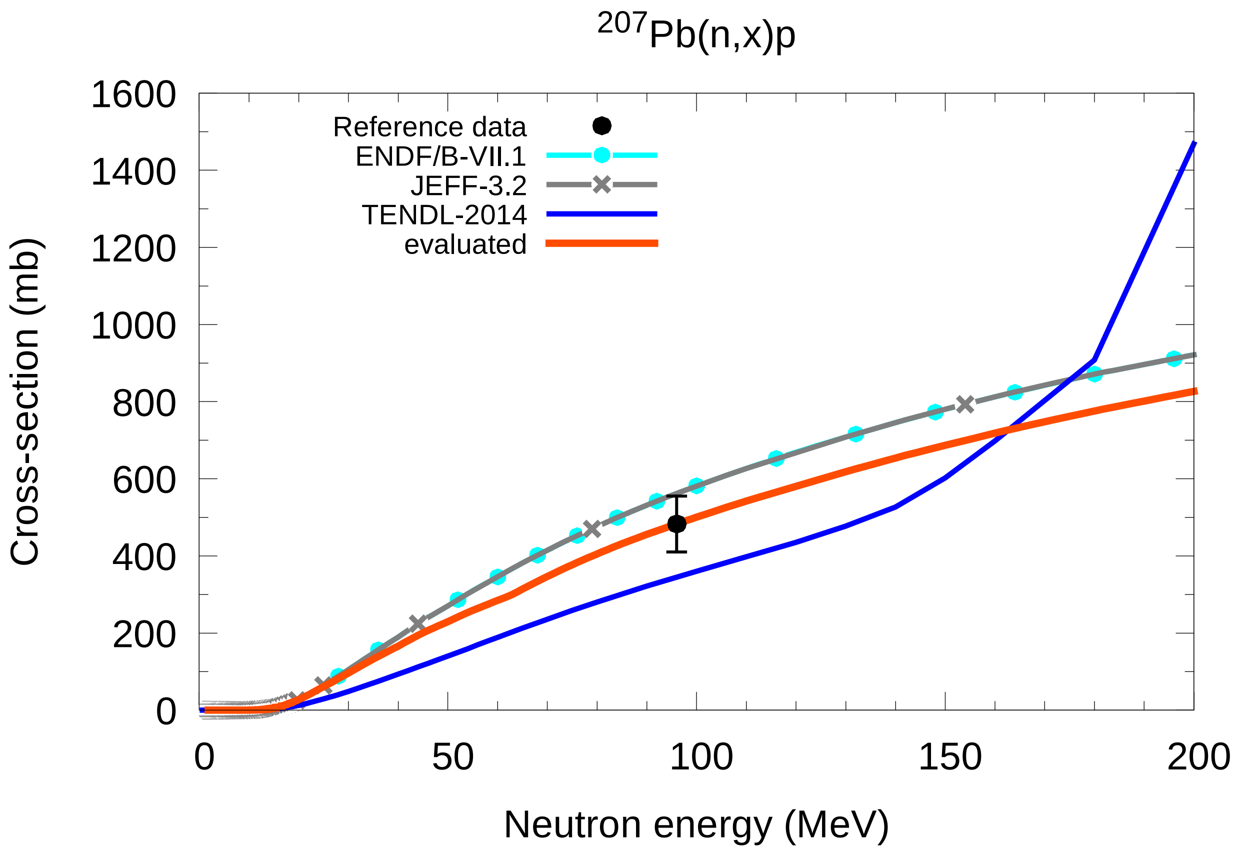
^{205}Tl(n,x)p
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0
50
100
150
200



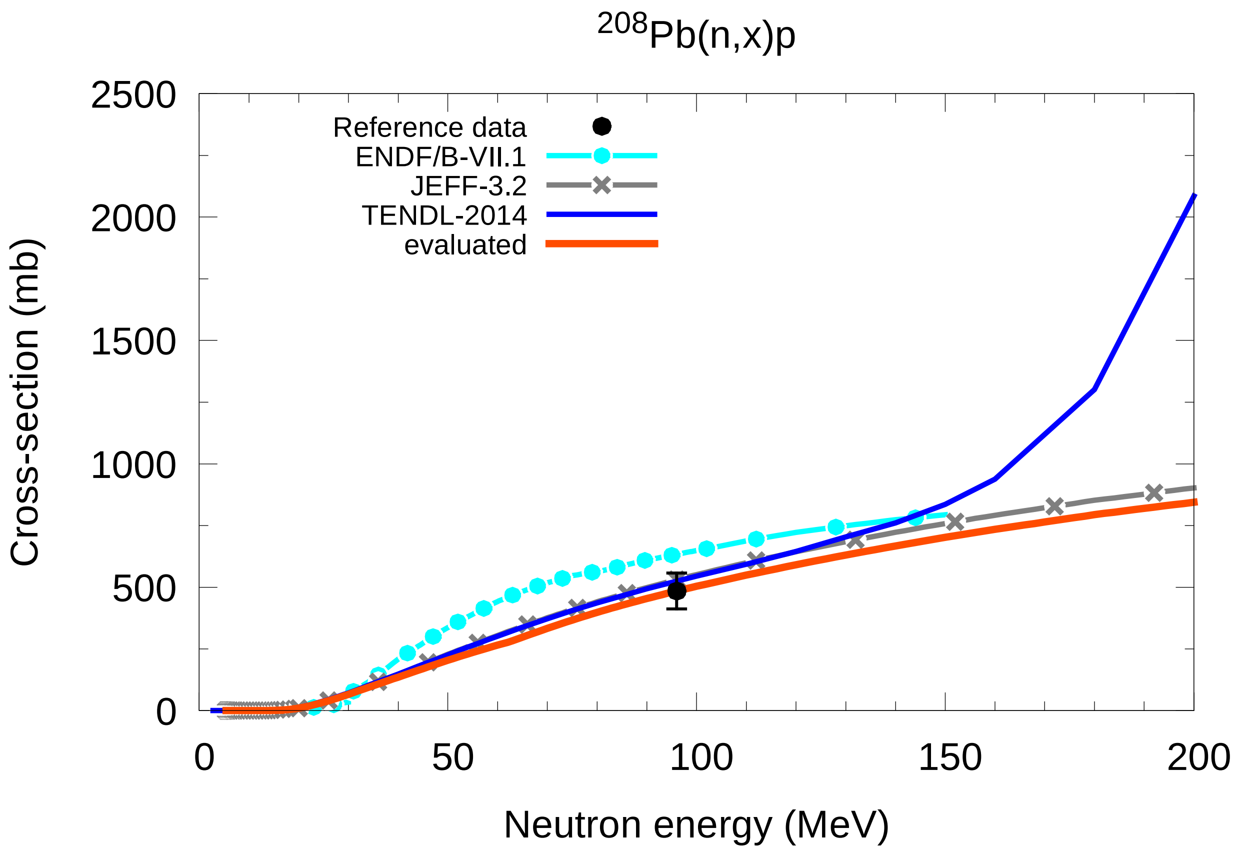
^{204}Pb(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



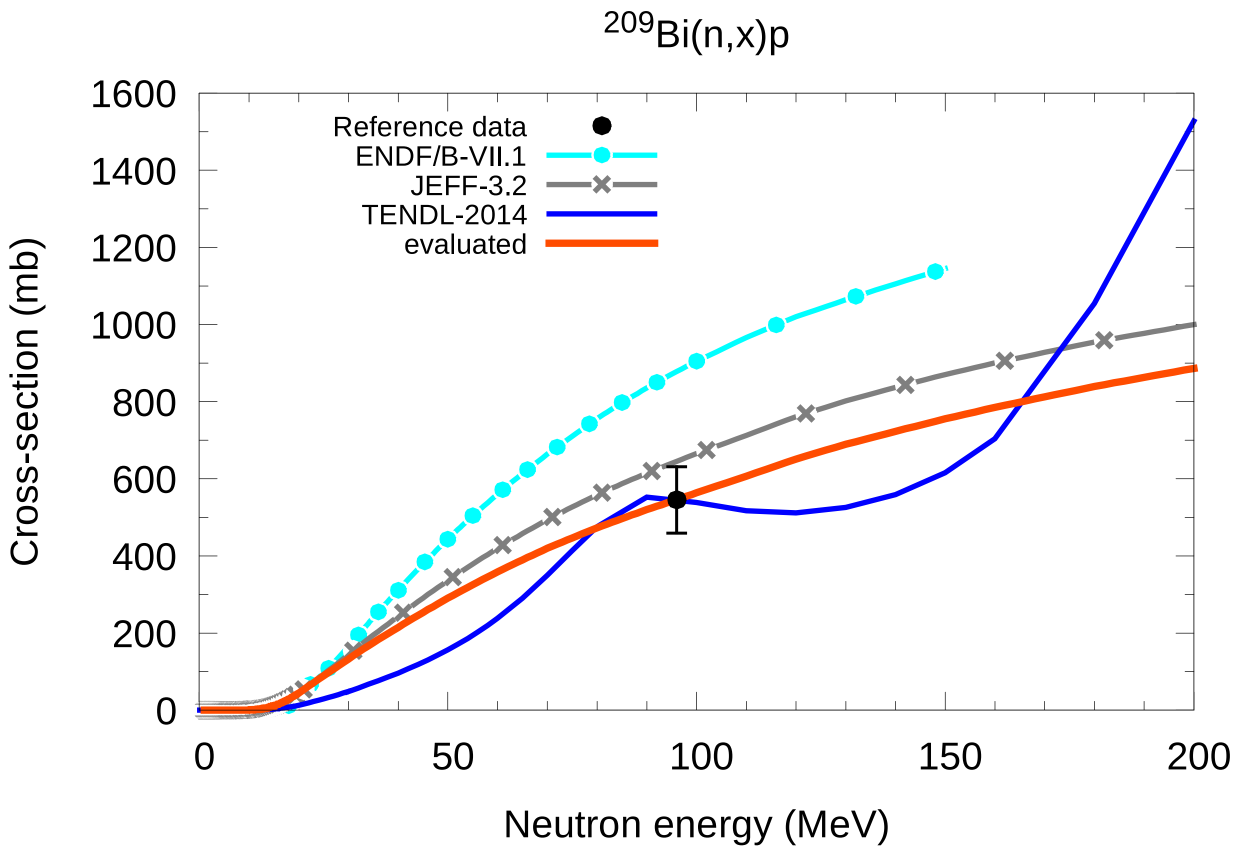
$^{206}Pb(n,x)p$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
1600
1400
1200
1000
800
600
400
200
0
0
50
100
150
200
Neutron energy (MeV)



$^{207}Pb(n,x)p$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
1600
1400
1200
1000
800
600
400
200
0
0
50
100
150
200
Neutron energy (MeV)



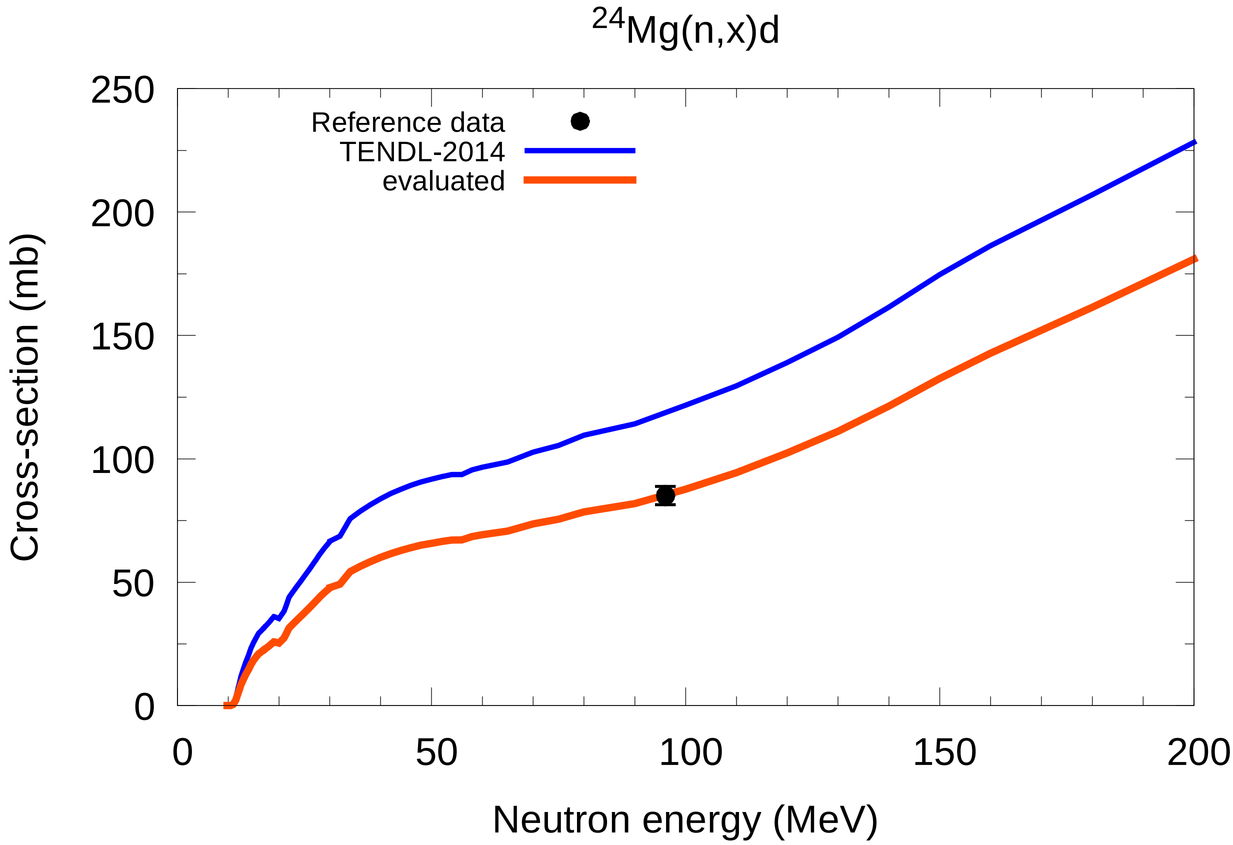
^{208}Pb(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
500
1000
1500
2000
2500
0
50
100
150
200



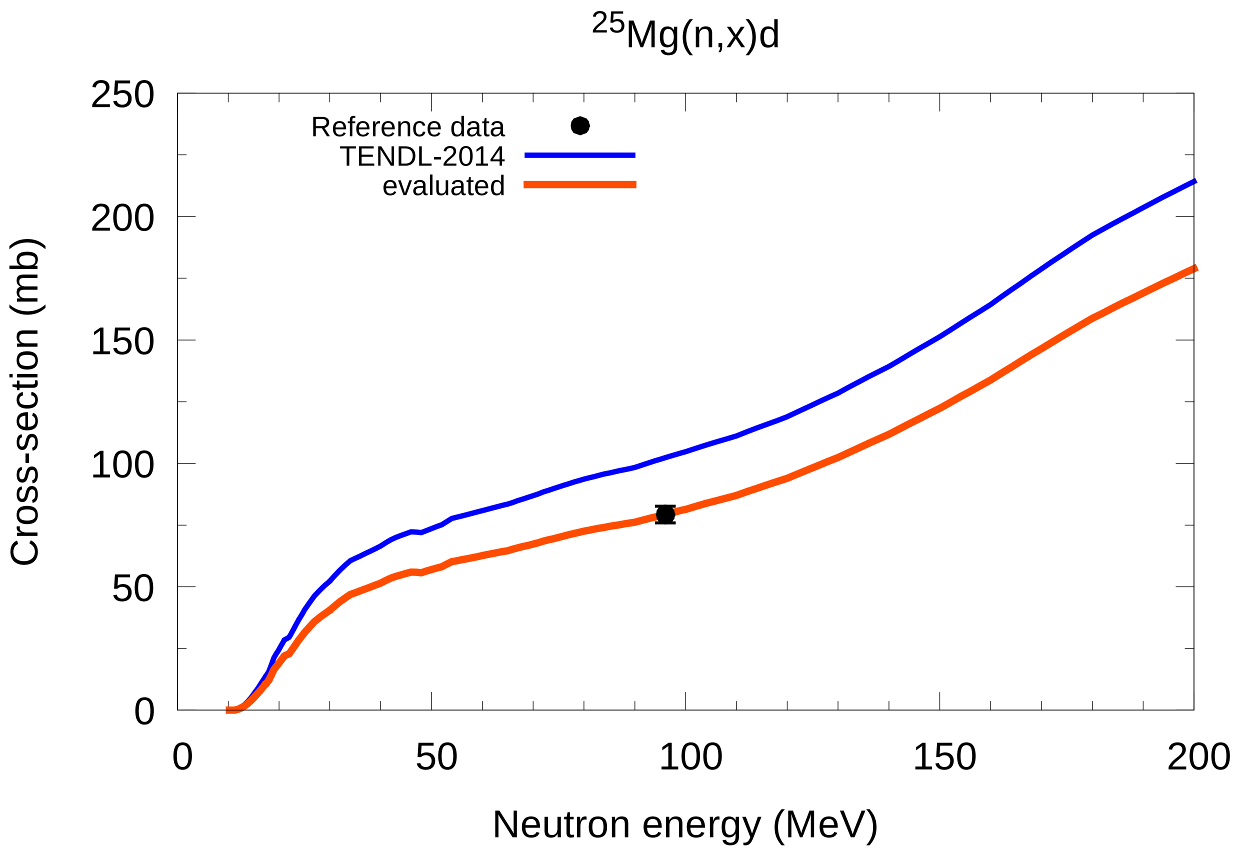
^{209}Bi(n,x)p
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
1600
0
50
100
150
200

Appendix B

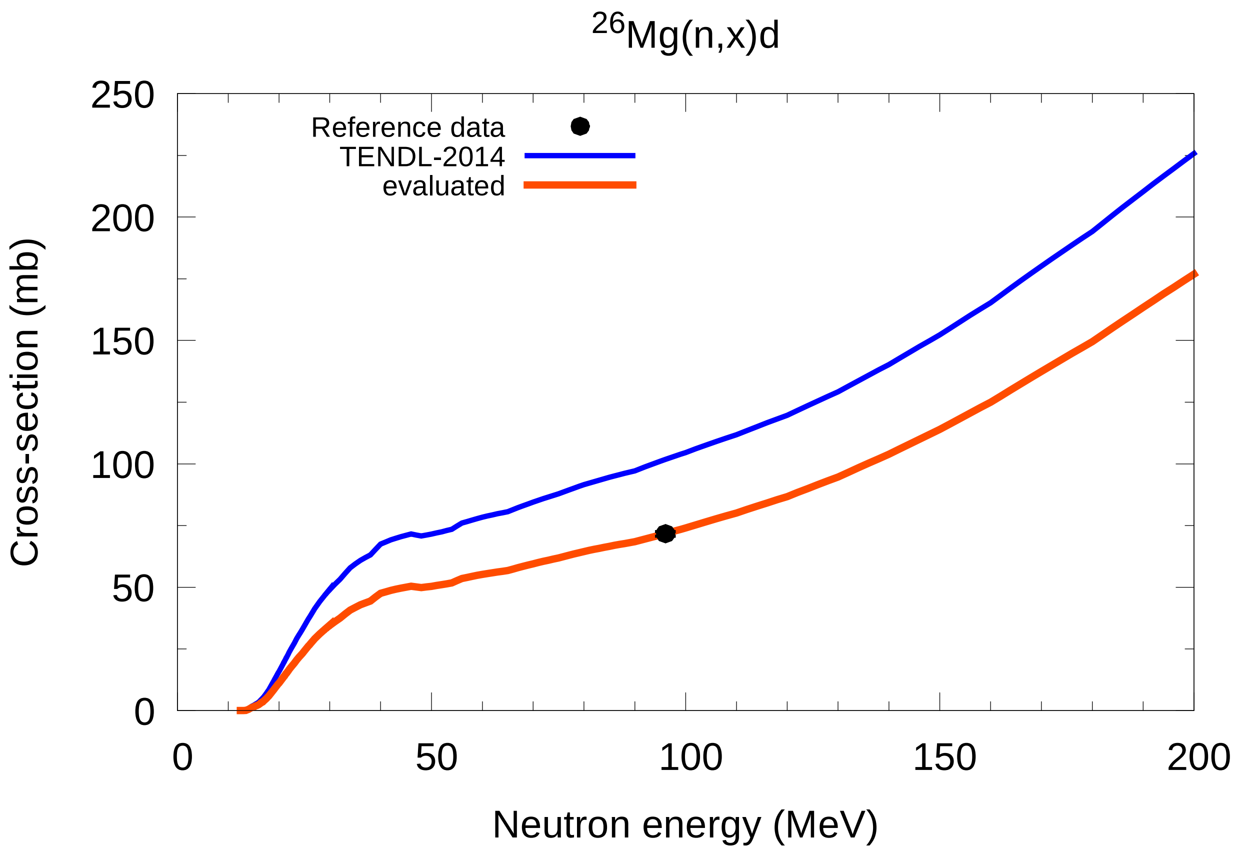
Evaluated deuteron production cross-sections, data from ENDF/B-VII.1, JEFF-3.2, and TENDL-2014, and cross-sections at 96 MeV estimated using the $\sigma(A)$-dependence



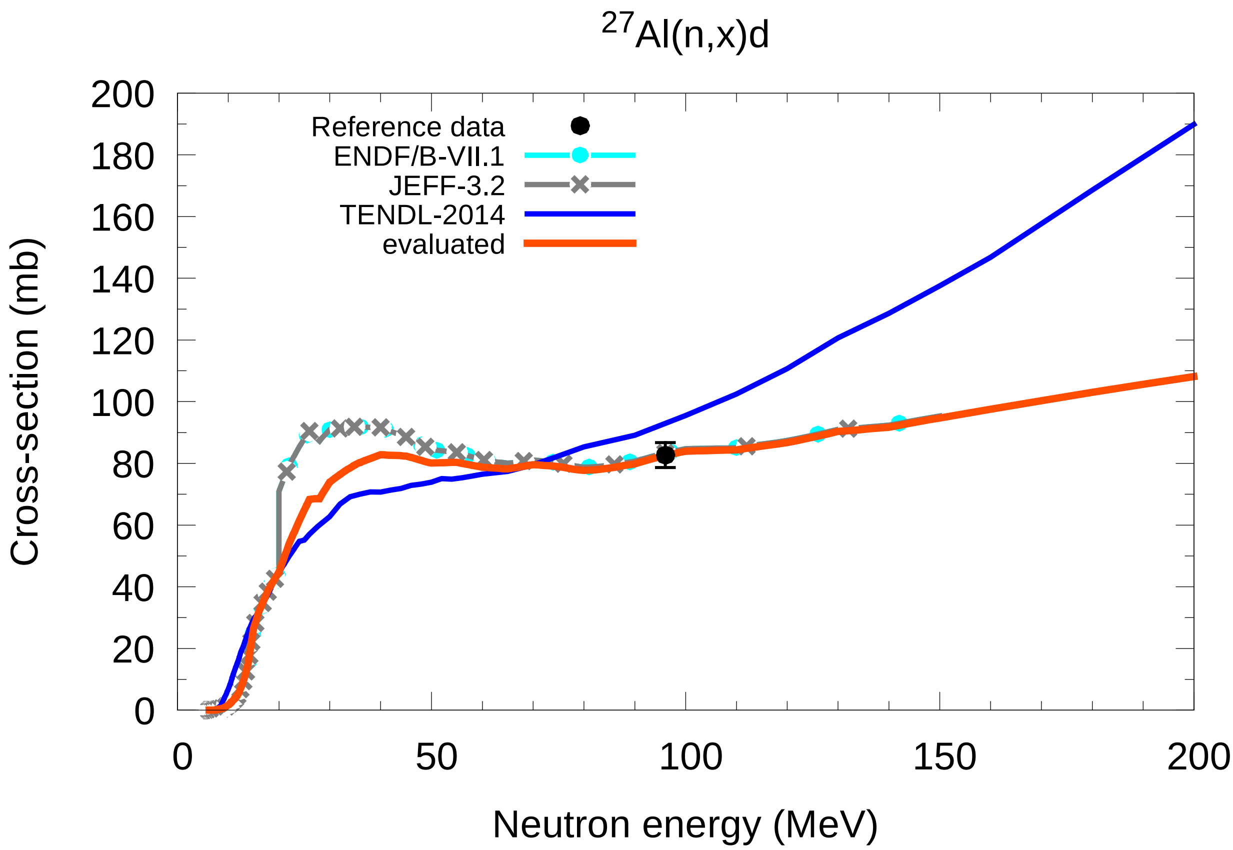
^{24}Mg(n,x)d
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
0
50
100
150
200



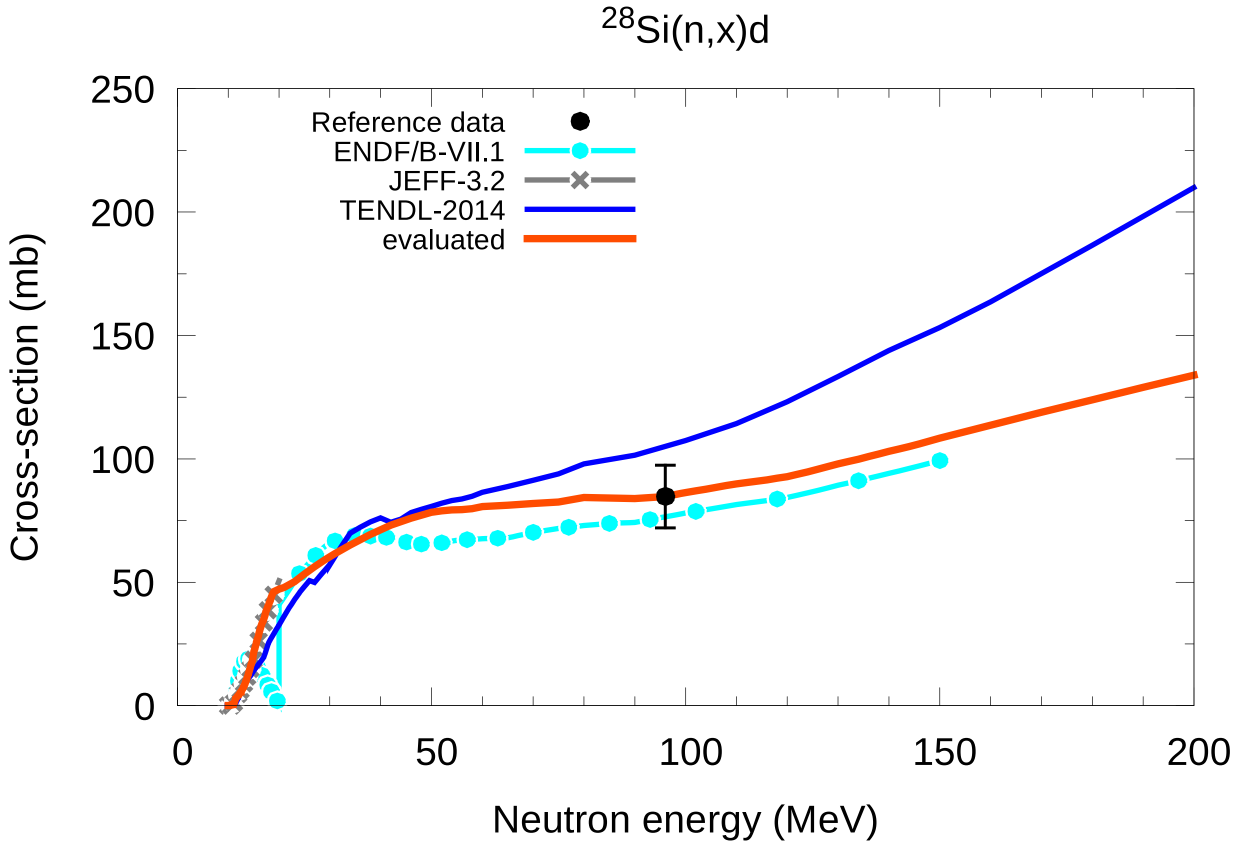
^{25}Mg(n,x)d
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
0
50
100
150
200



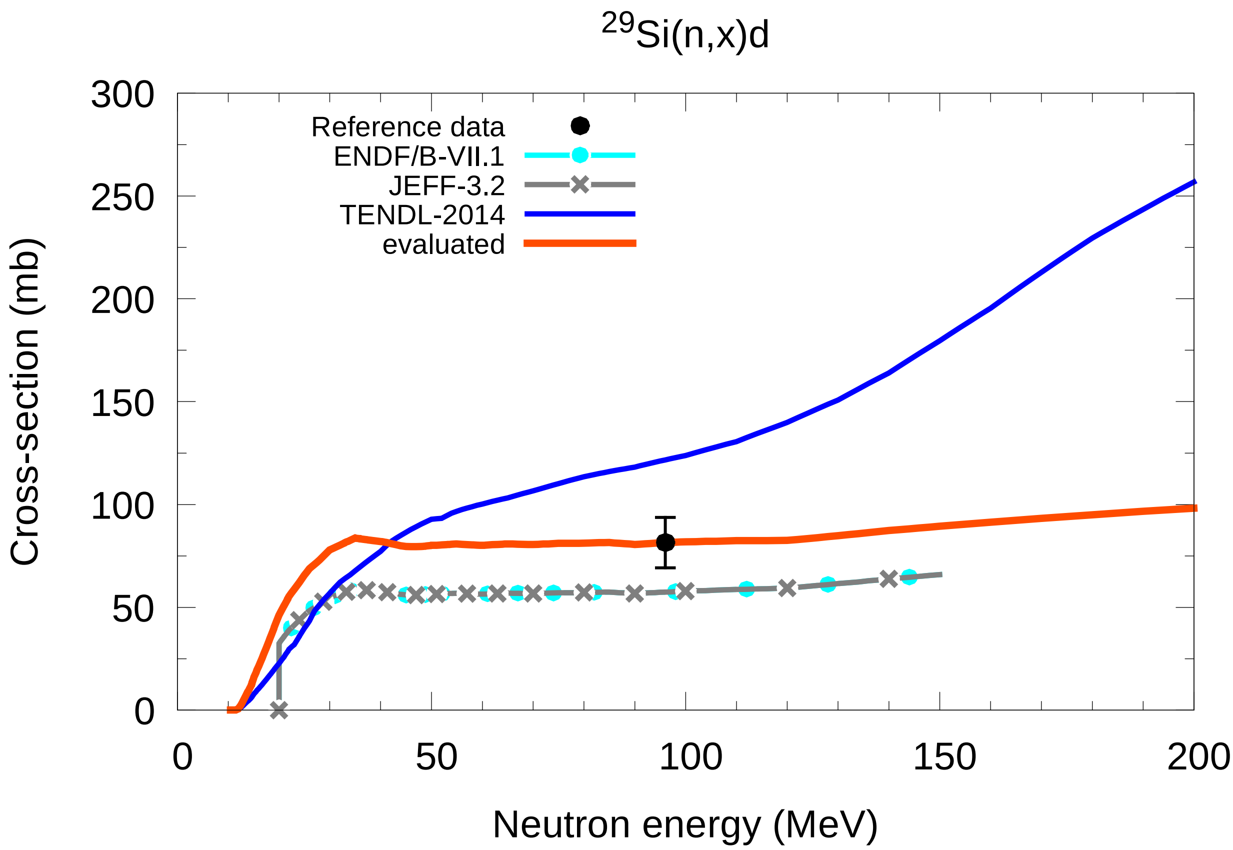
^{26}Mg(n,x)d
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



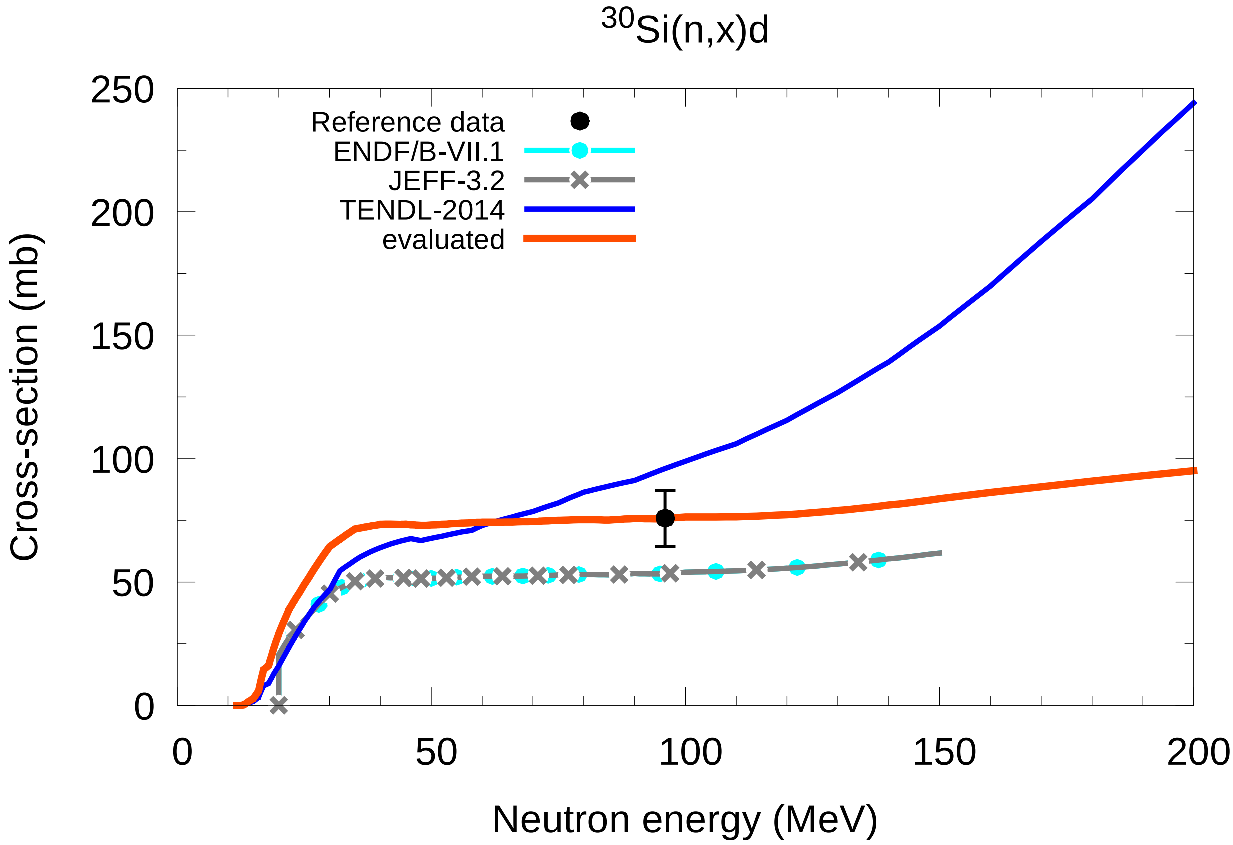
^{27}Al(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200



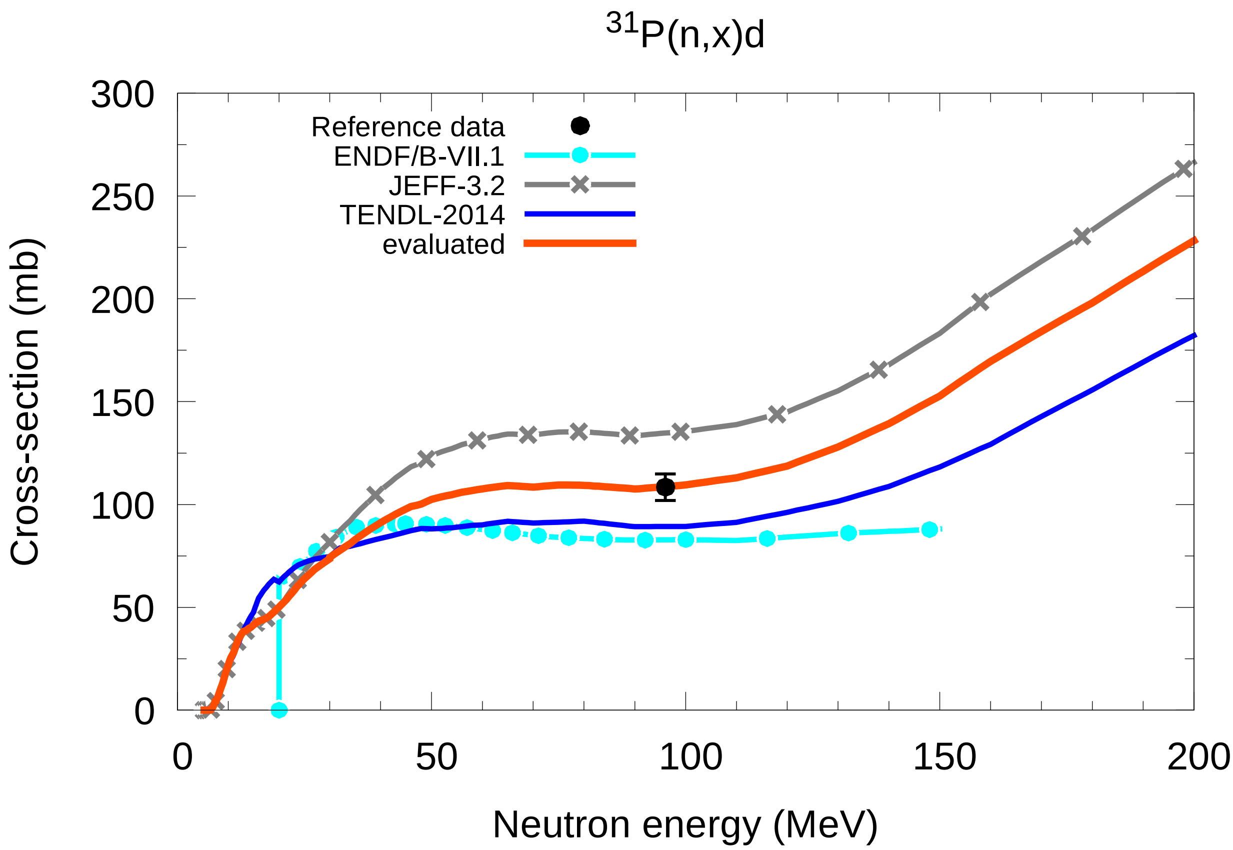
^{28}Si(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



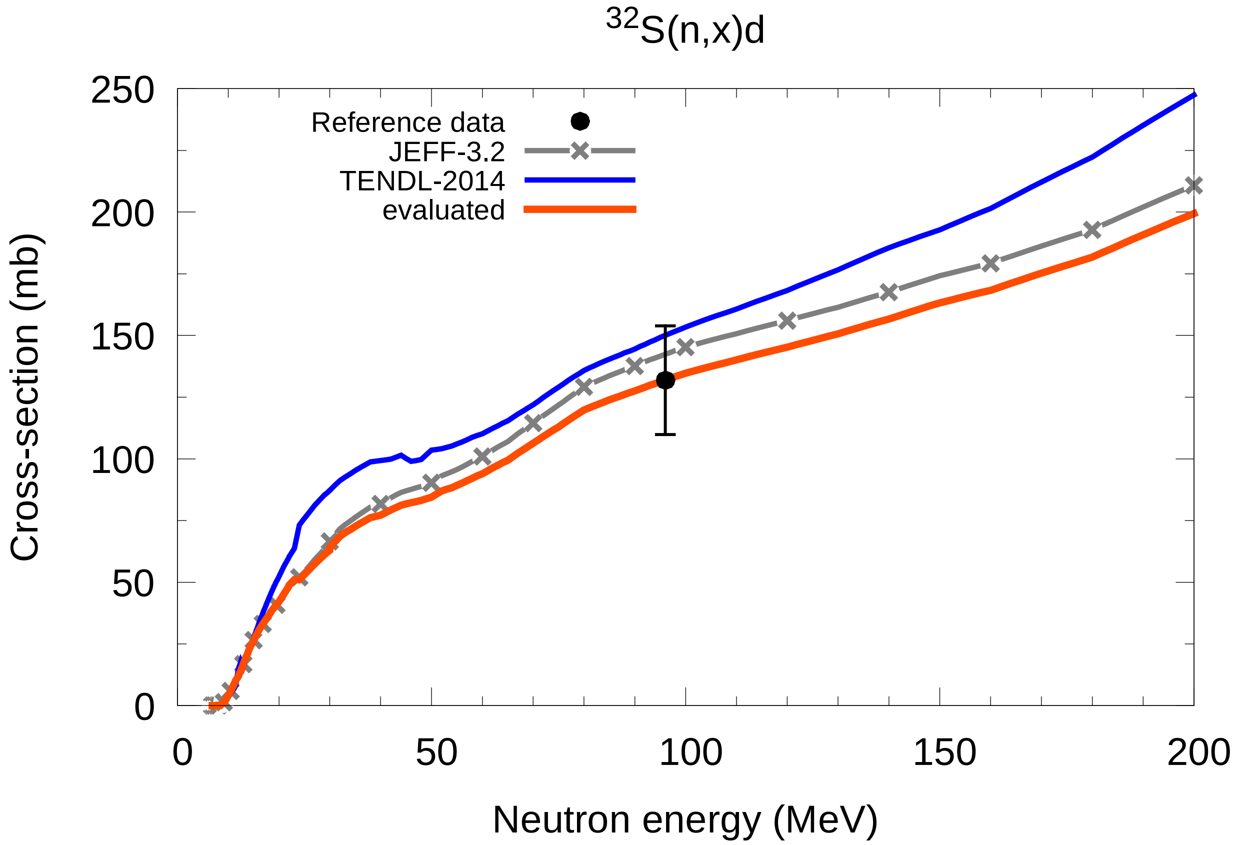
^{29}Si(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



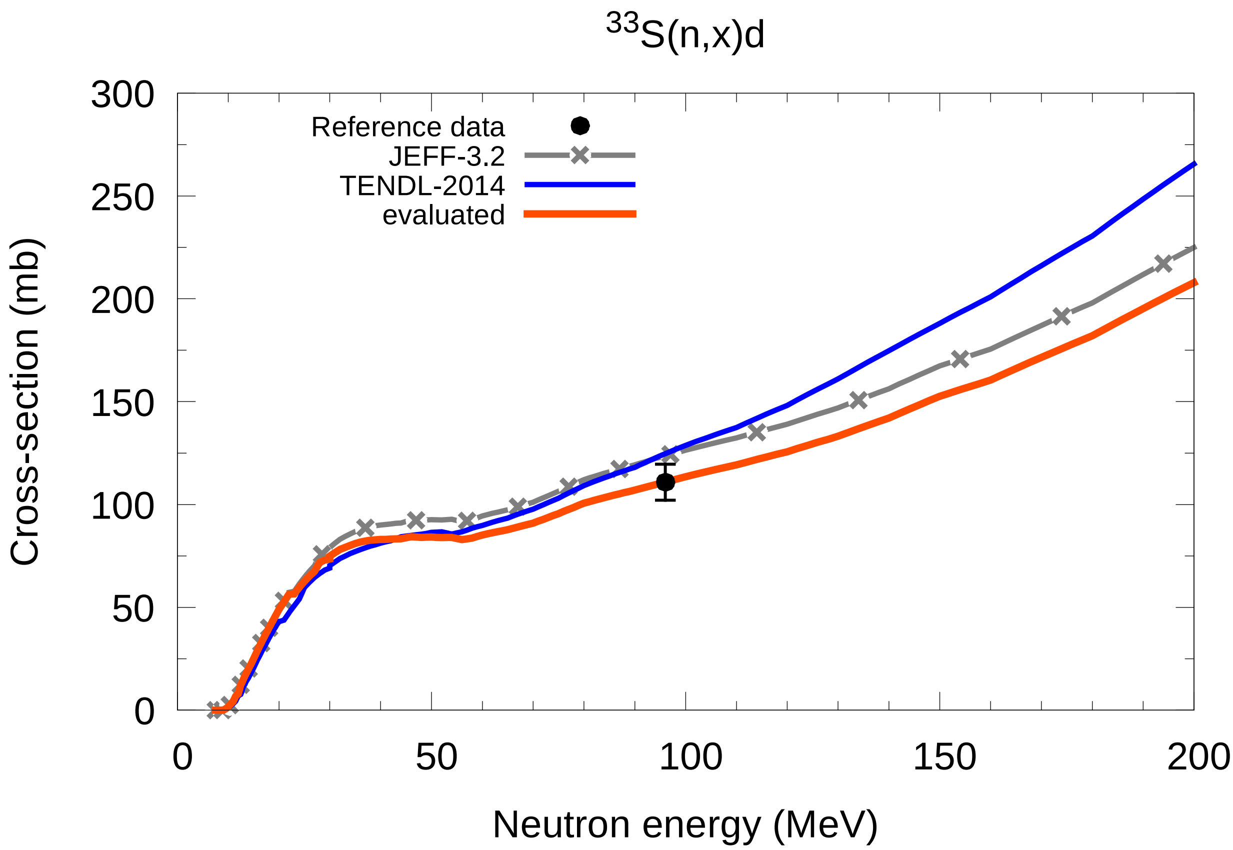
30Si(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



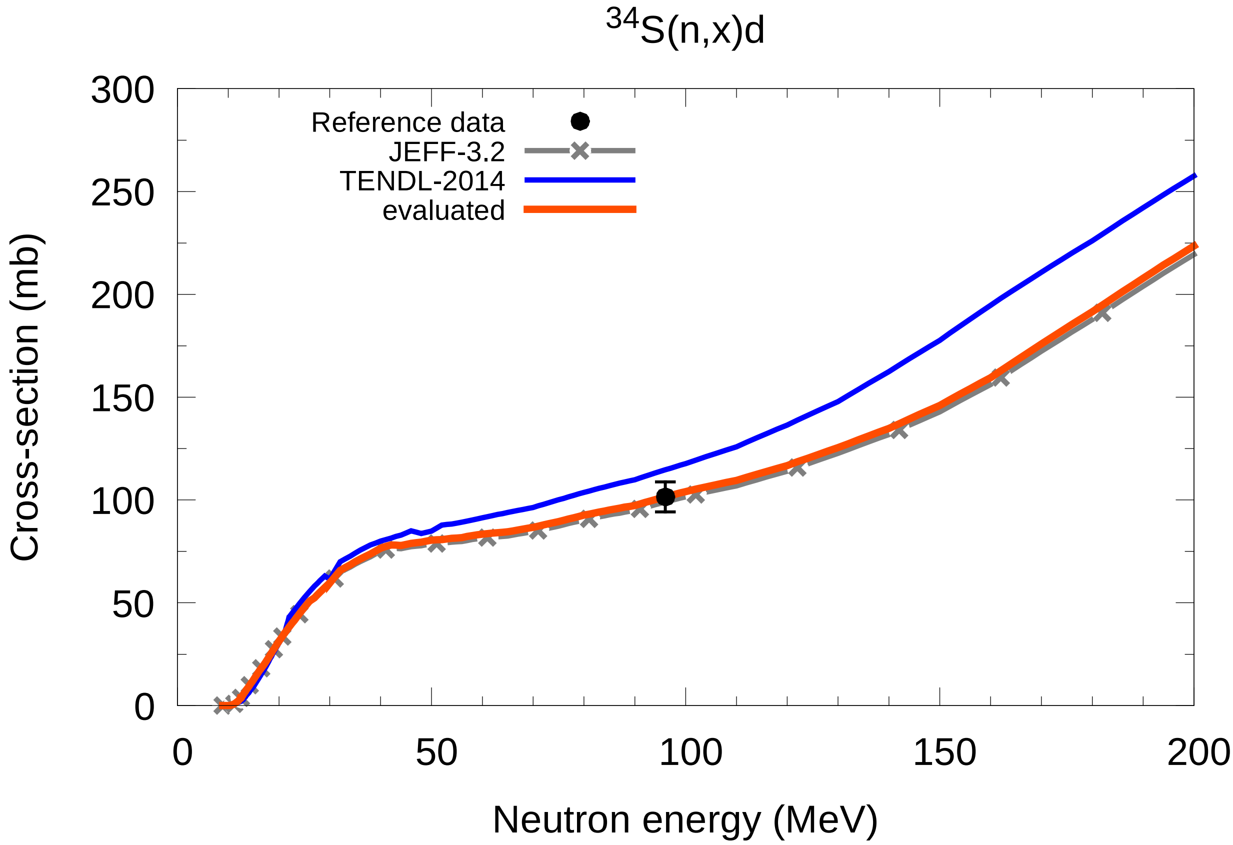
31P(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300

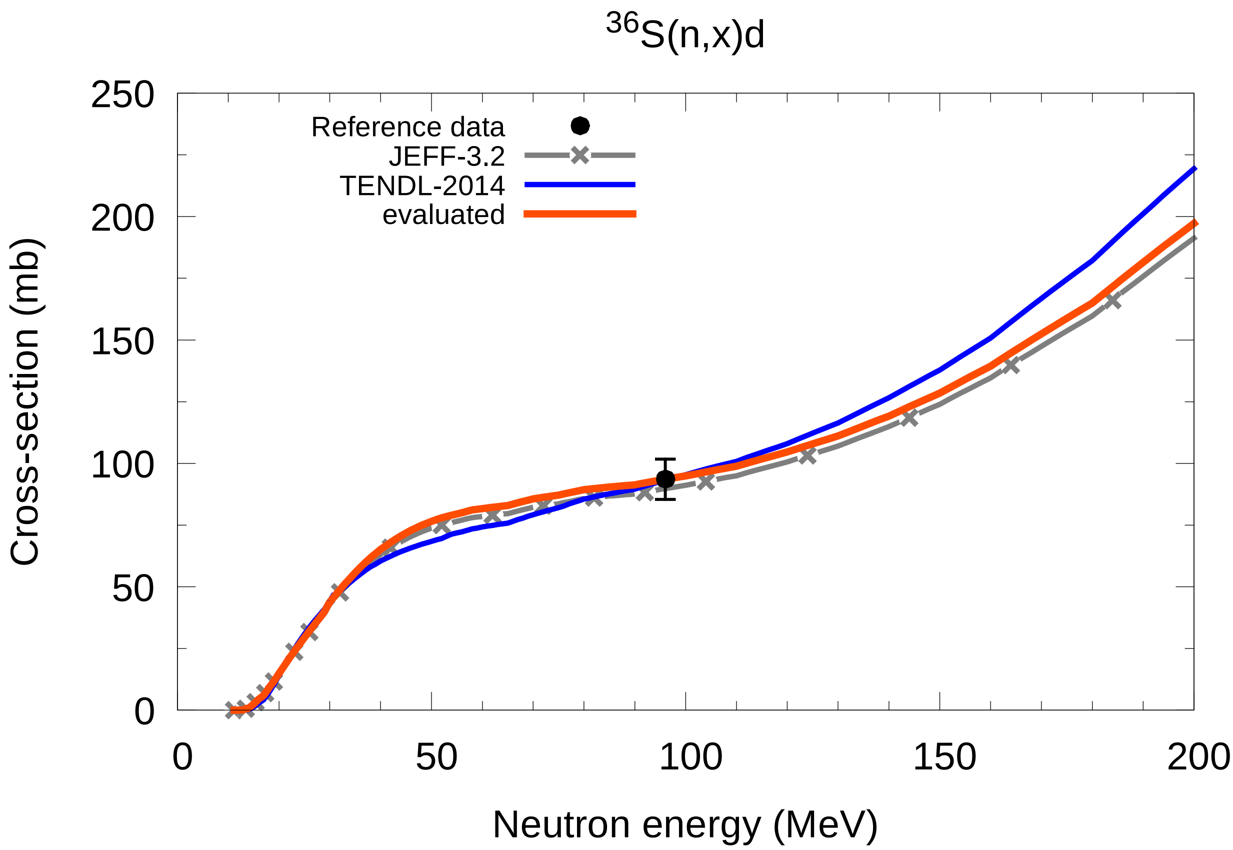


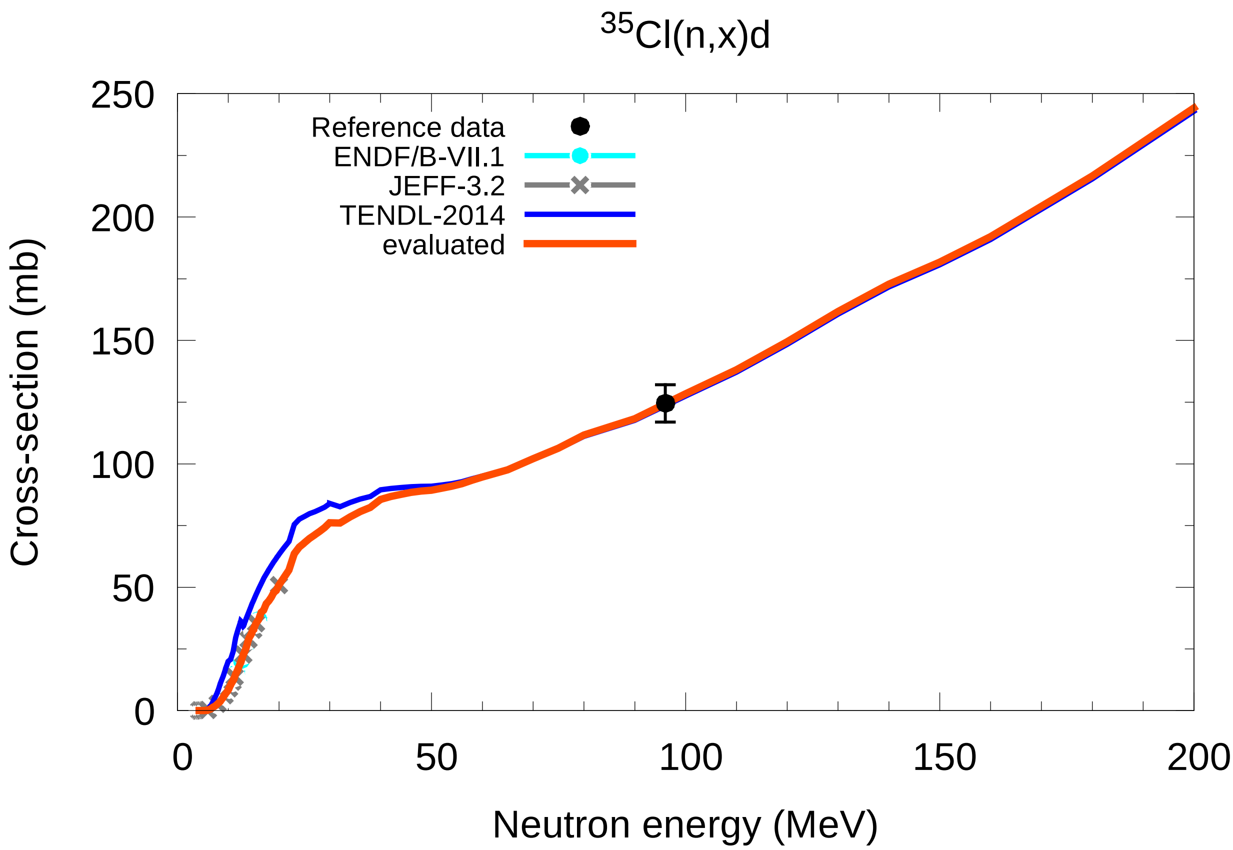
$^{32}S(n,x)d$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



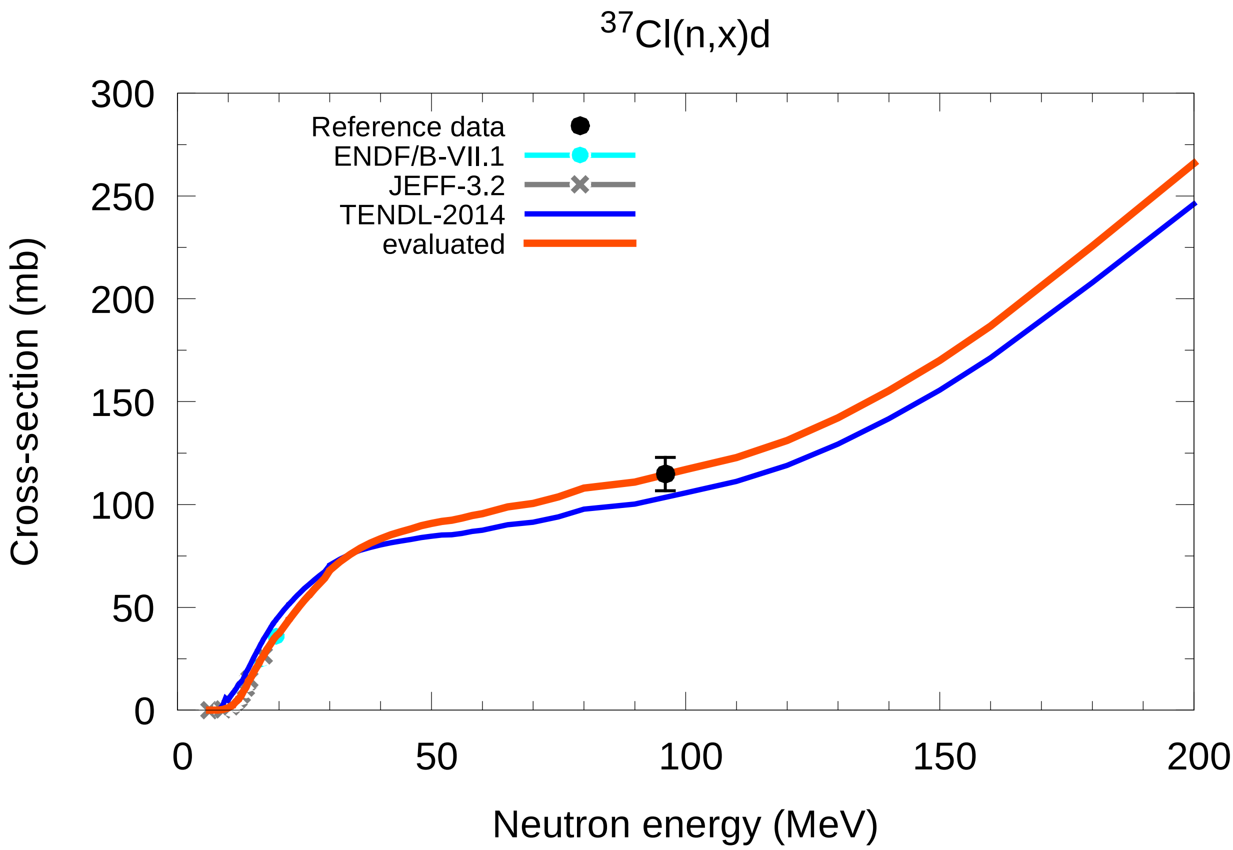
$^{33}S(n,x)d$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300


^{34}S(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300

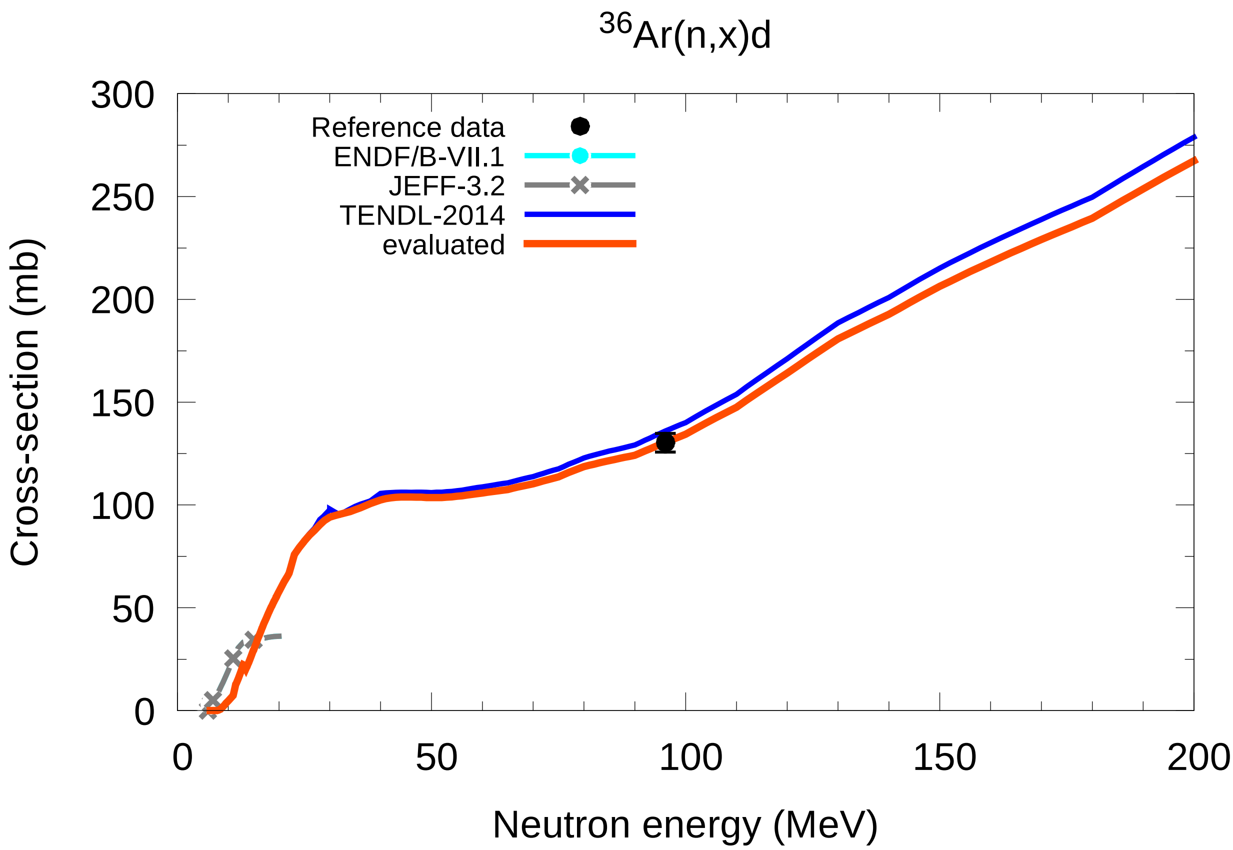

^{36}S(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



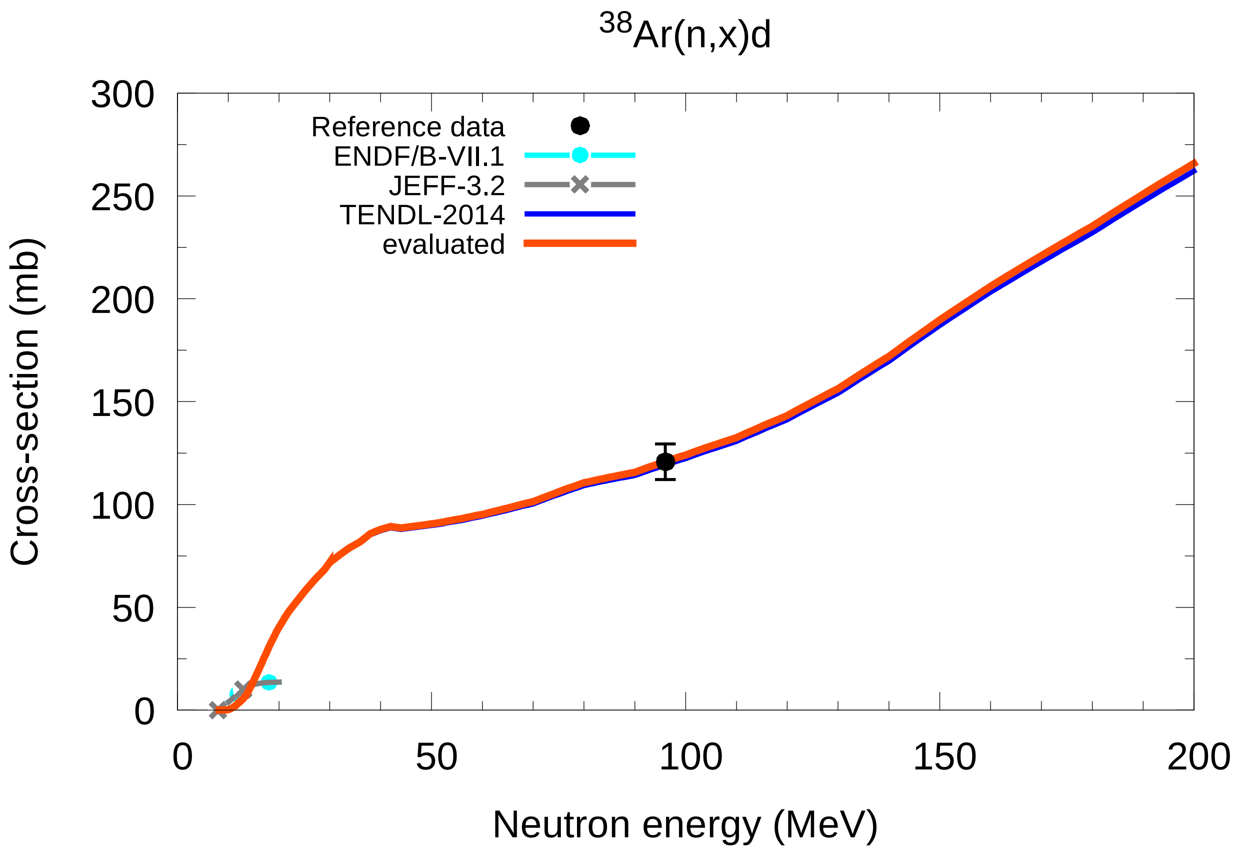
$^{35}Cl(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



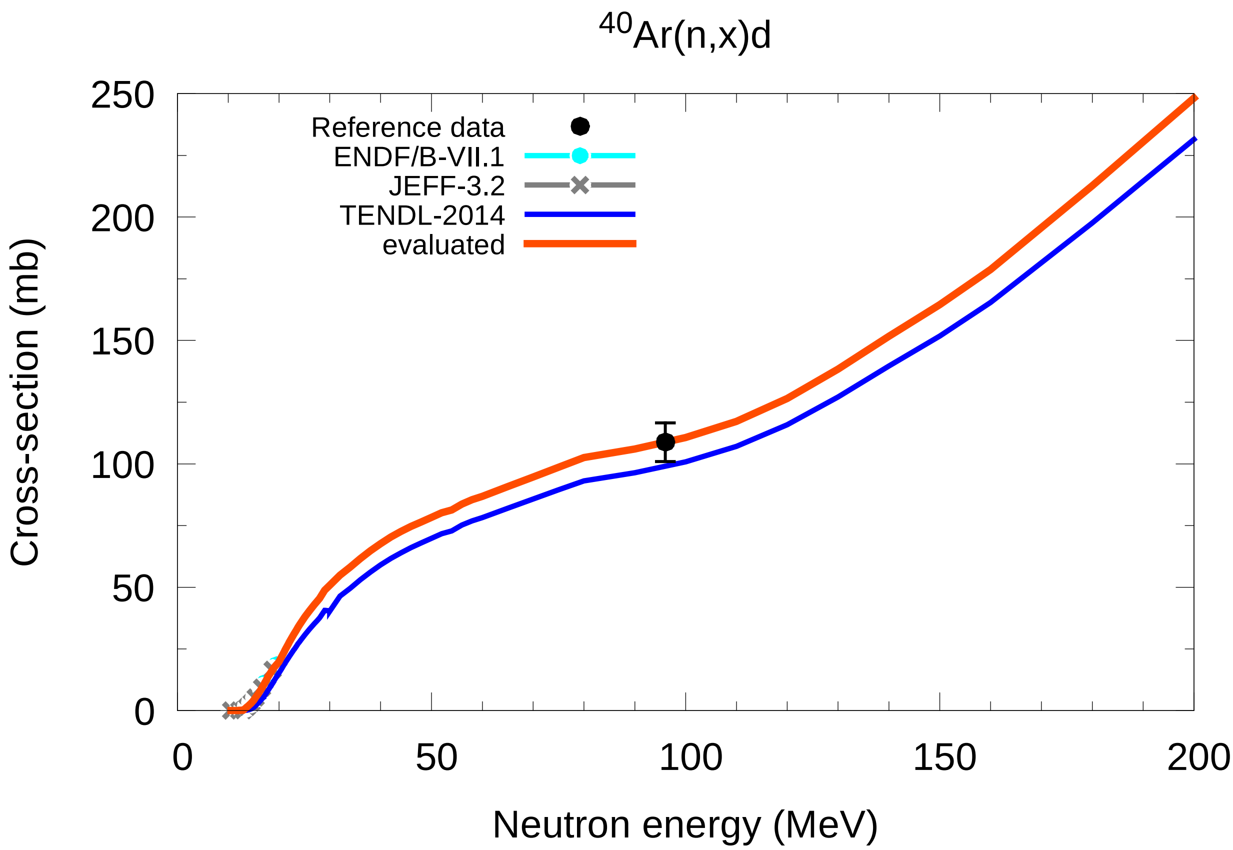
$^{37}Cl(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



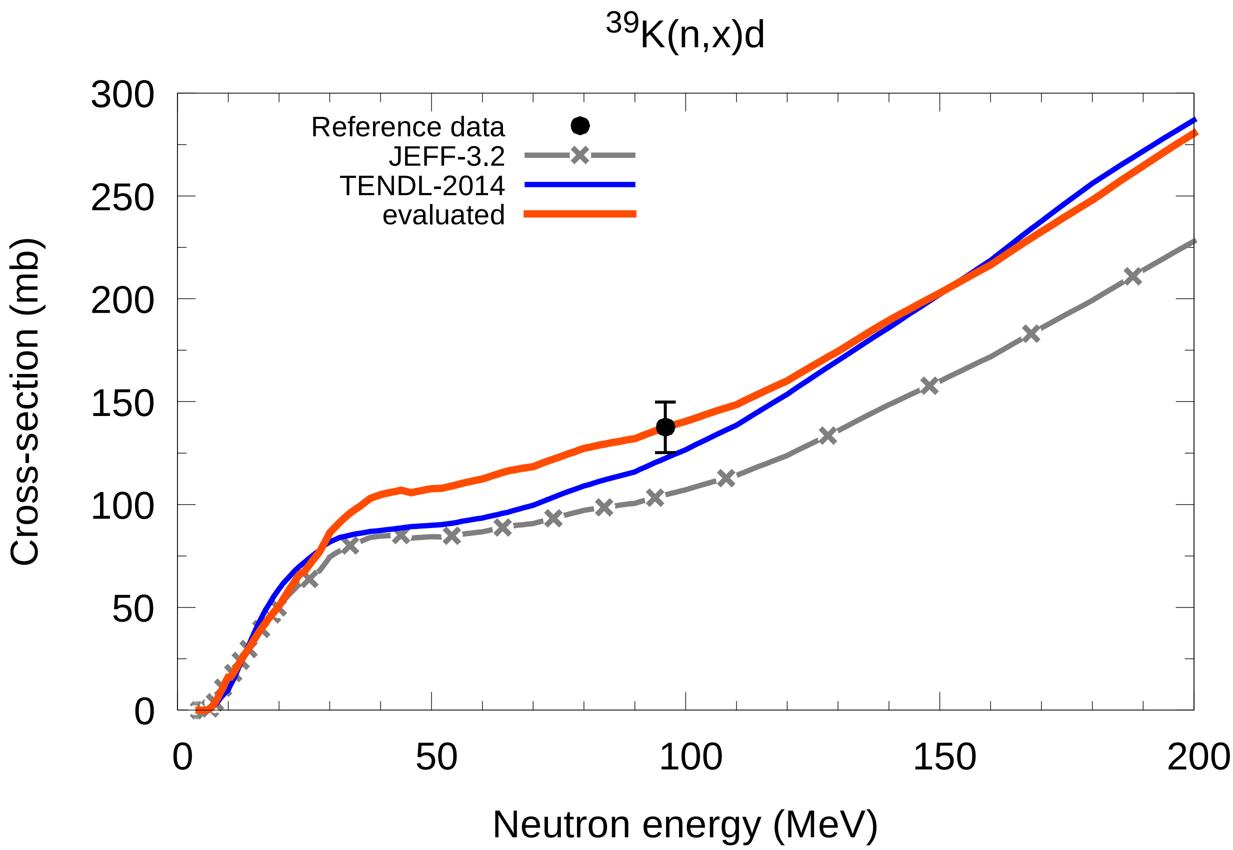
^{36}Ar(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



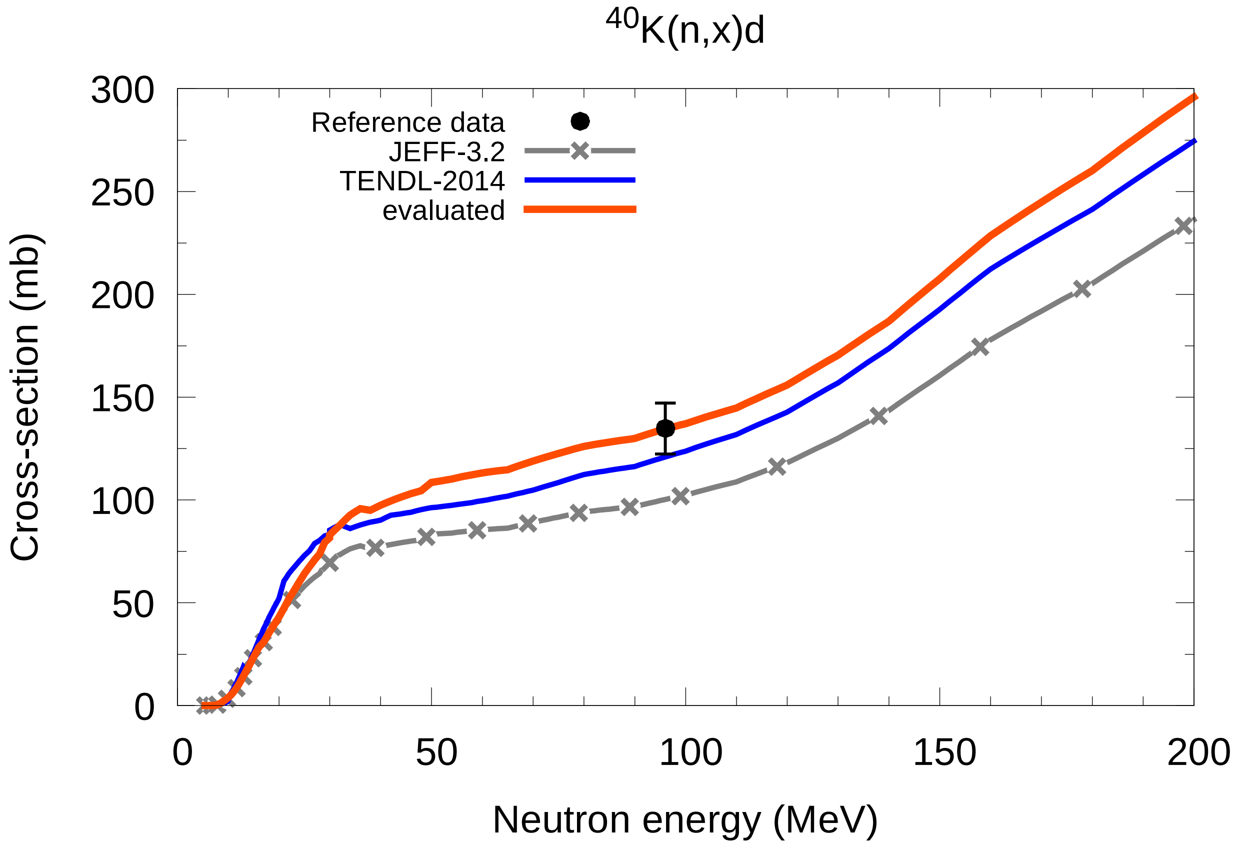
^{38}Ar(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



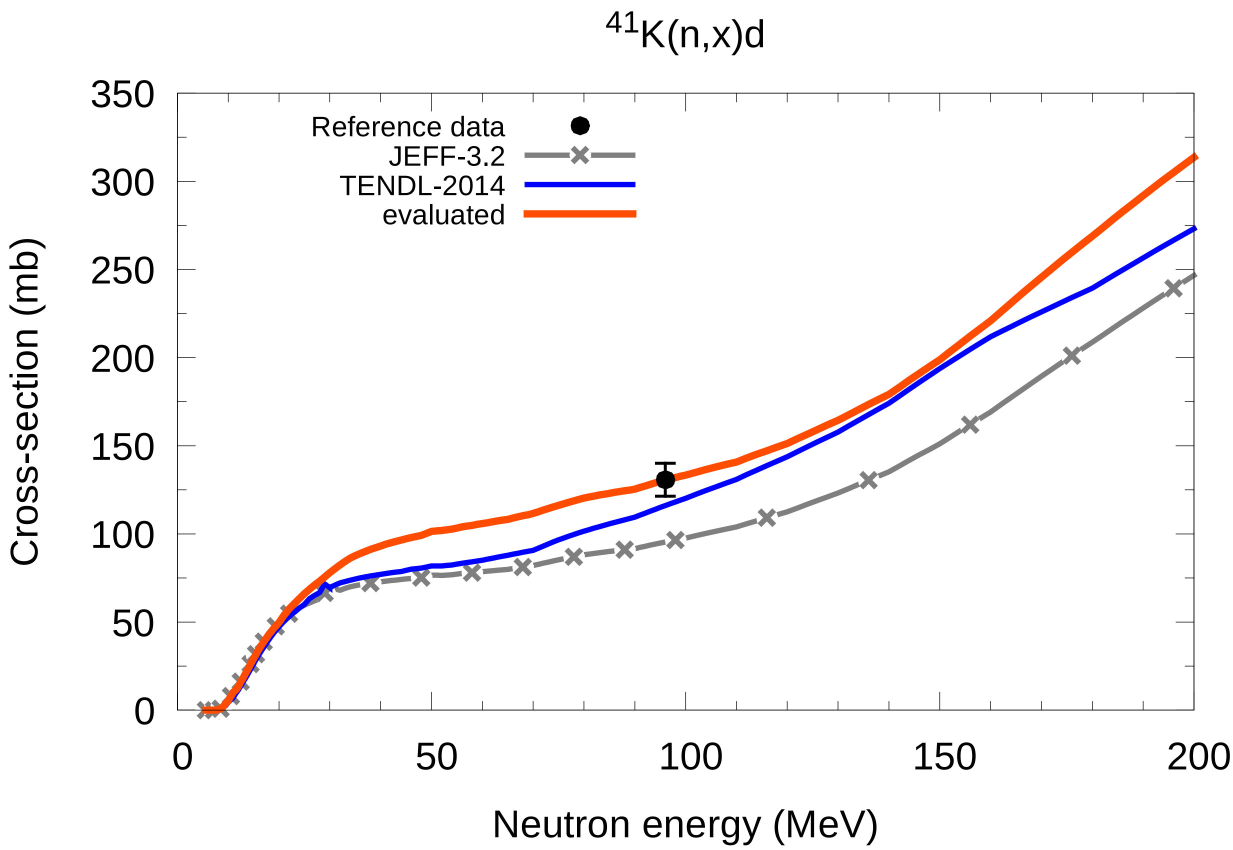
^{40}Ar(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



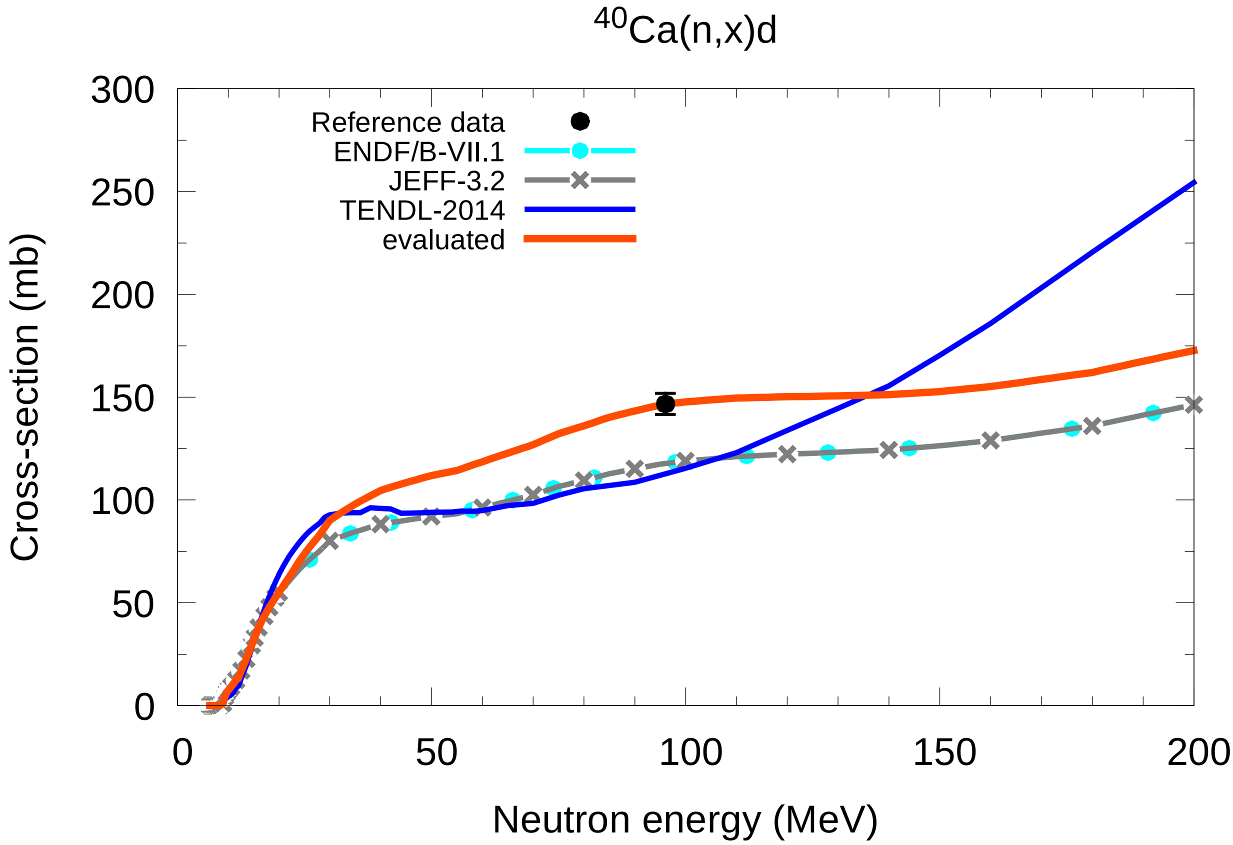
^{39}K(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



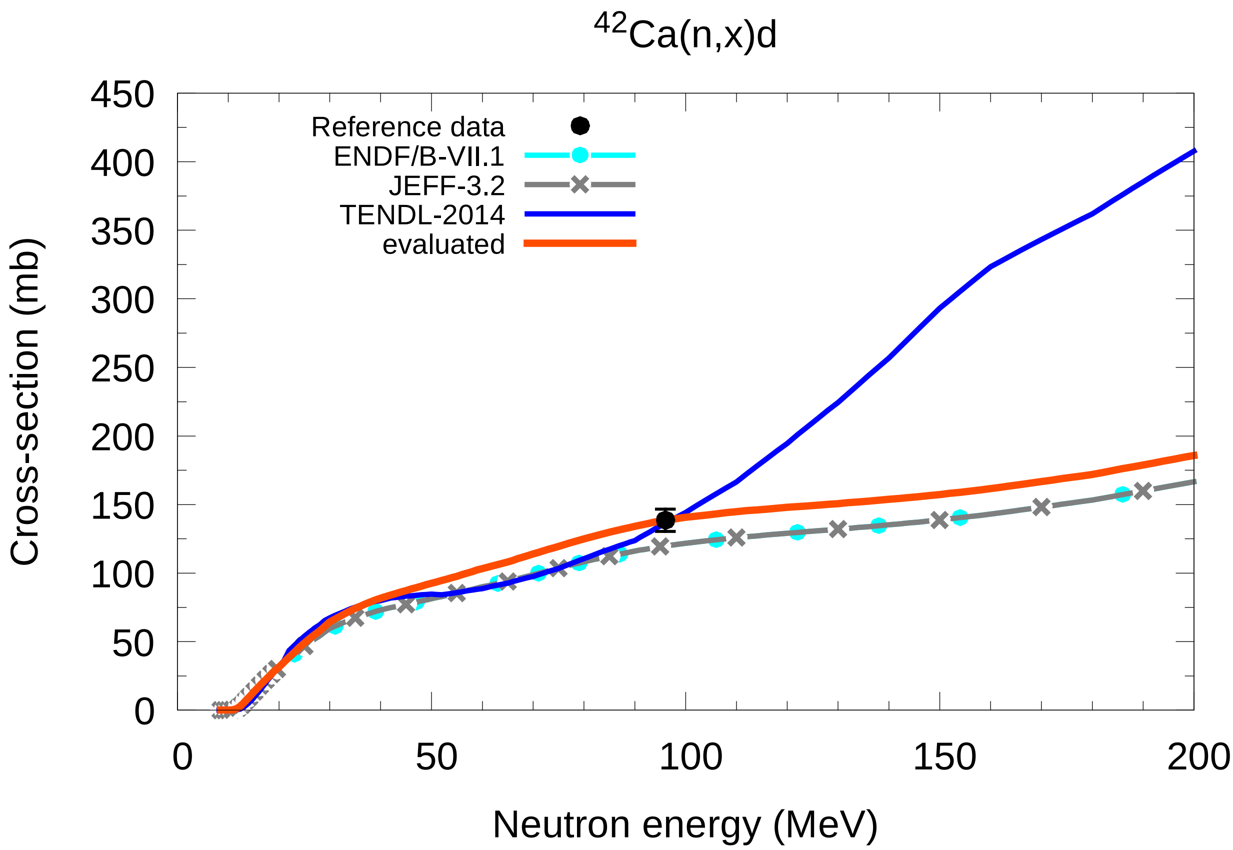
^{40}K(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



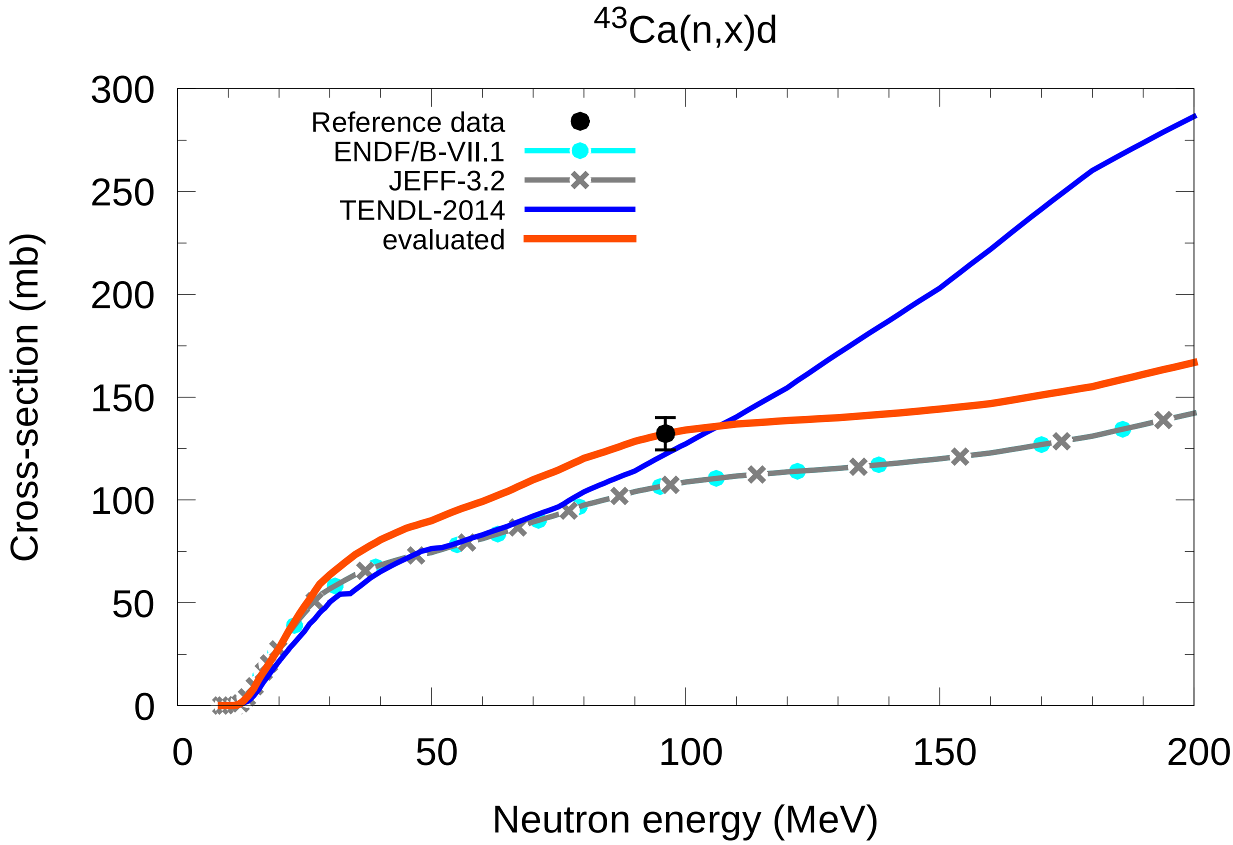
^{41}K(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



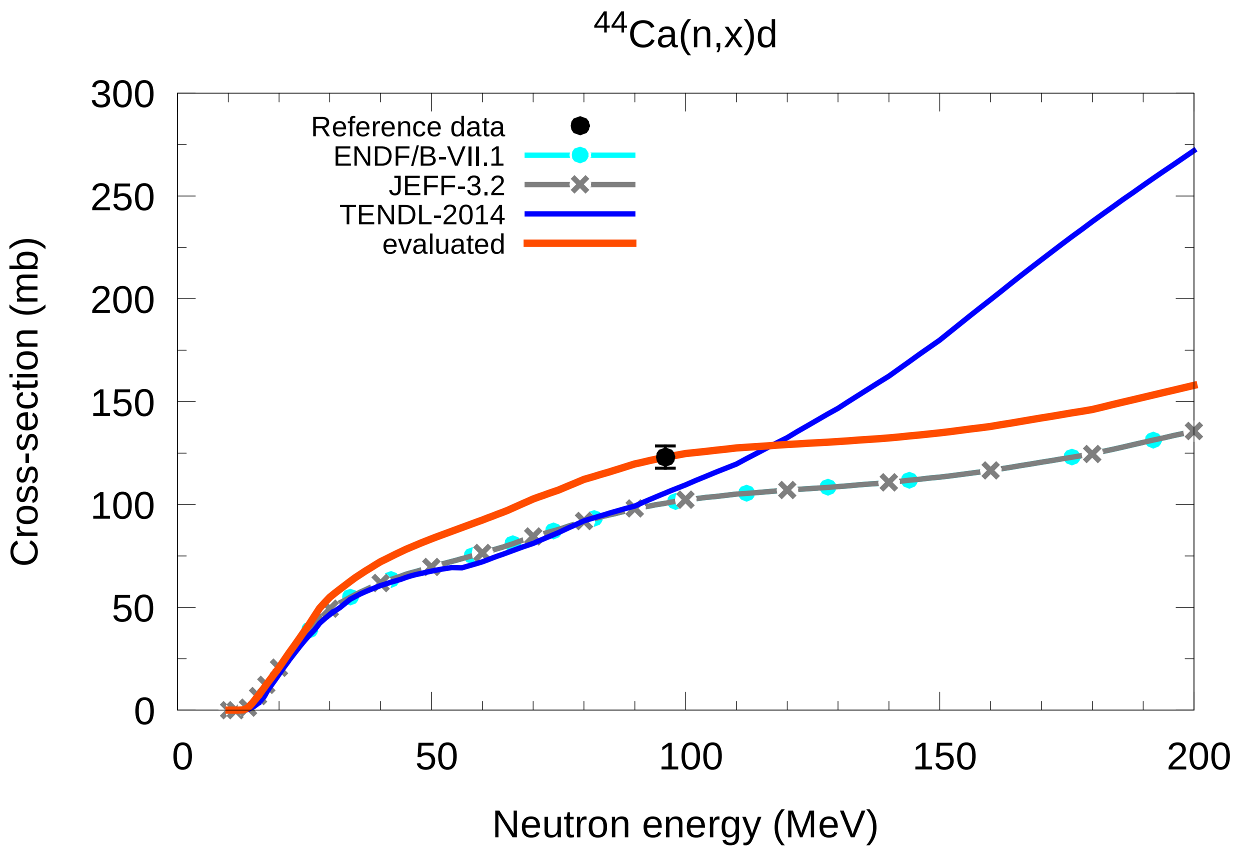
^{40}Ca(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
0
50
100
150
200



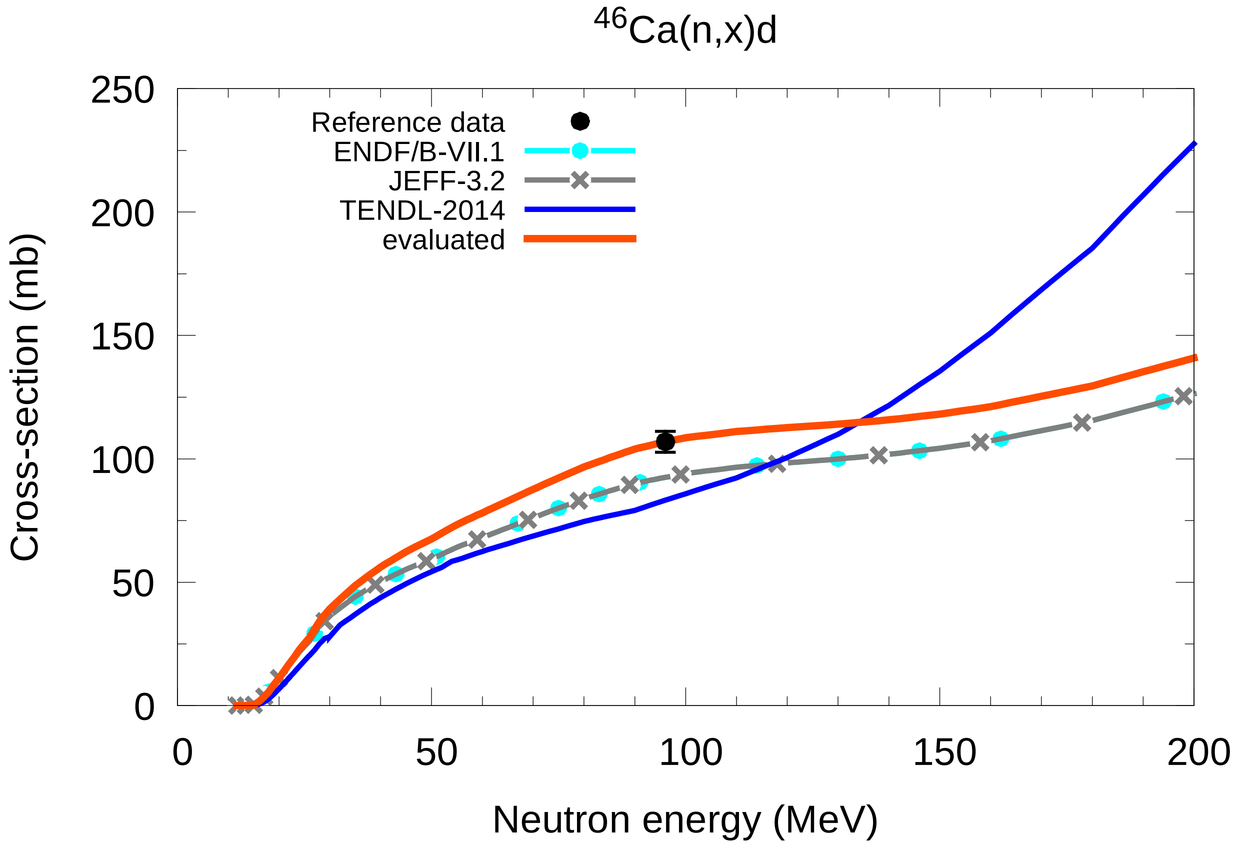
^{42}Ca(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
0
50
100
150
200



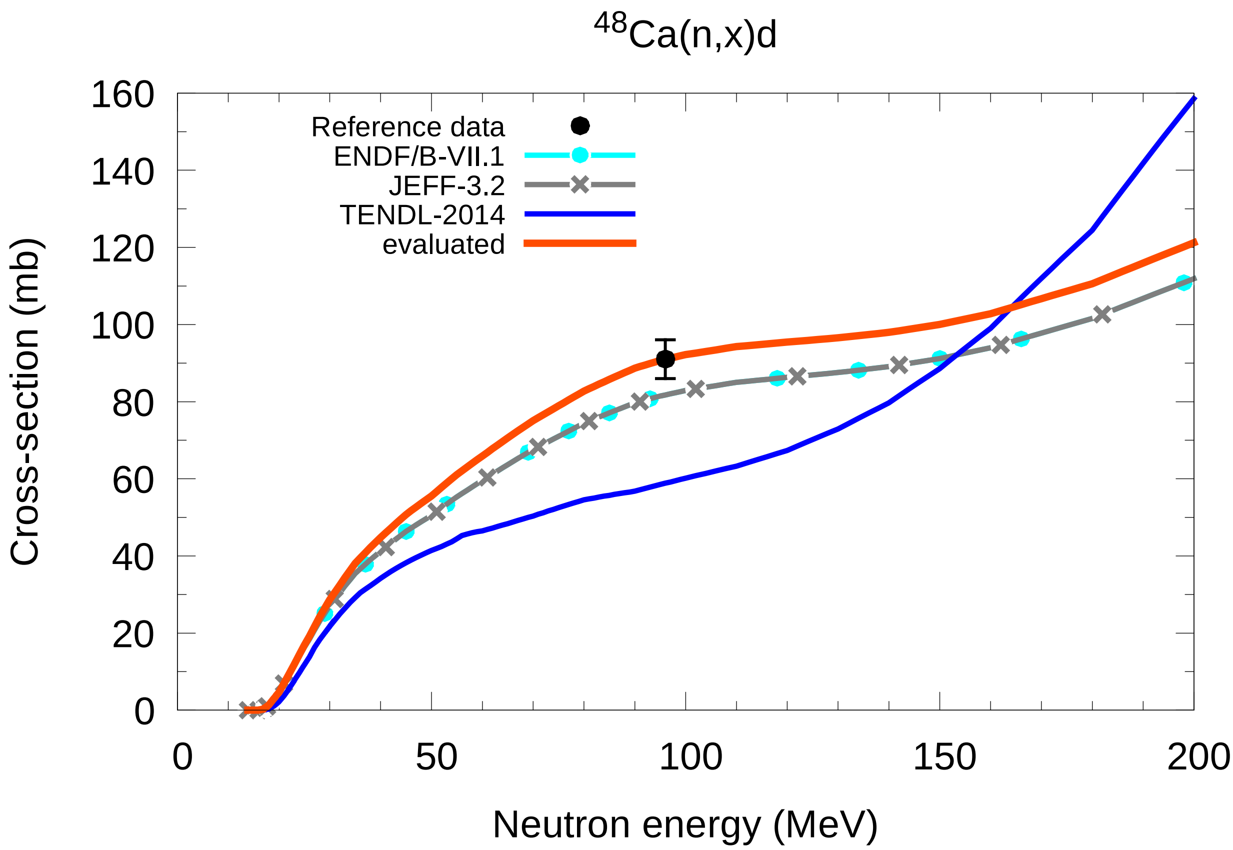
^{43}Ca(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



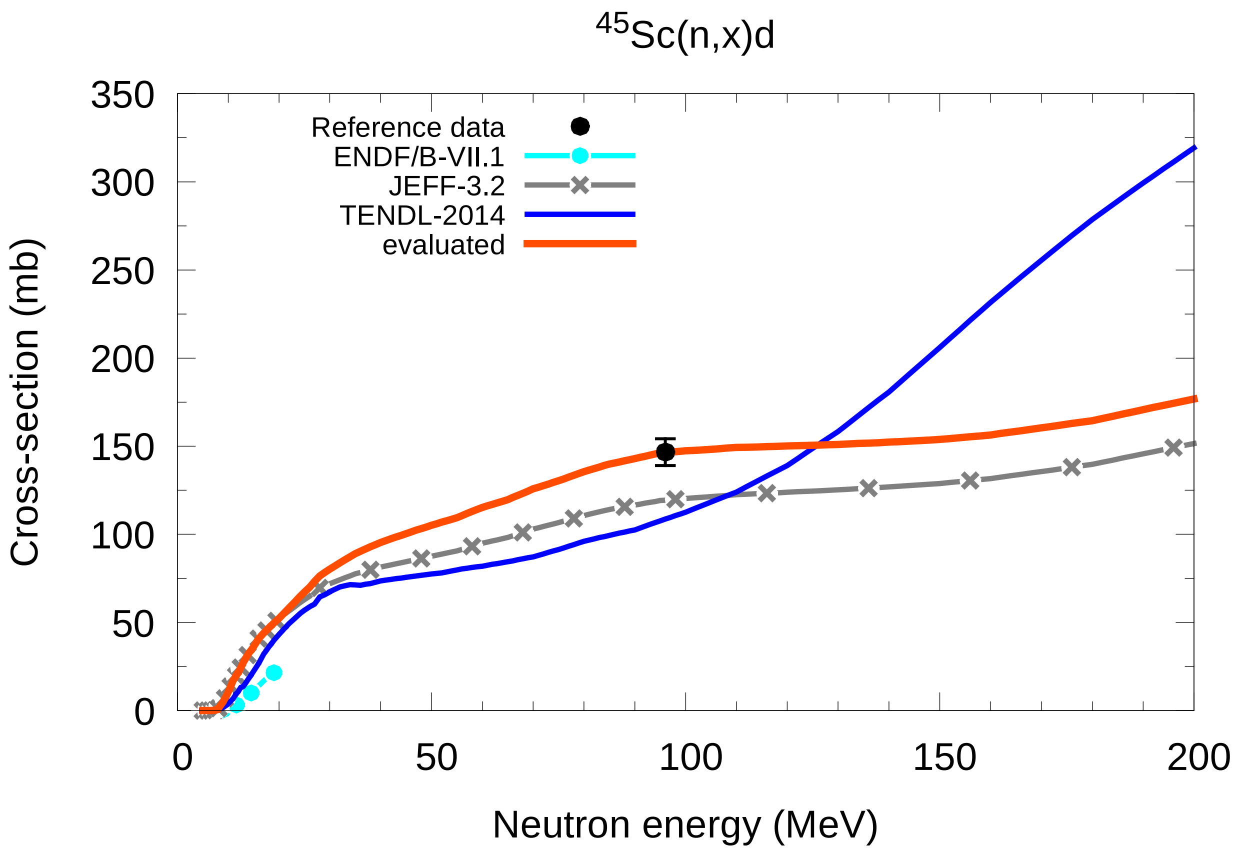
^{44}Ca(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



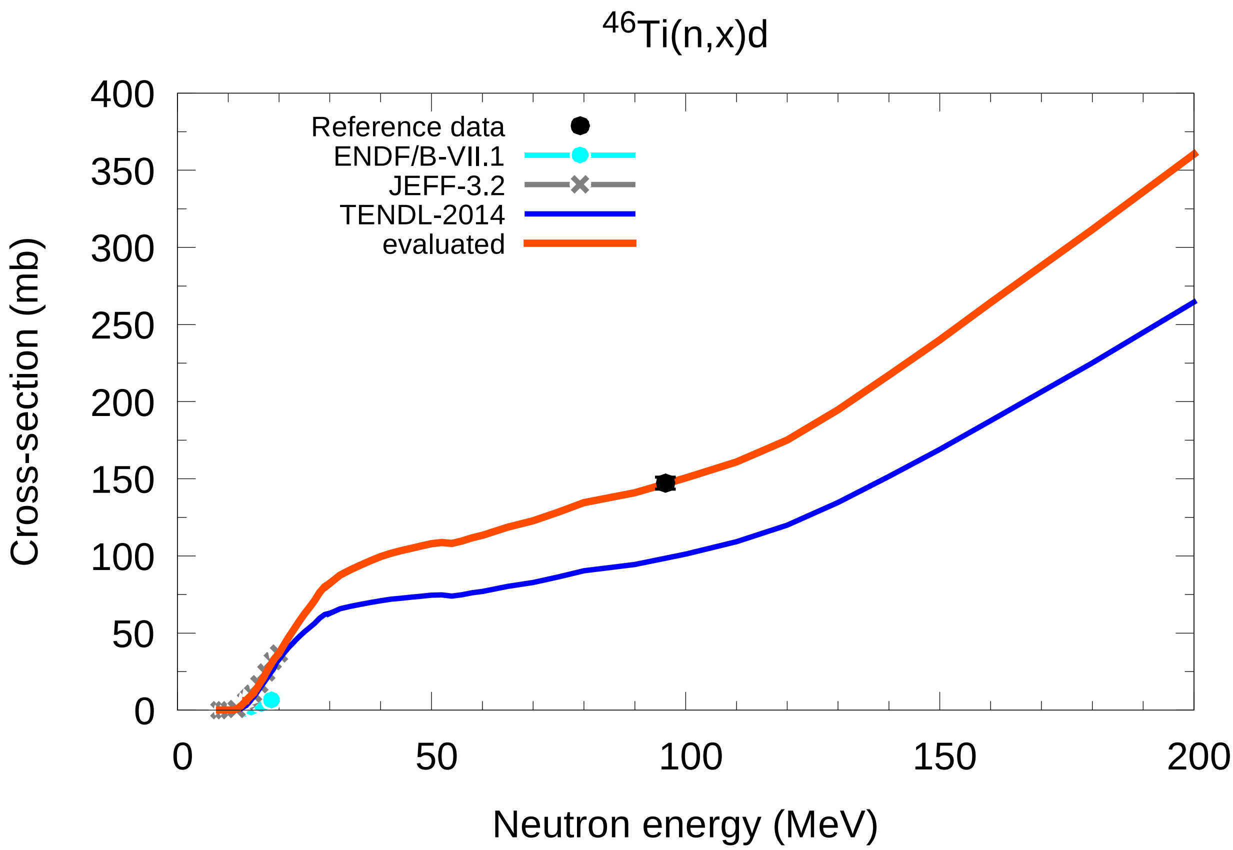
46Ca(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



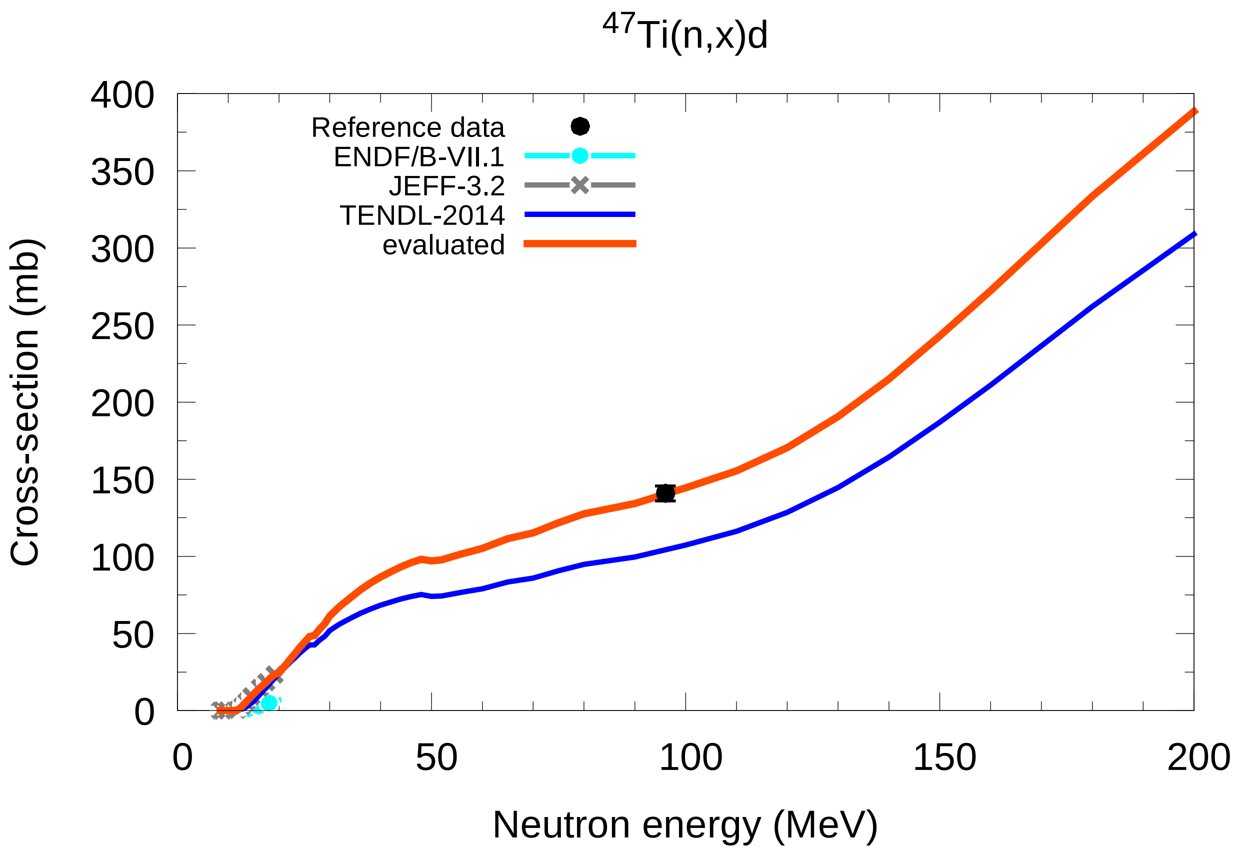
48Ca(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
50
150
200



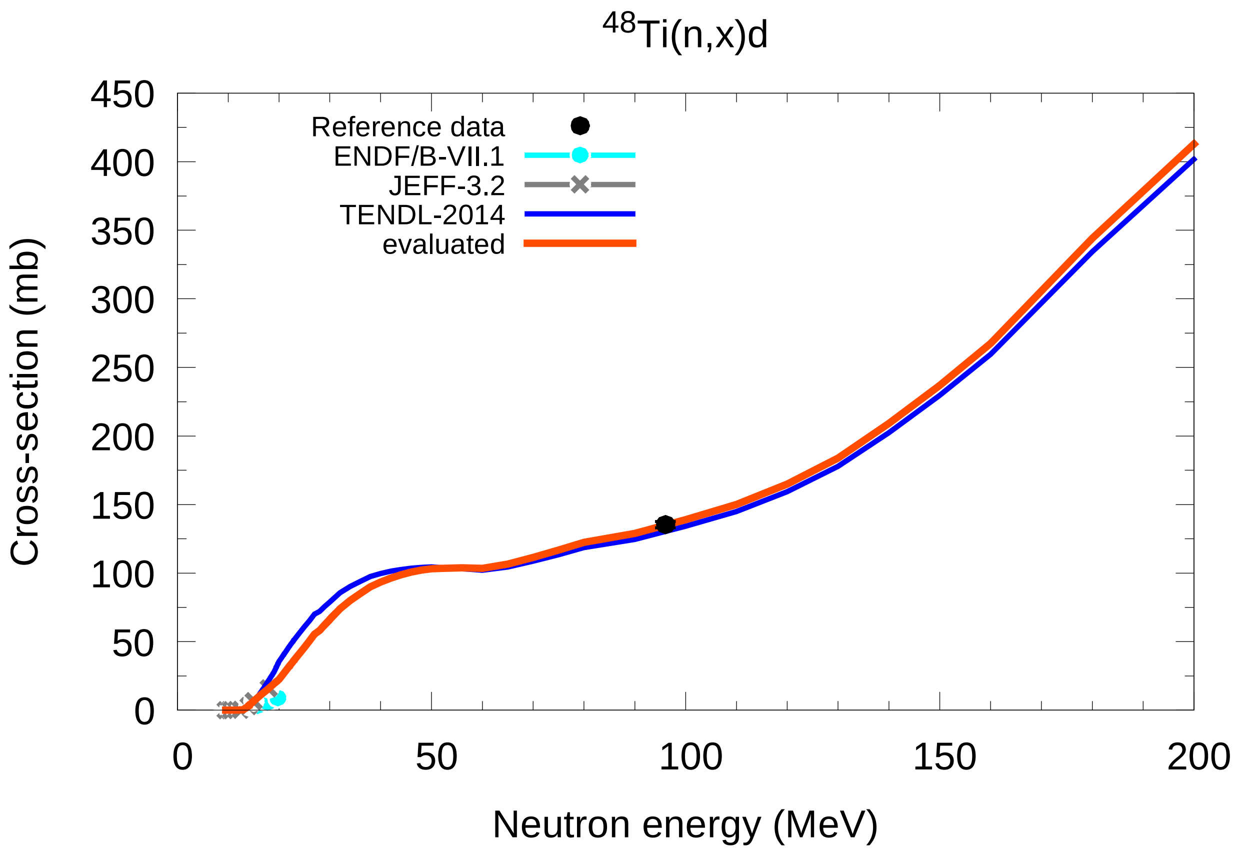
$^{45}Sc(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



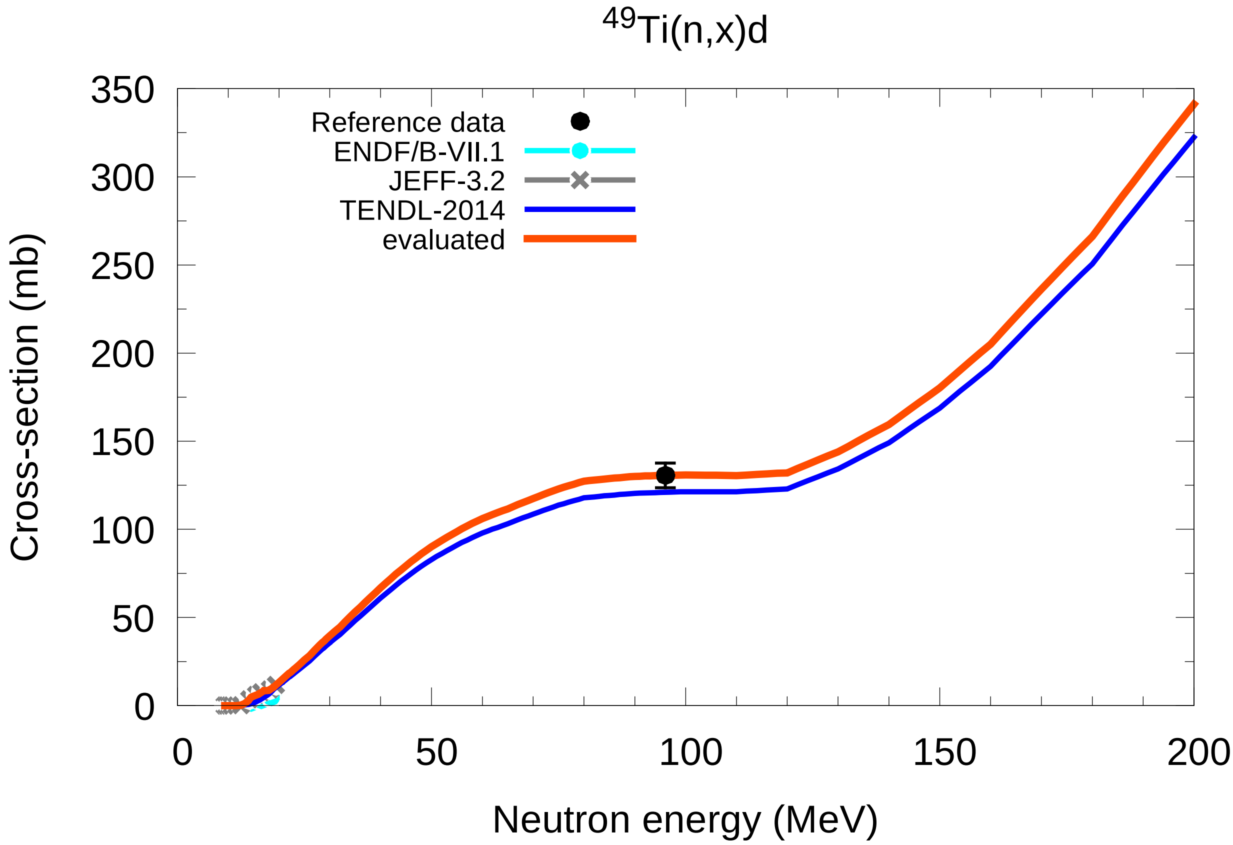
$^{46}Ti(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



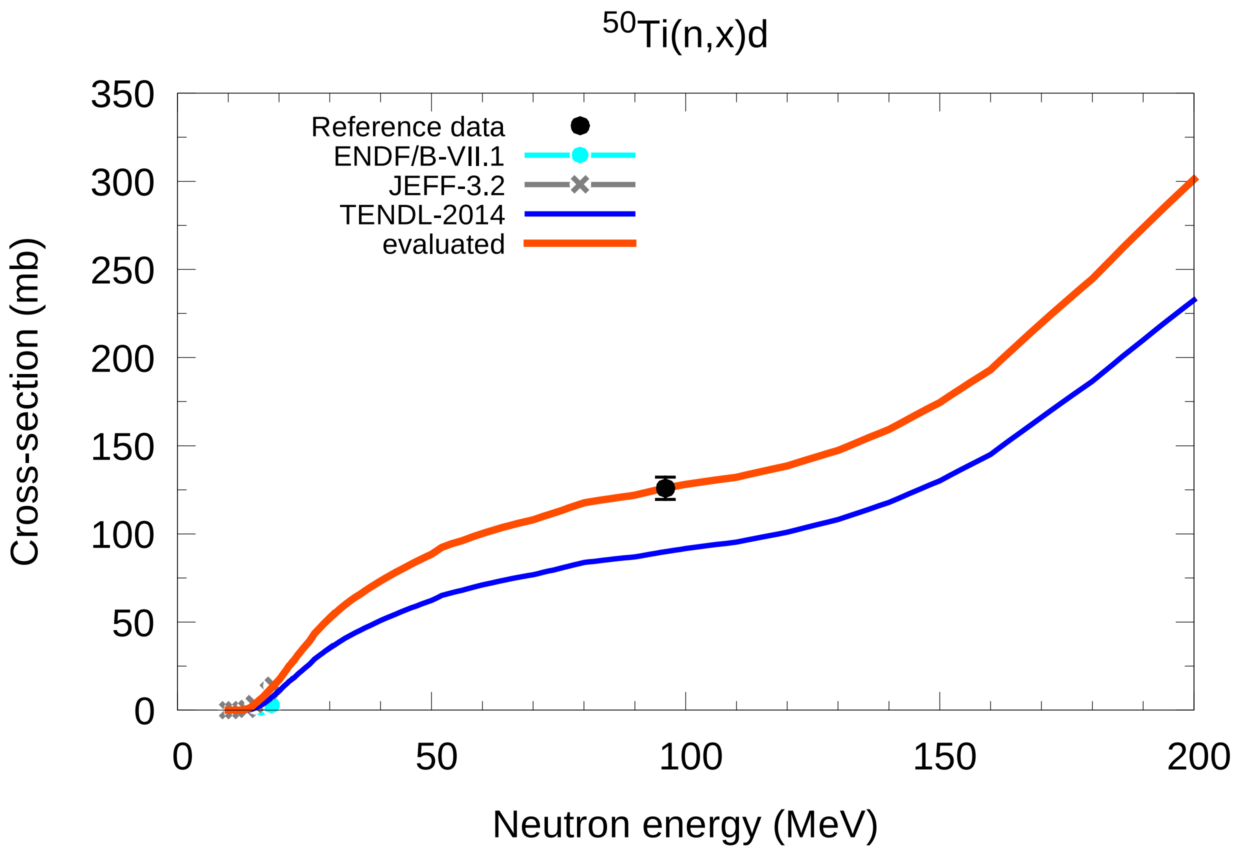
^{47}Ti(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



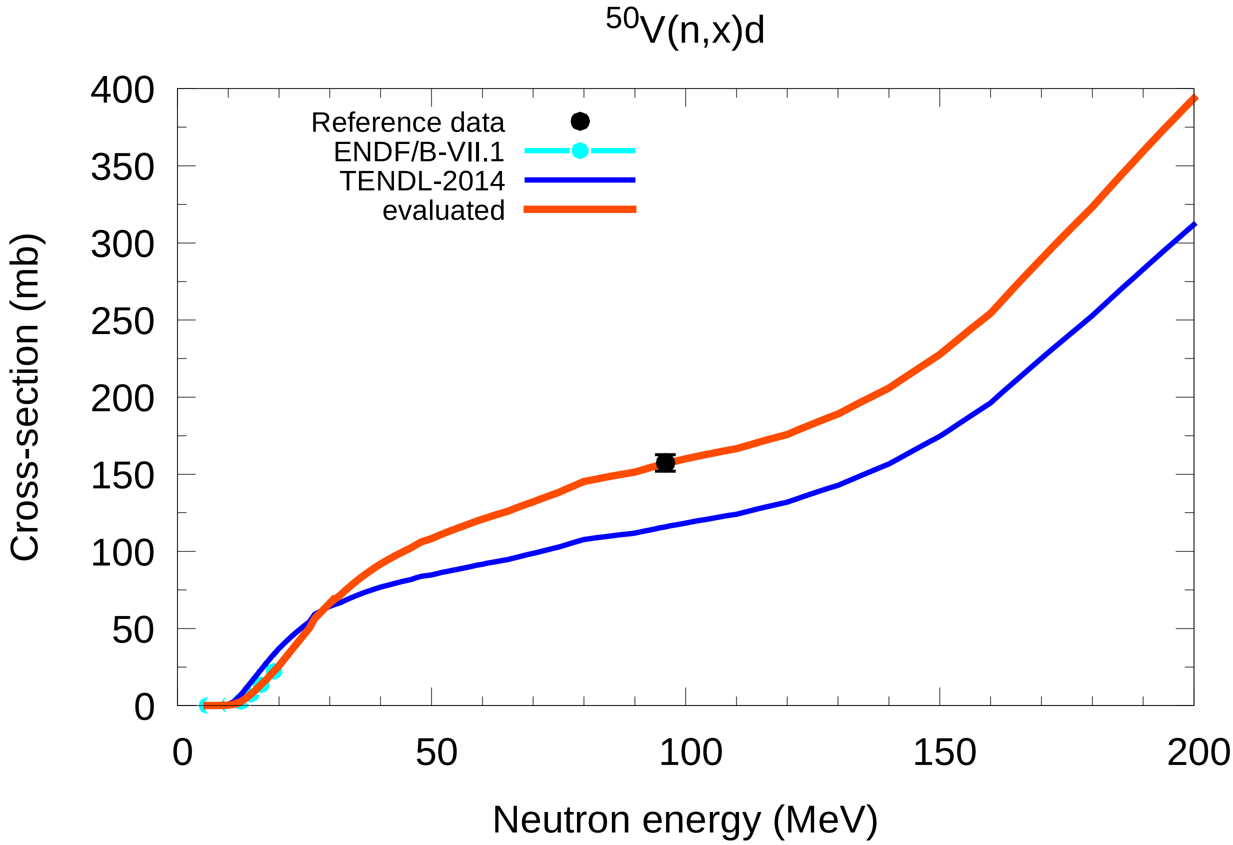
^{48}Ti(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



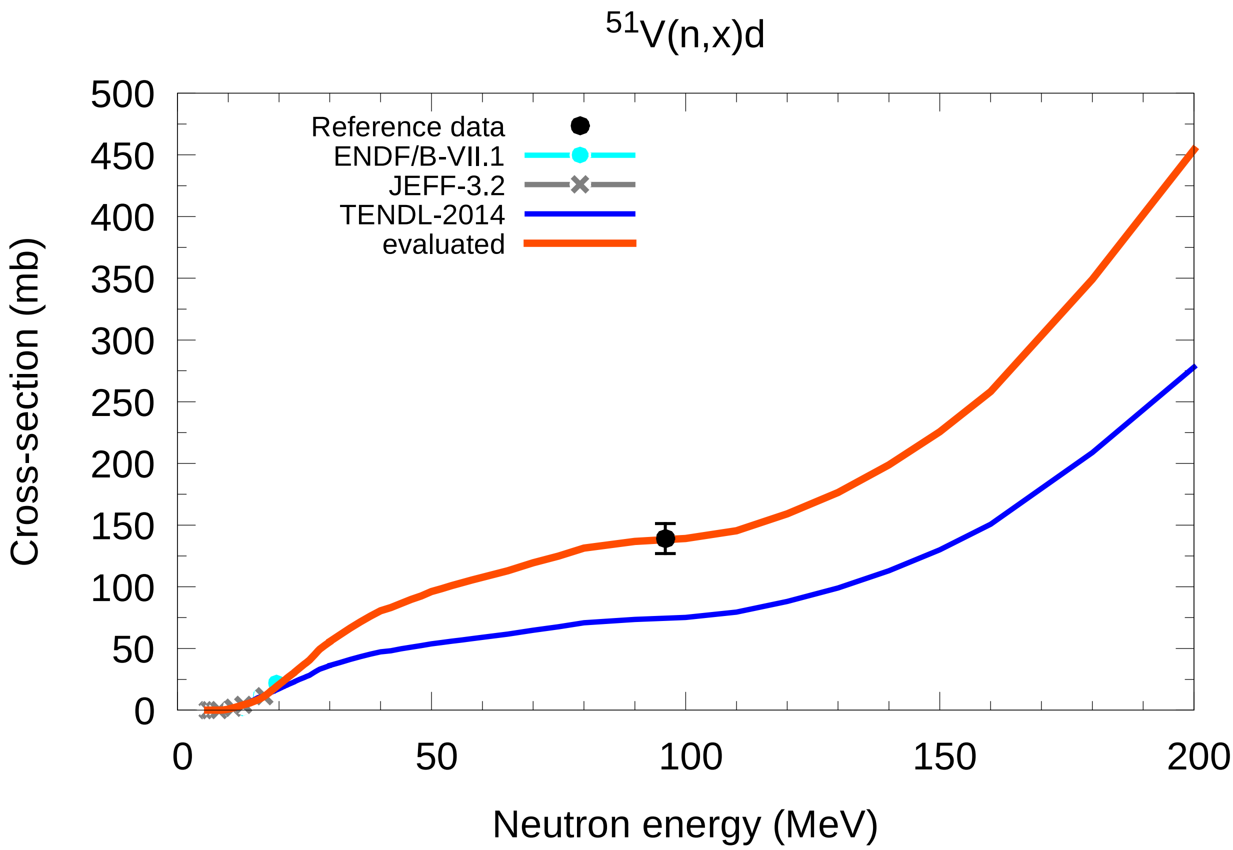
49Ti(n,x)d
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



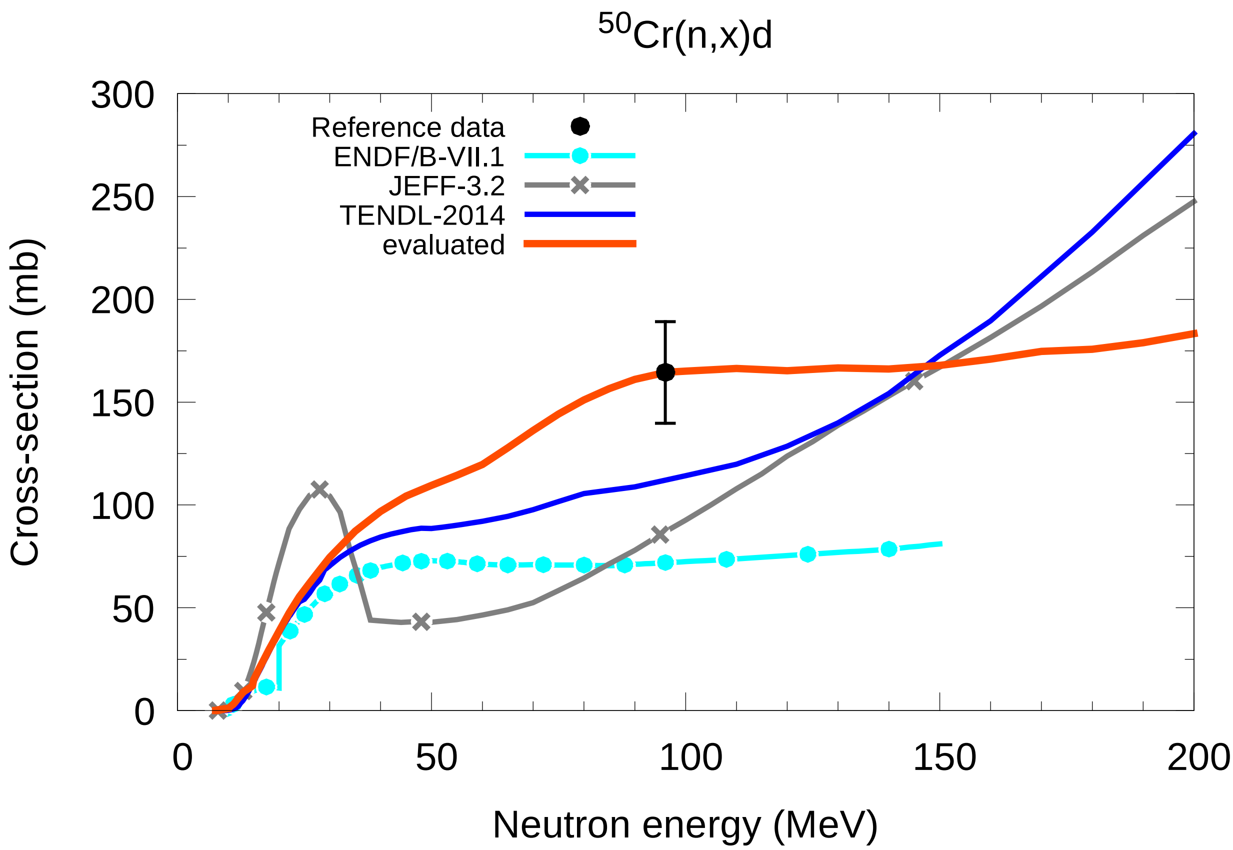
50Ti(n,x)d
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



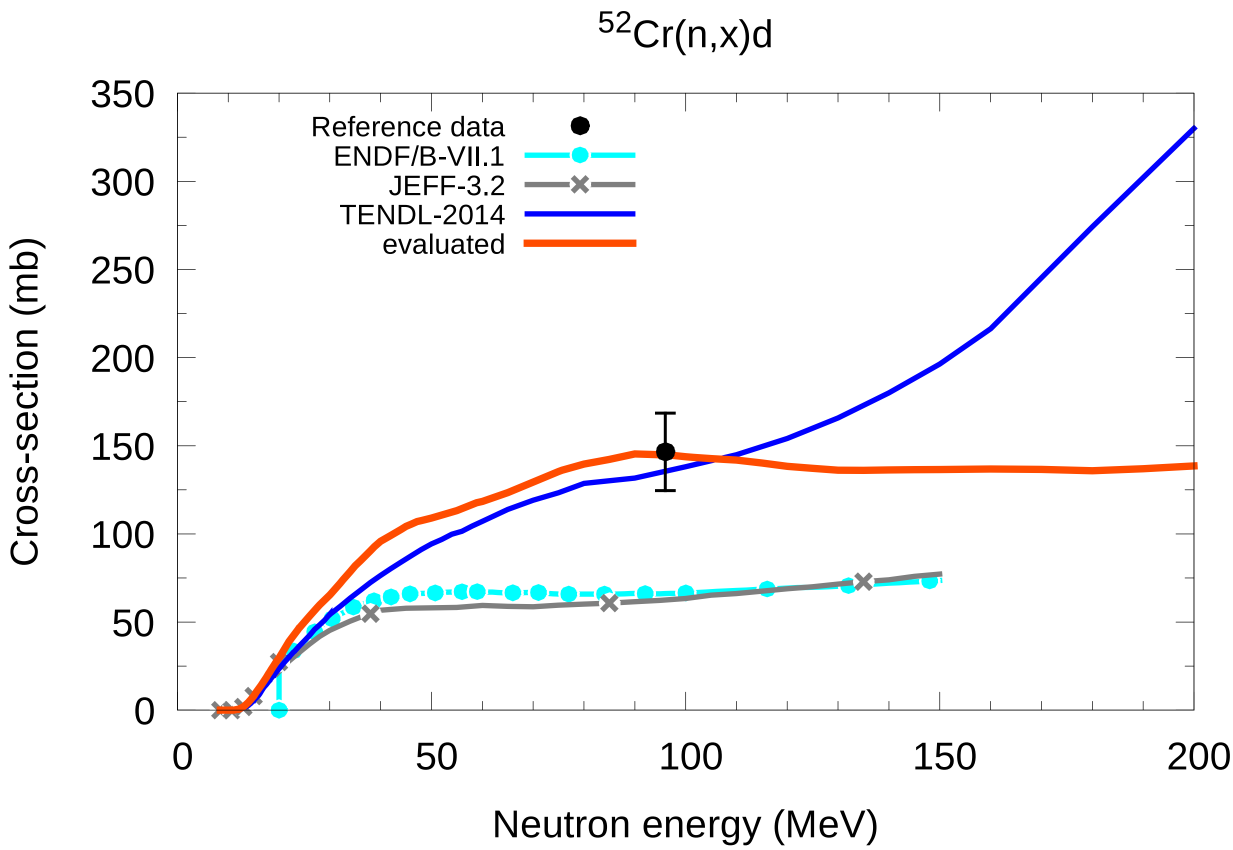
$^{50}V(n,x)d$
Reference data
ENDF/B-VII.1
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
0
50
100
150
200



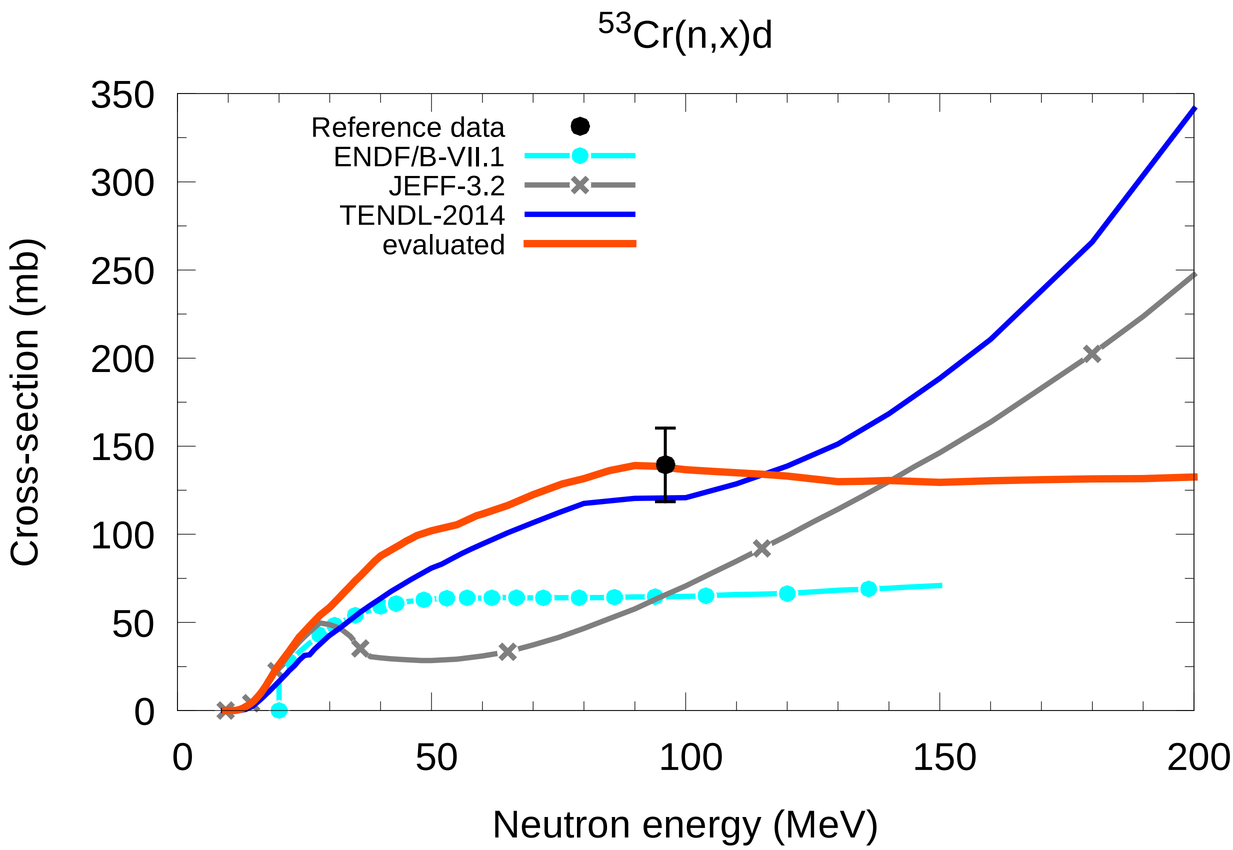
$^{51}V(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500
0
50
100
150
200



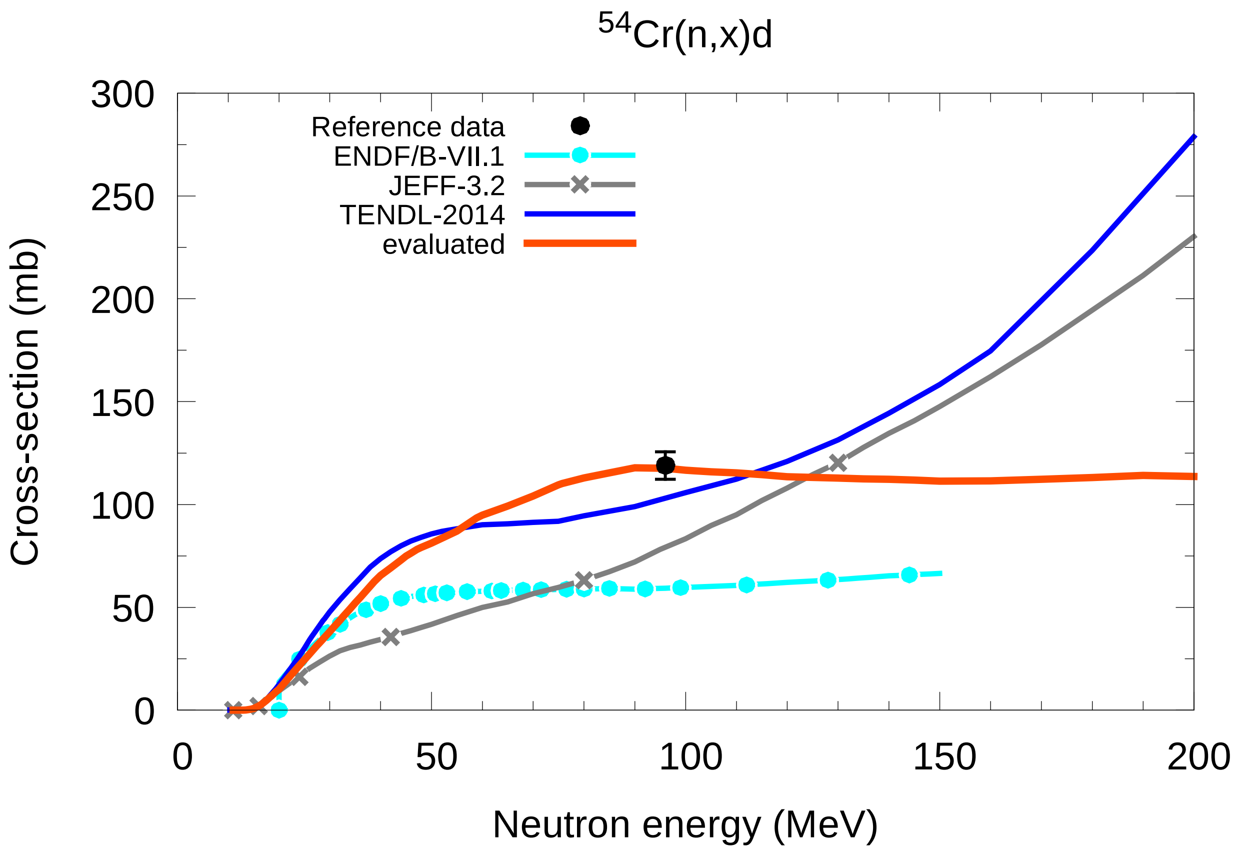
50Cr(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



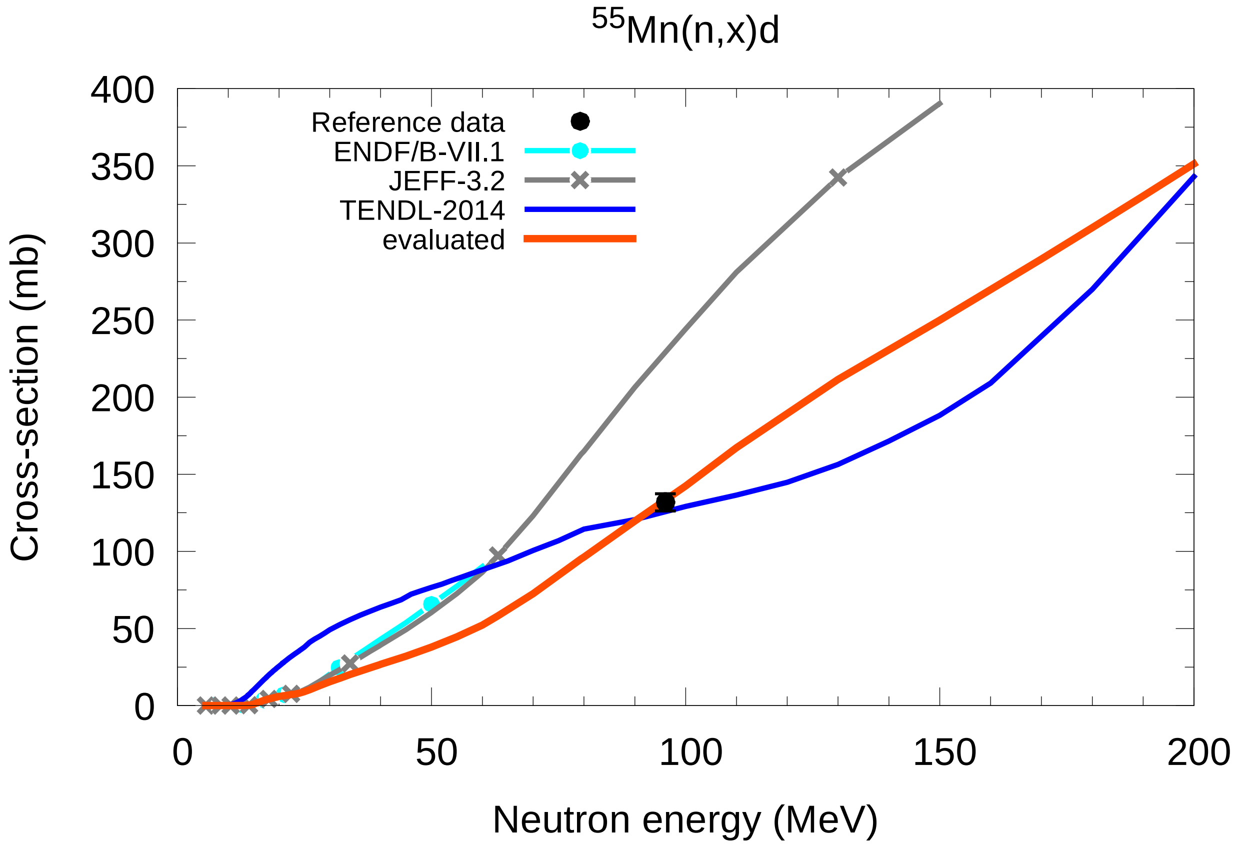
52Cr(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



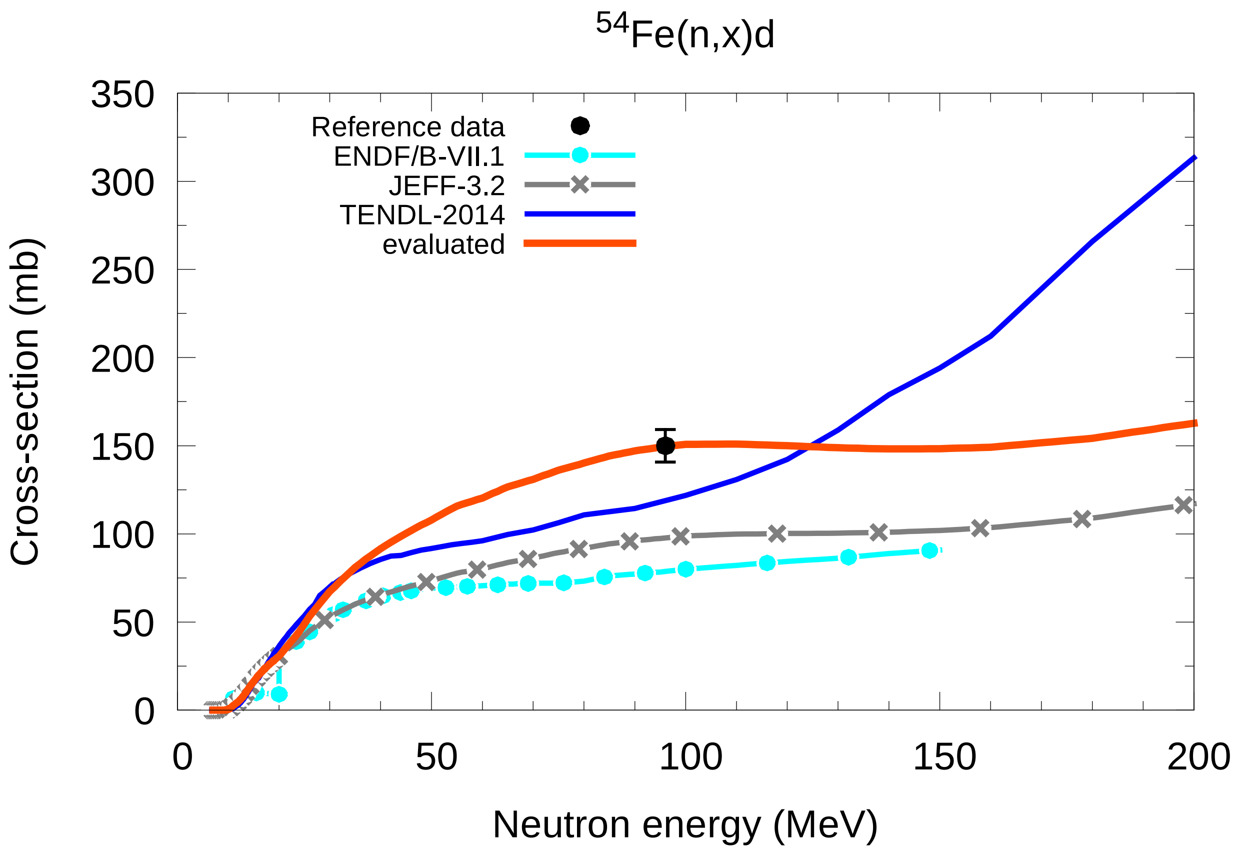
^{53}Cr(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



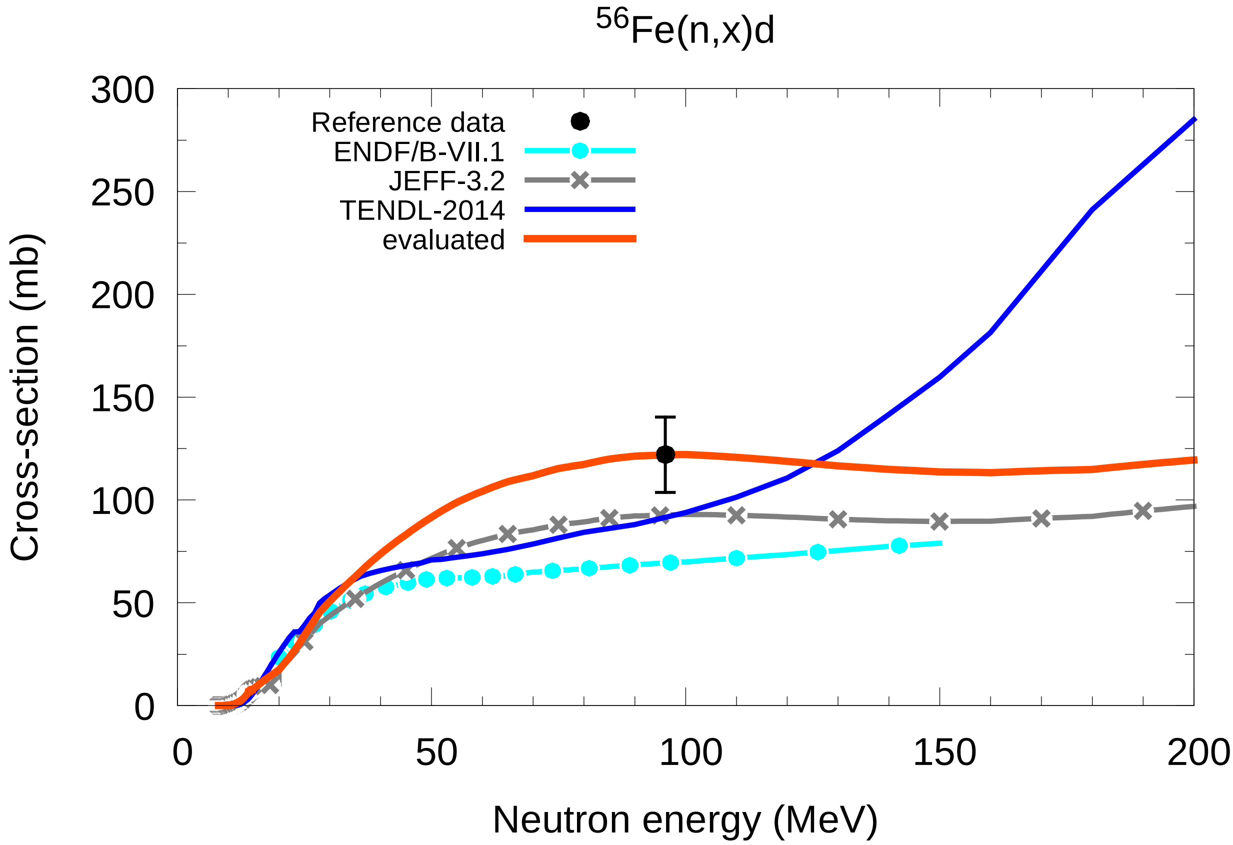
^{54}Cr(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



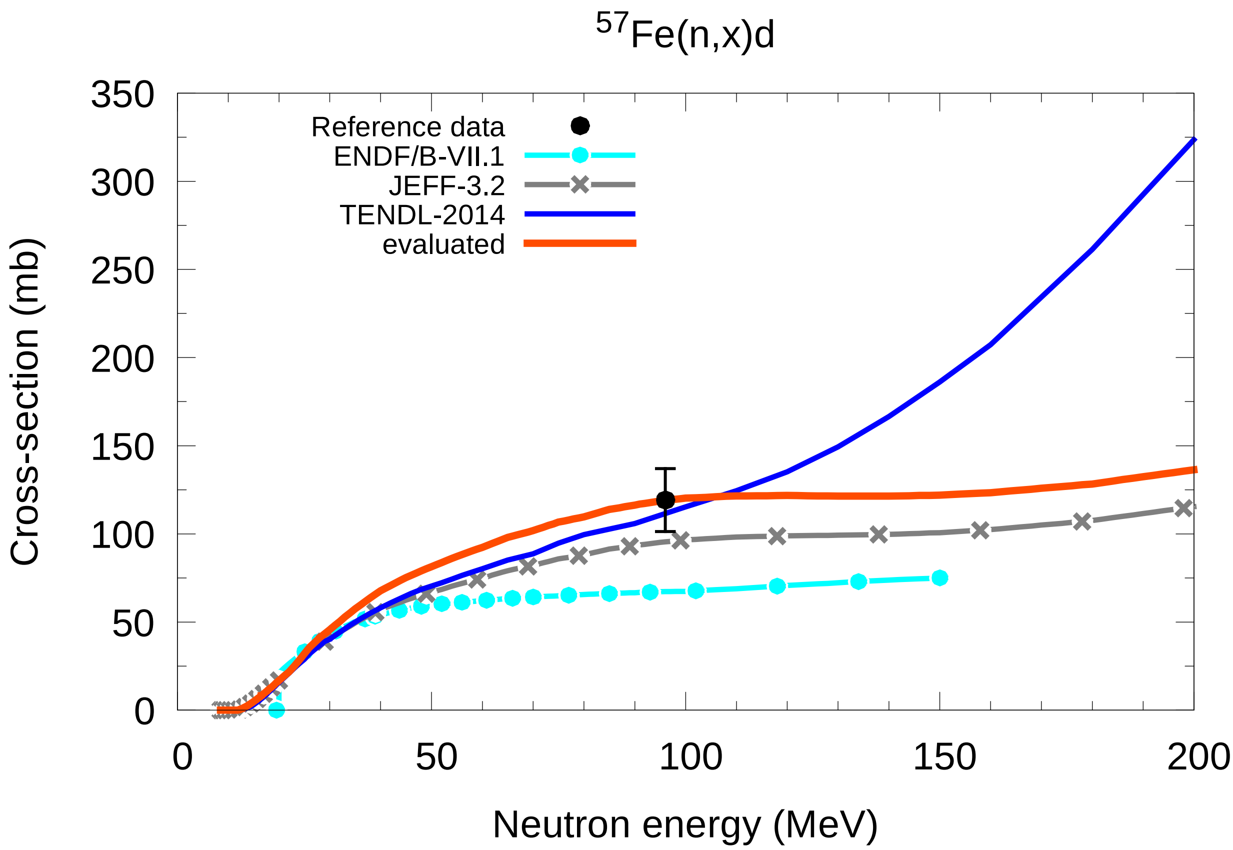
^{55}Mn(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
0
50
100
150
200



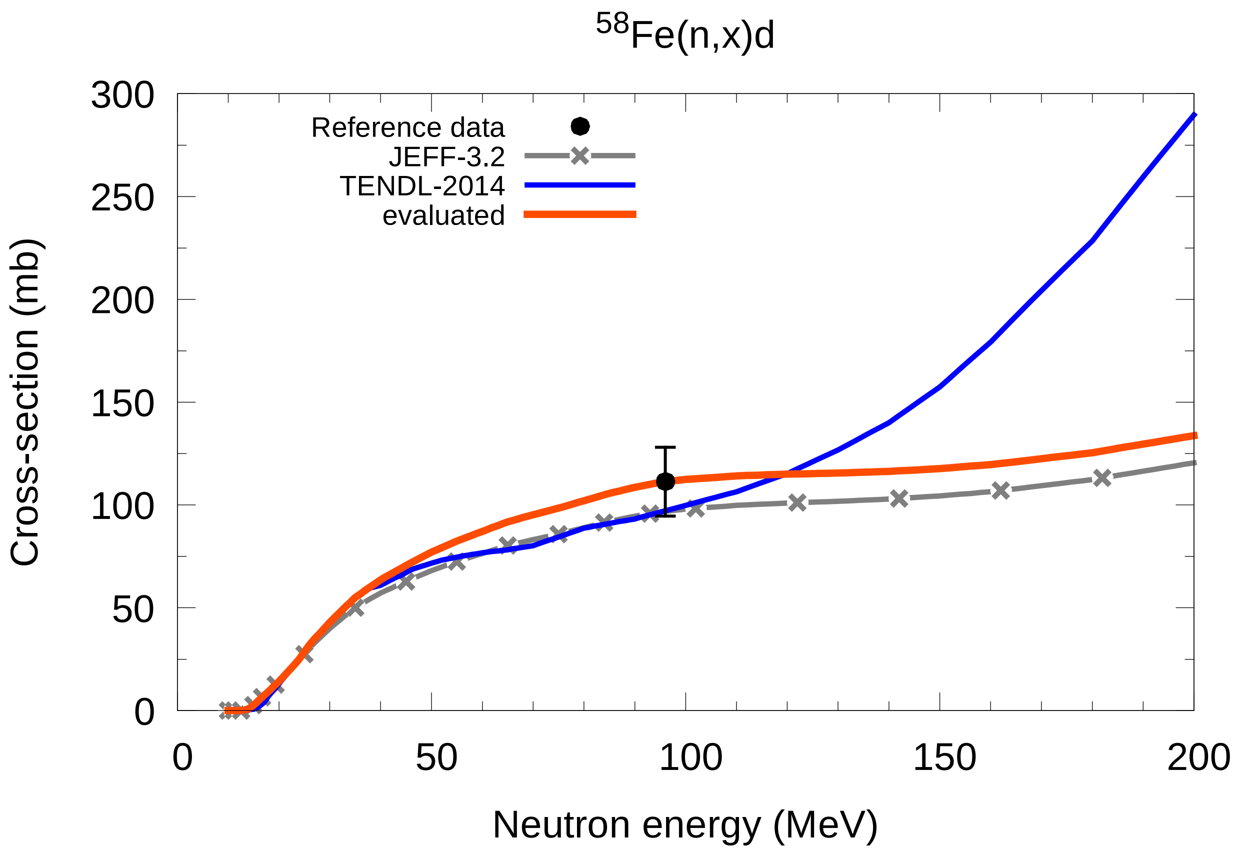
^{54}Fe(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
0
50
100
150
200



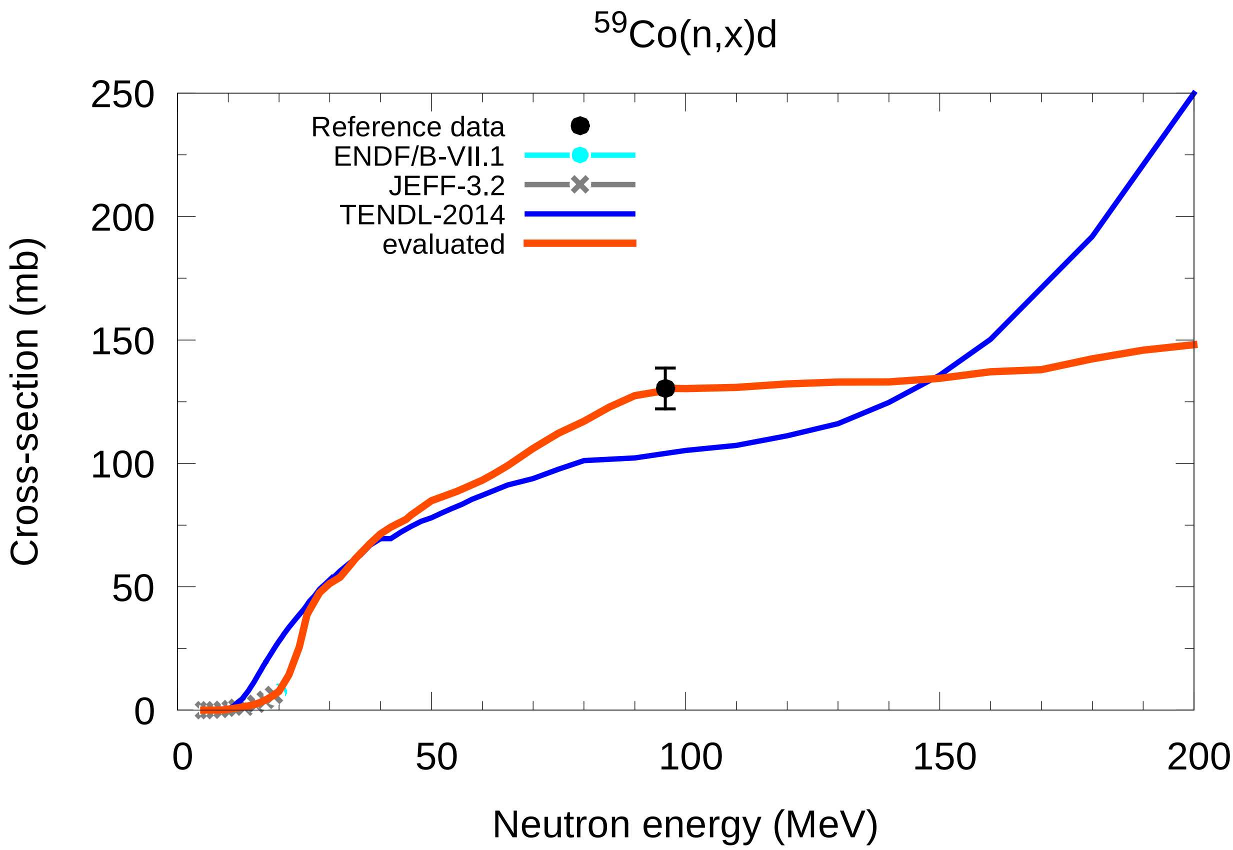
^{56}Fe(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



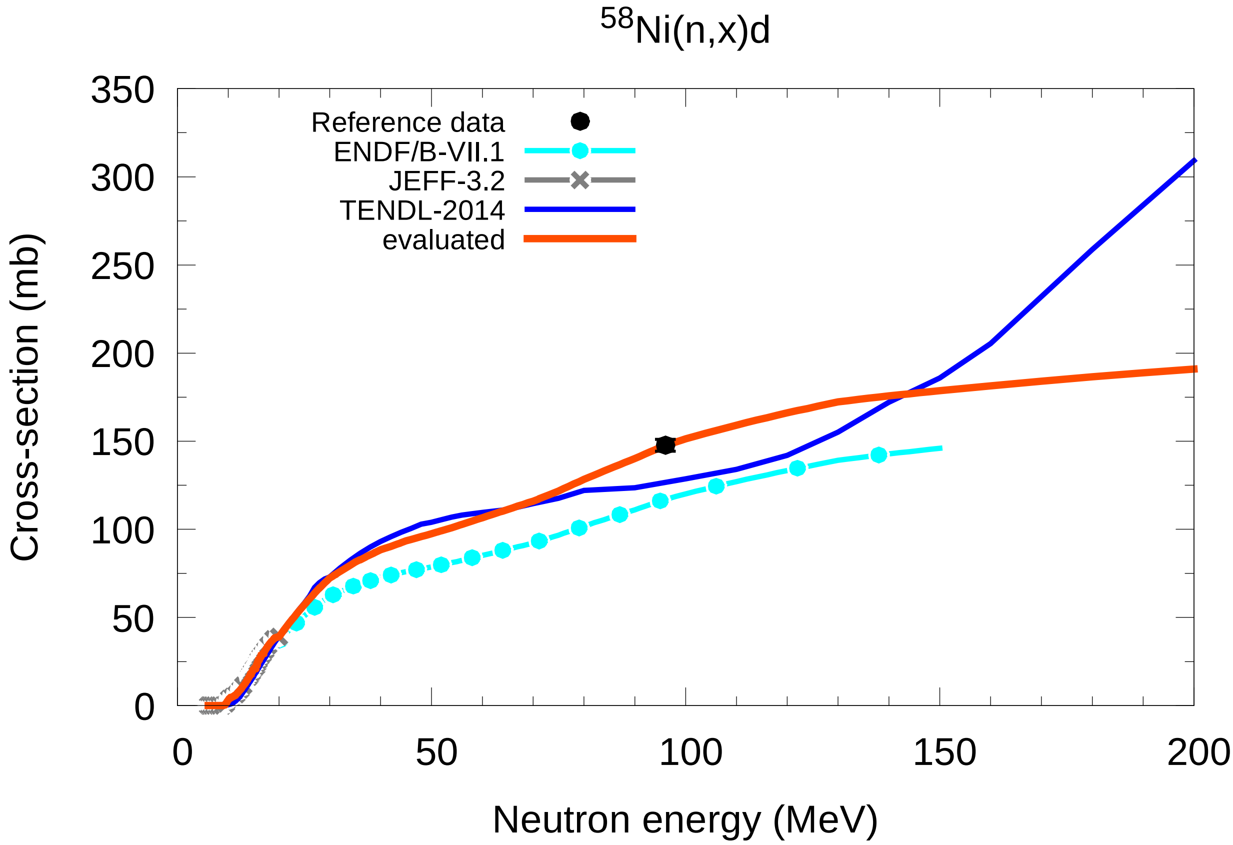
^{57}Fe(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350

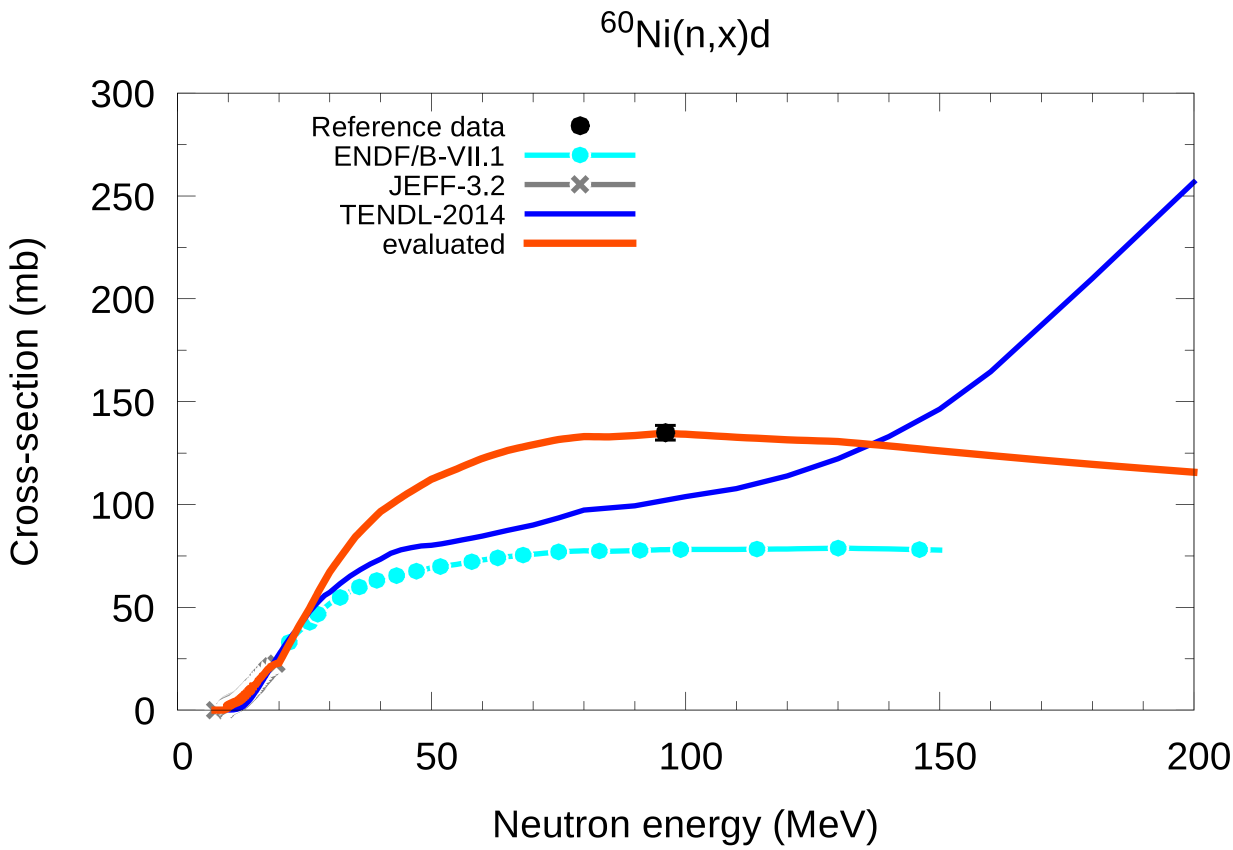


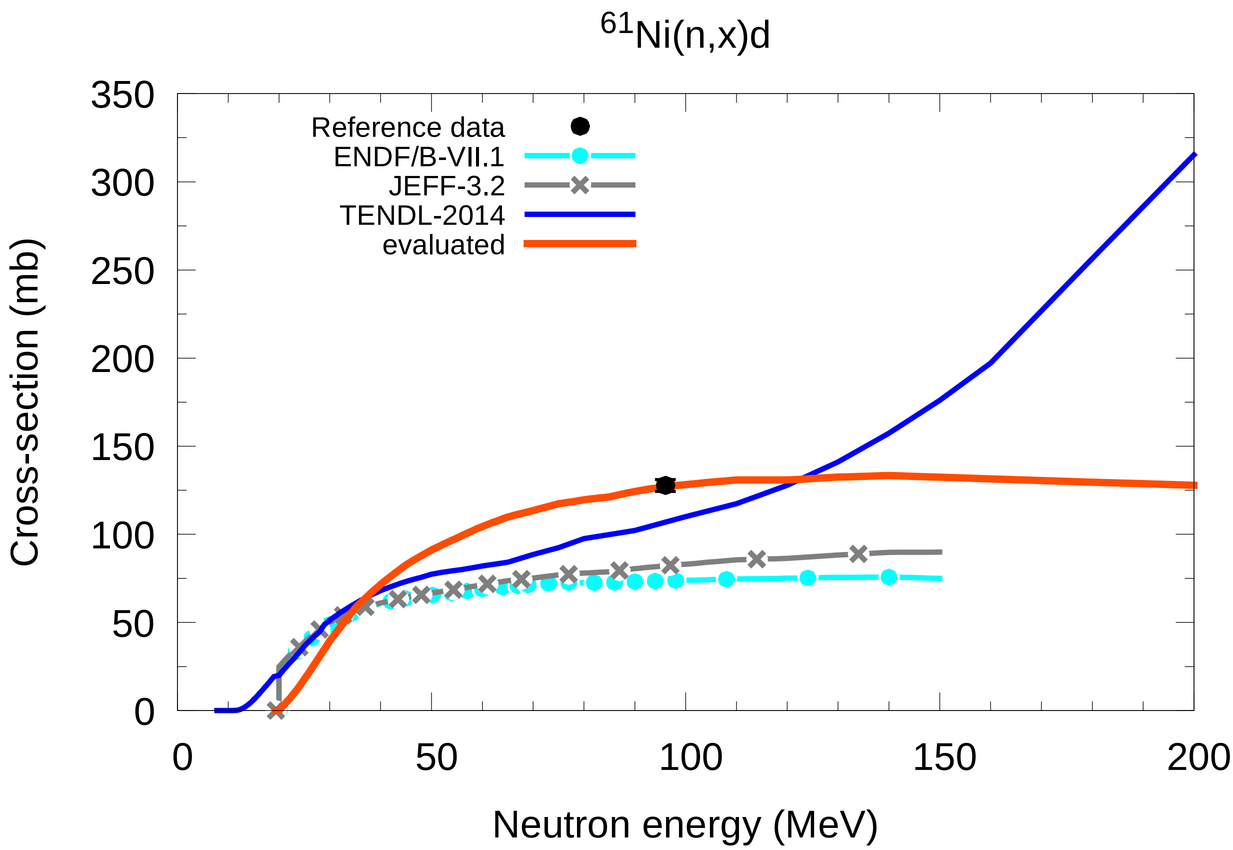
^{58}Fe(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



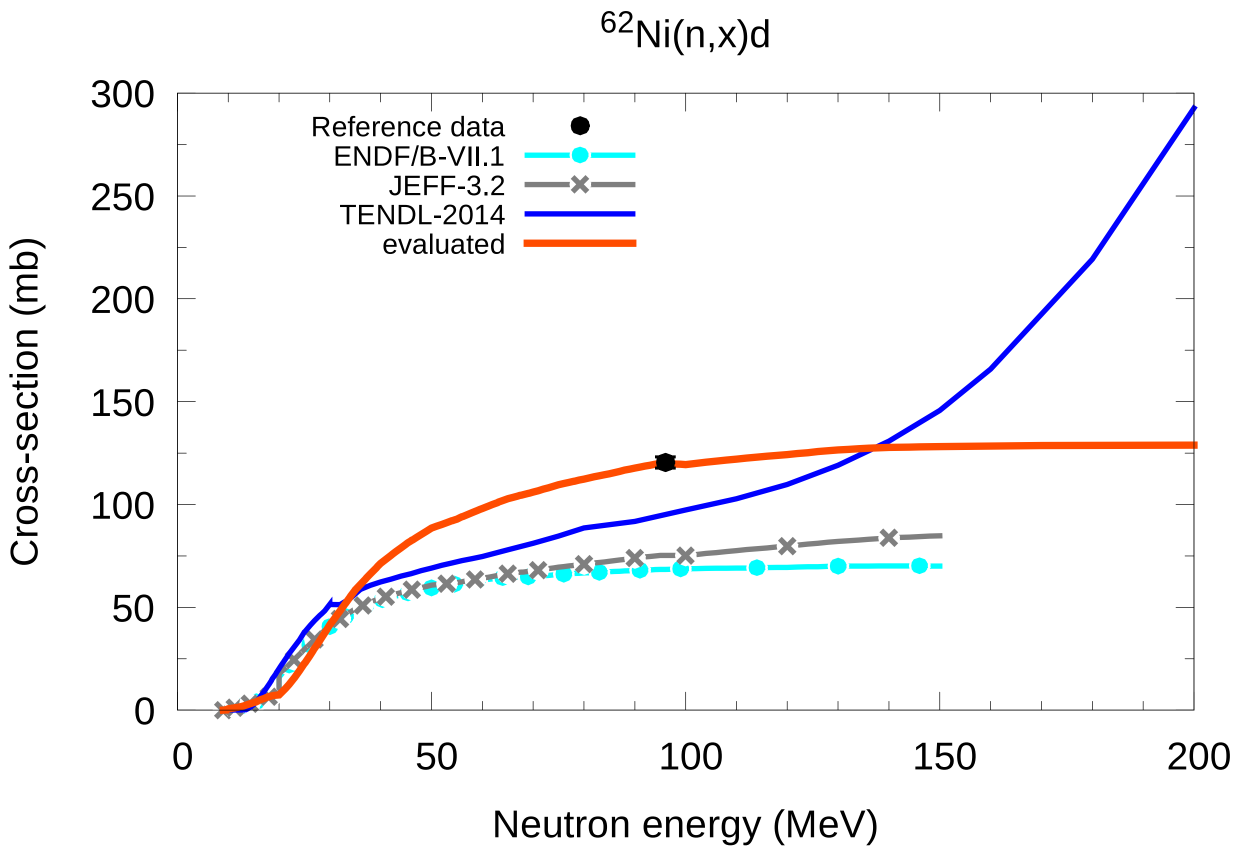
^{59}Co(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250


58Ni(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
0
50
100
150
200

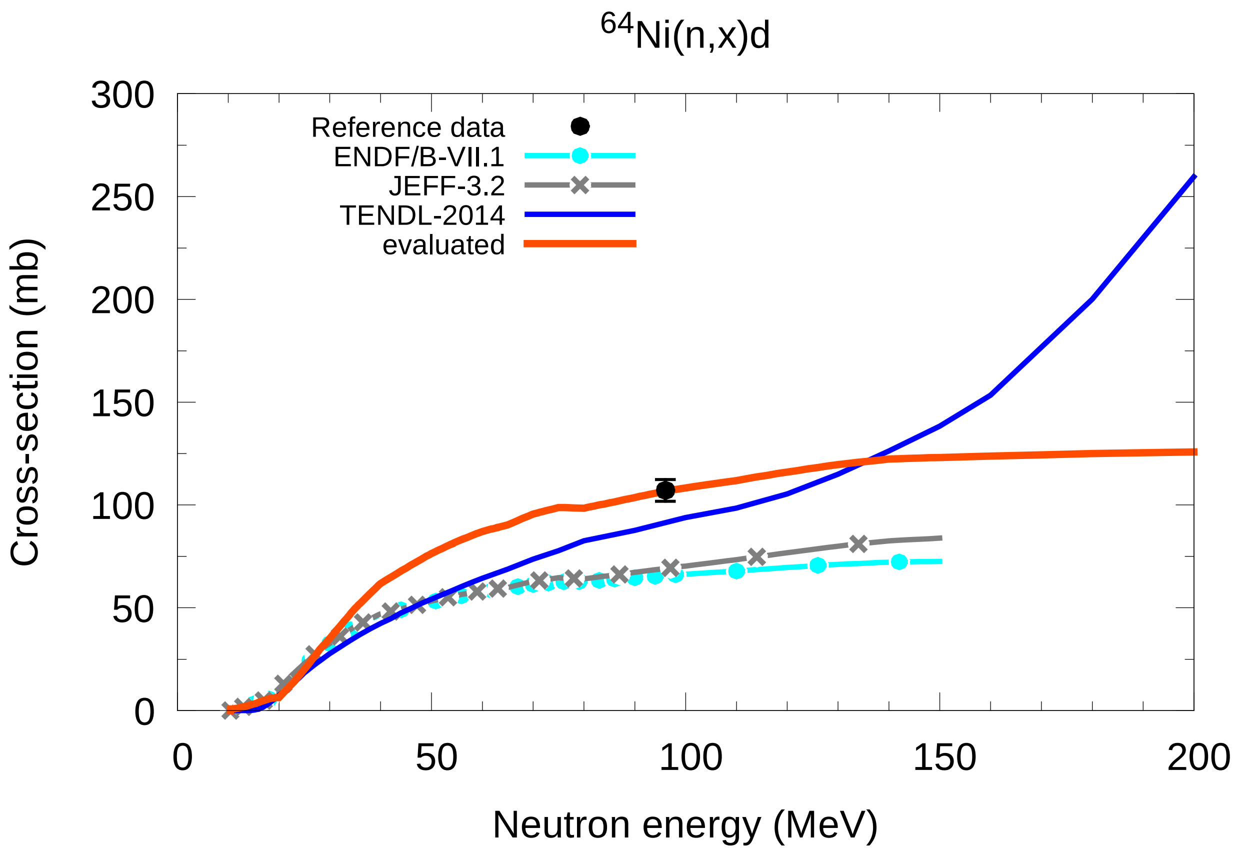

60Ni(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
0
50
100
150
200

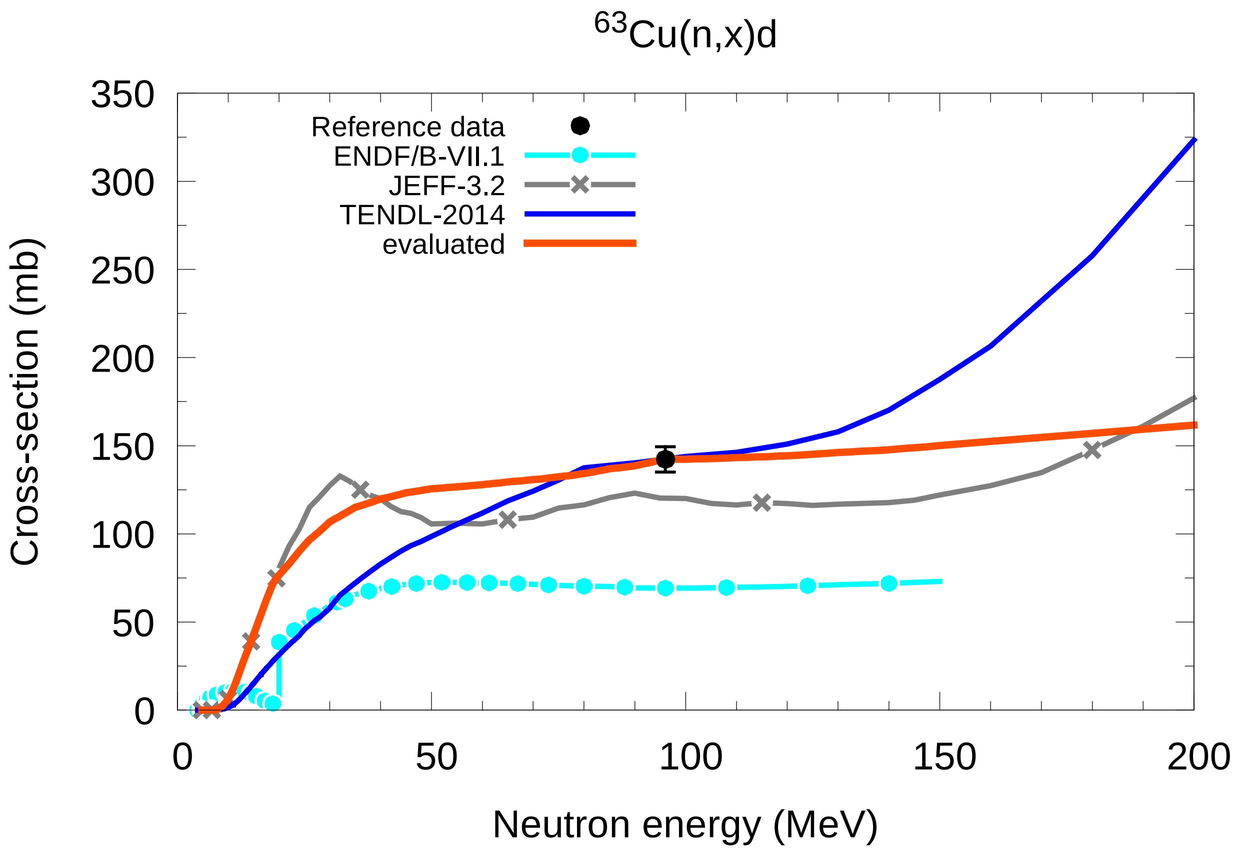


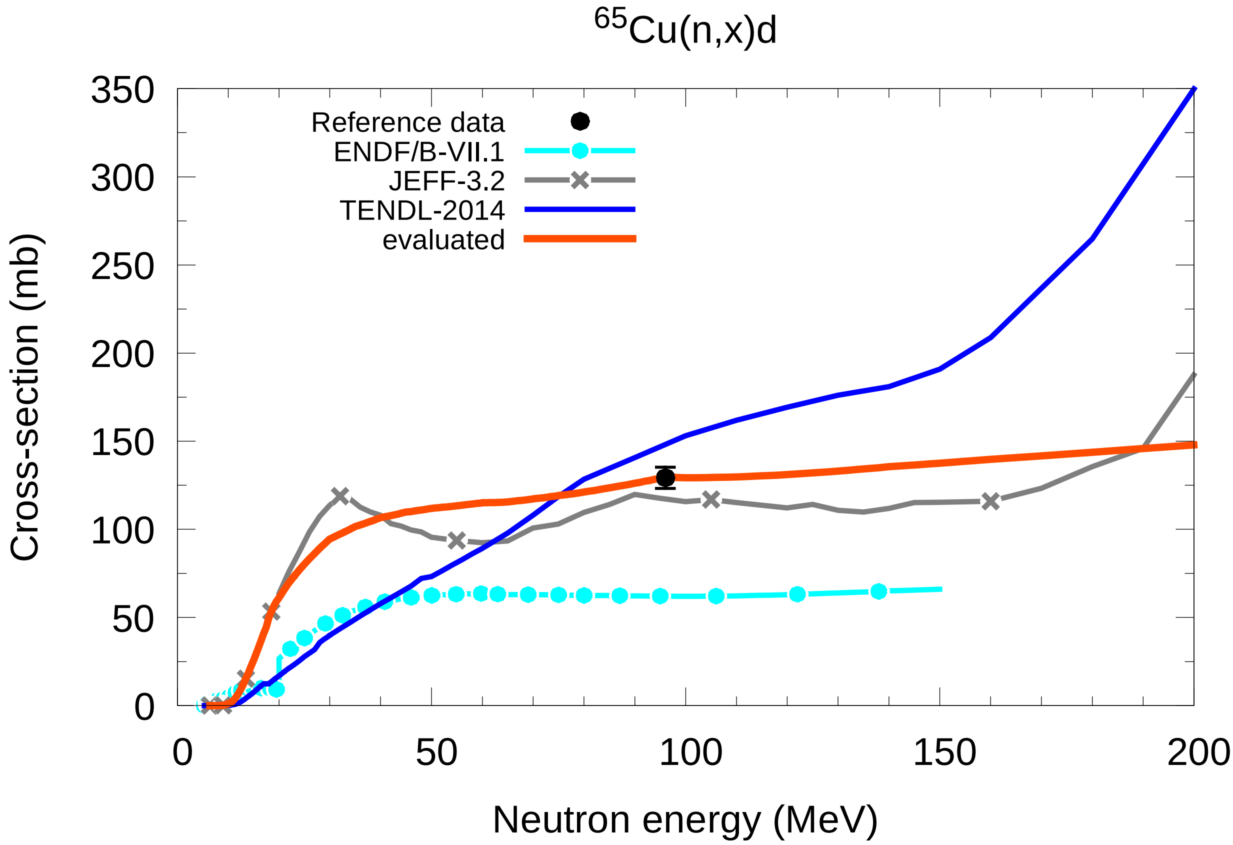
^{61}Ni(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



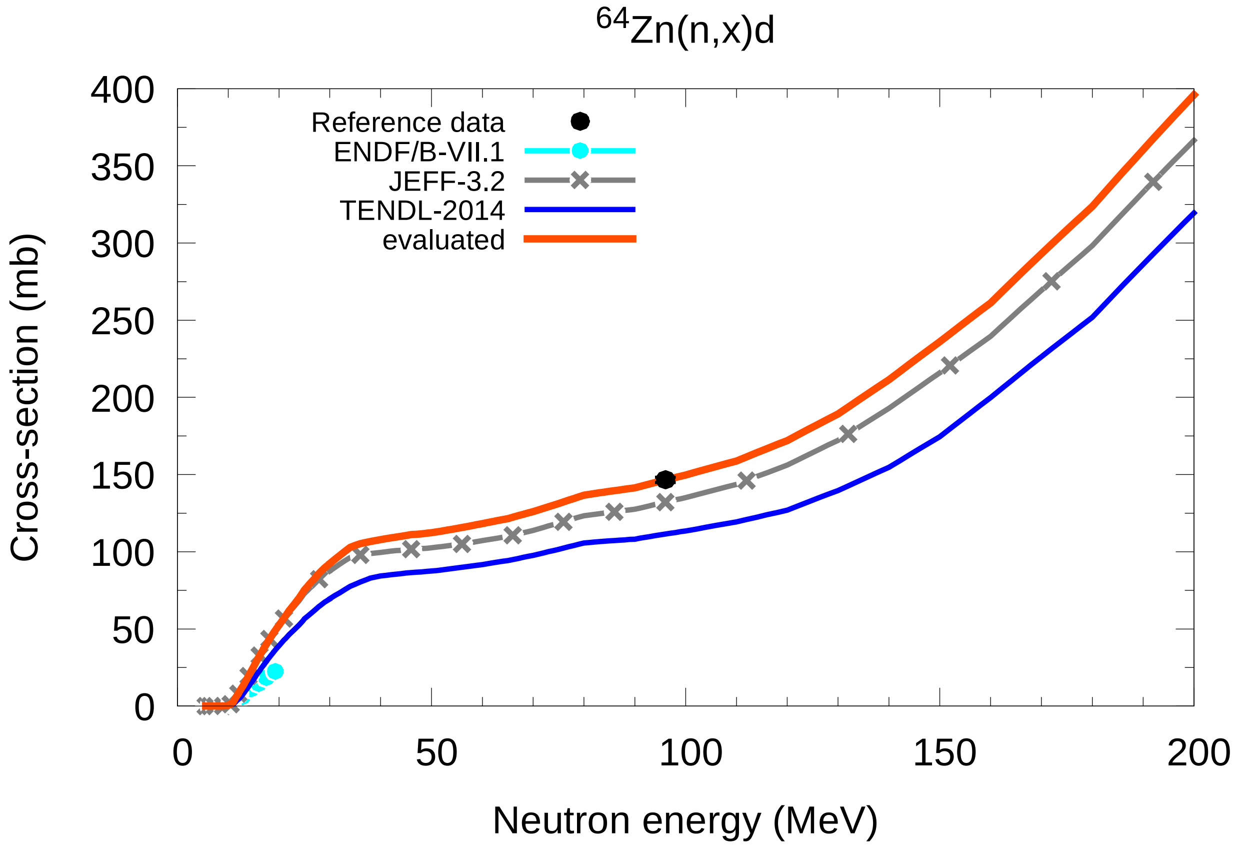
^{62}Ni(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300


^{64}Ni(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
0
50
100
150
200

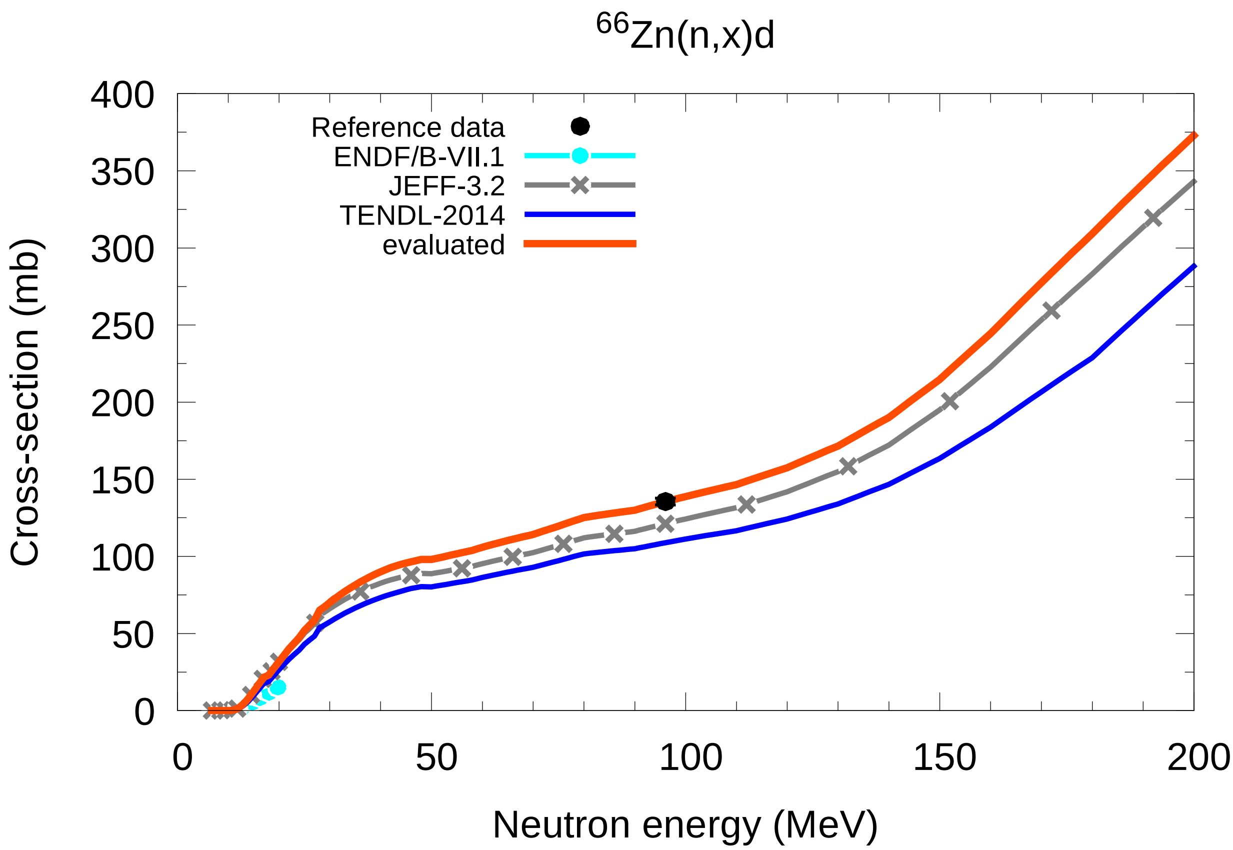

^{63}Cu(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
0
50
100
150
200

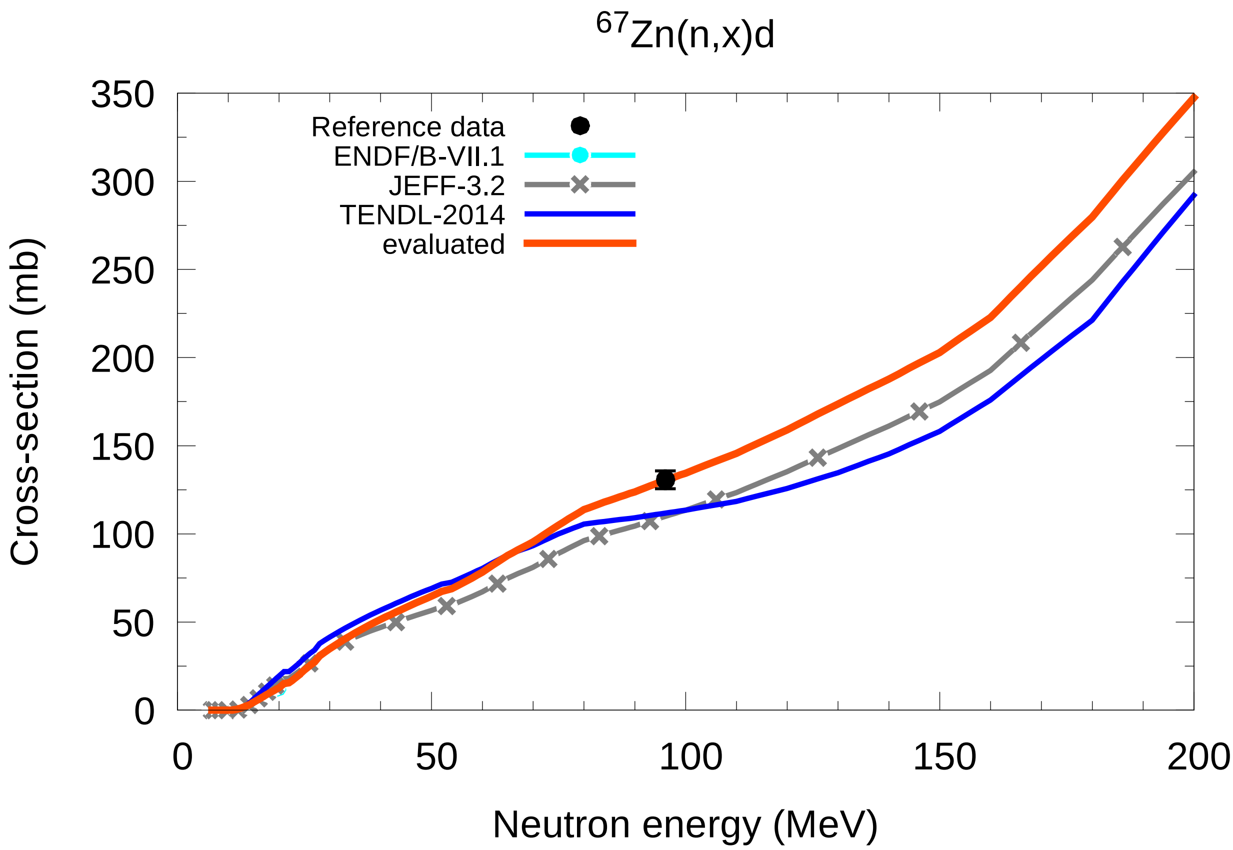


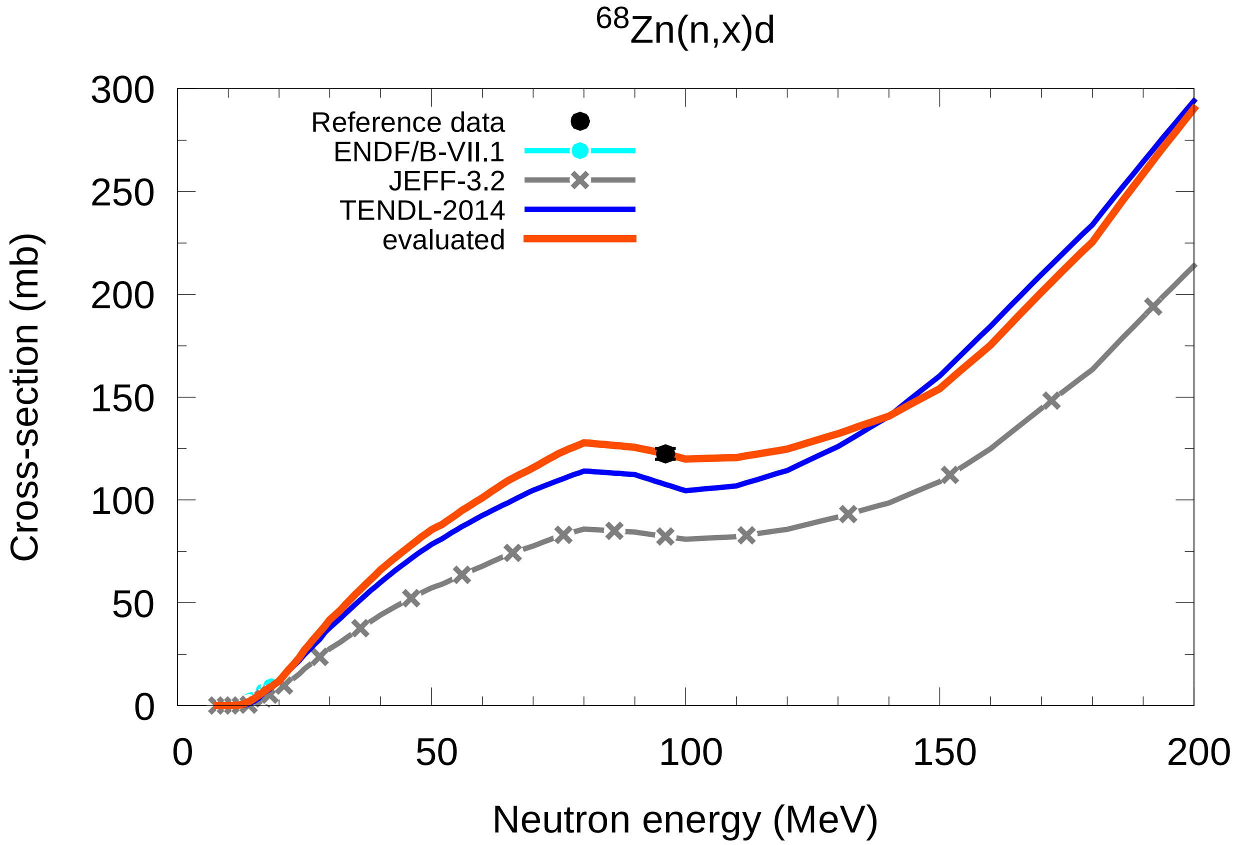
^{65}Cu(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
0
50
100
150
200



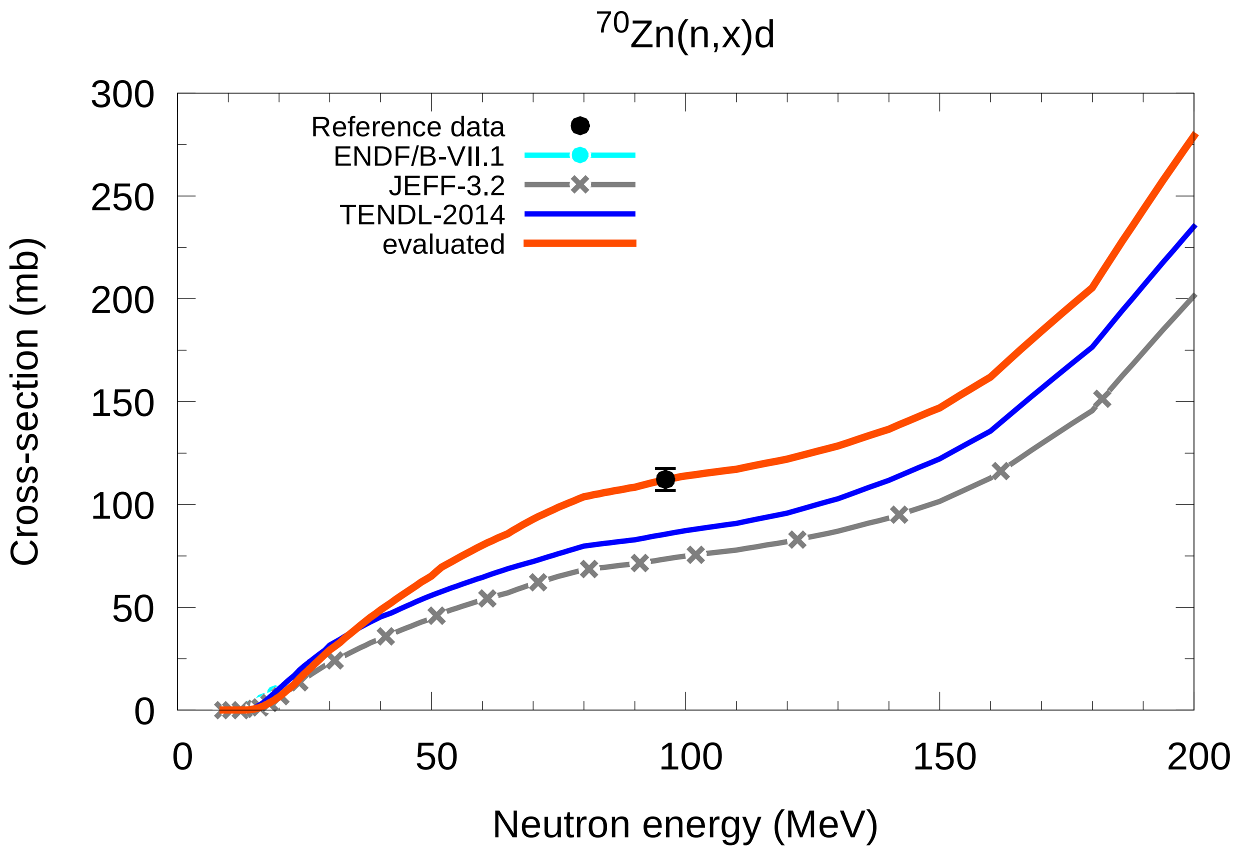
^{64}Zn(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
0
50
100
150
200


^{66}Zn(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400

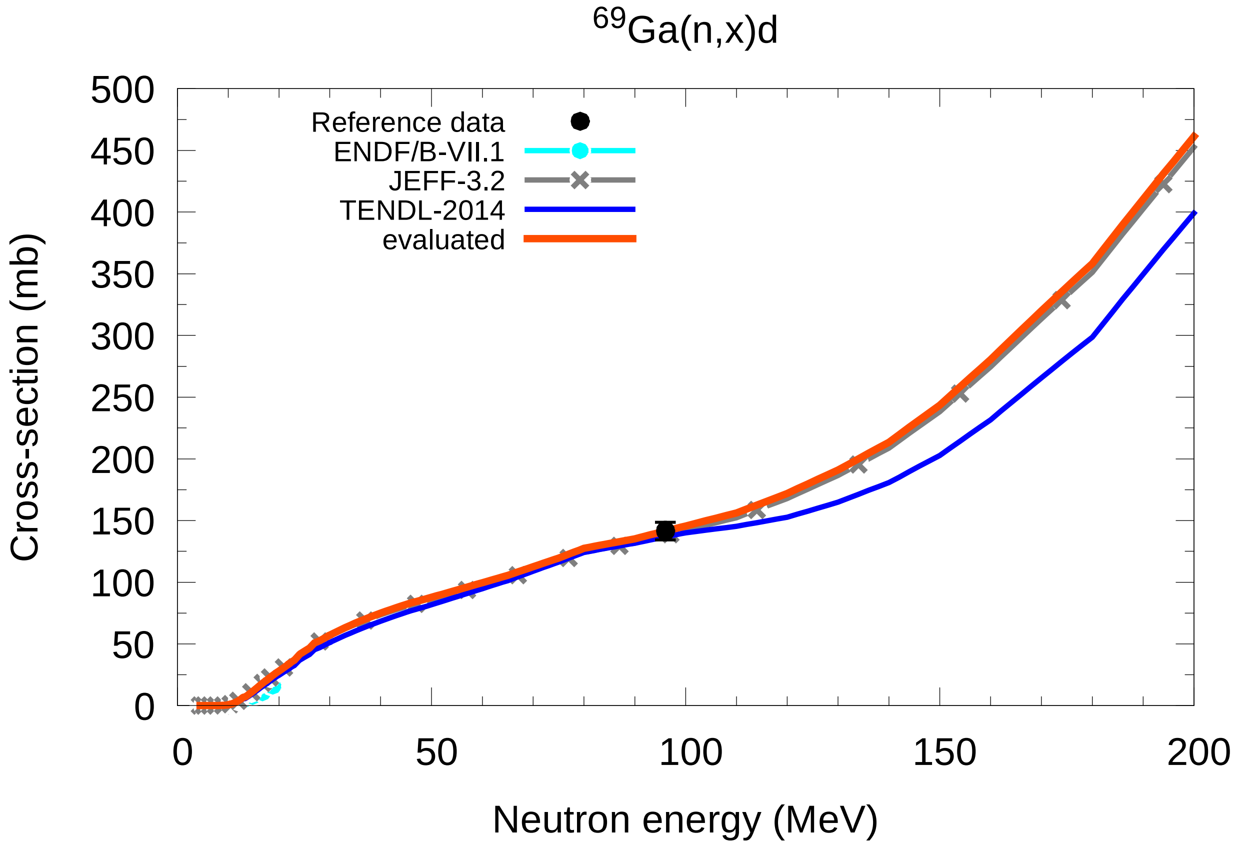

^{67}Zn(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



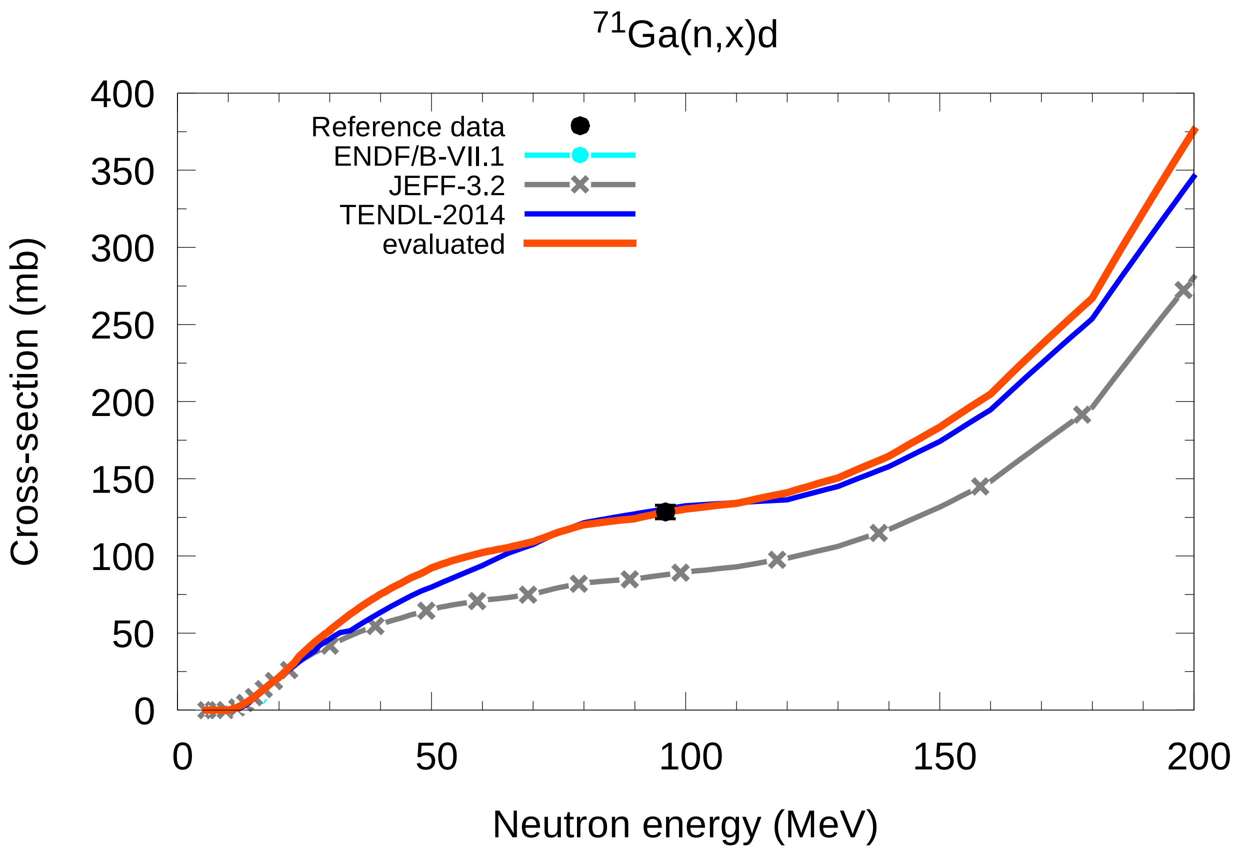
^{68}Zn(n,x)d
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300
0
50
100
150
200



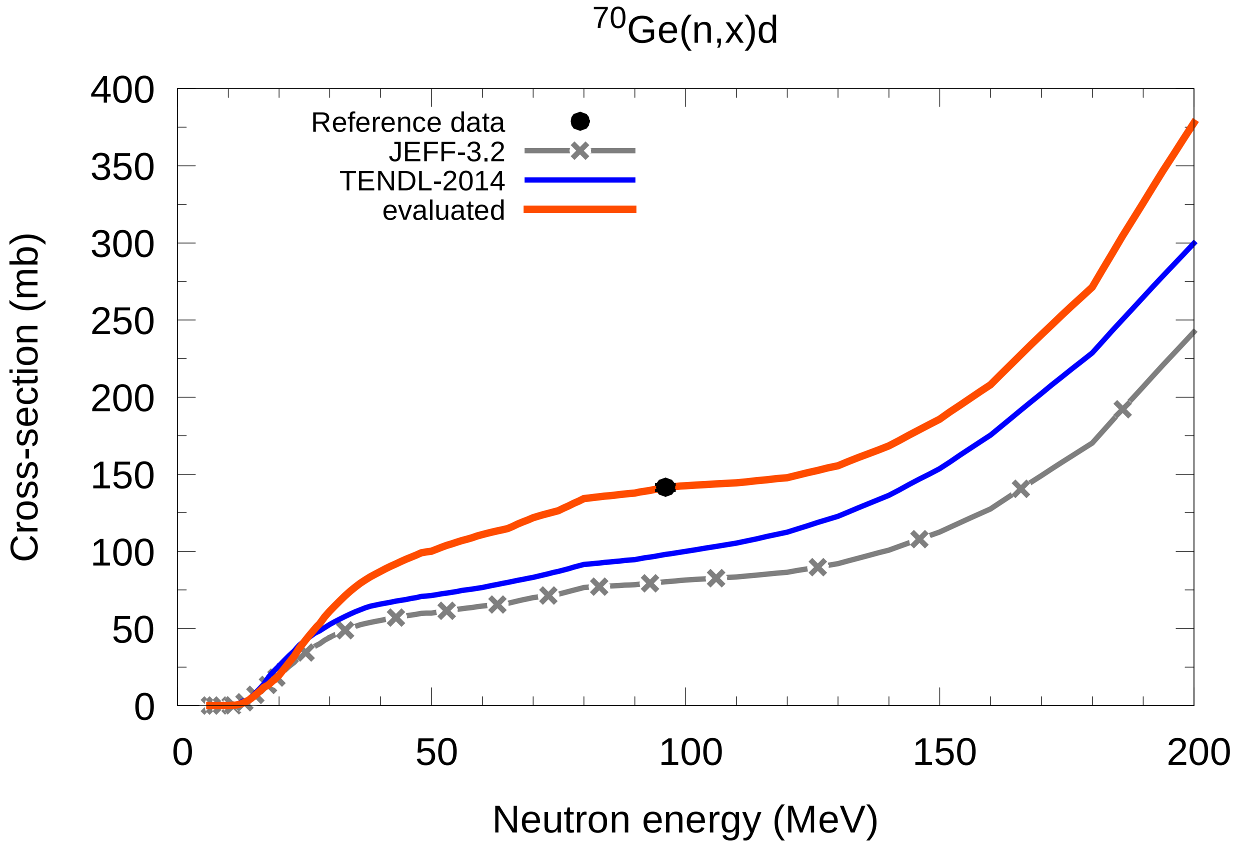
^{70}Zn(n,x)d
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300
0
50
100
150
200



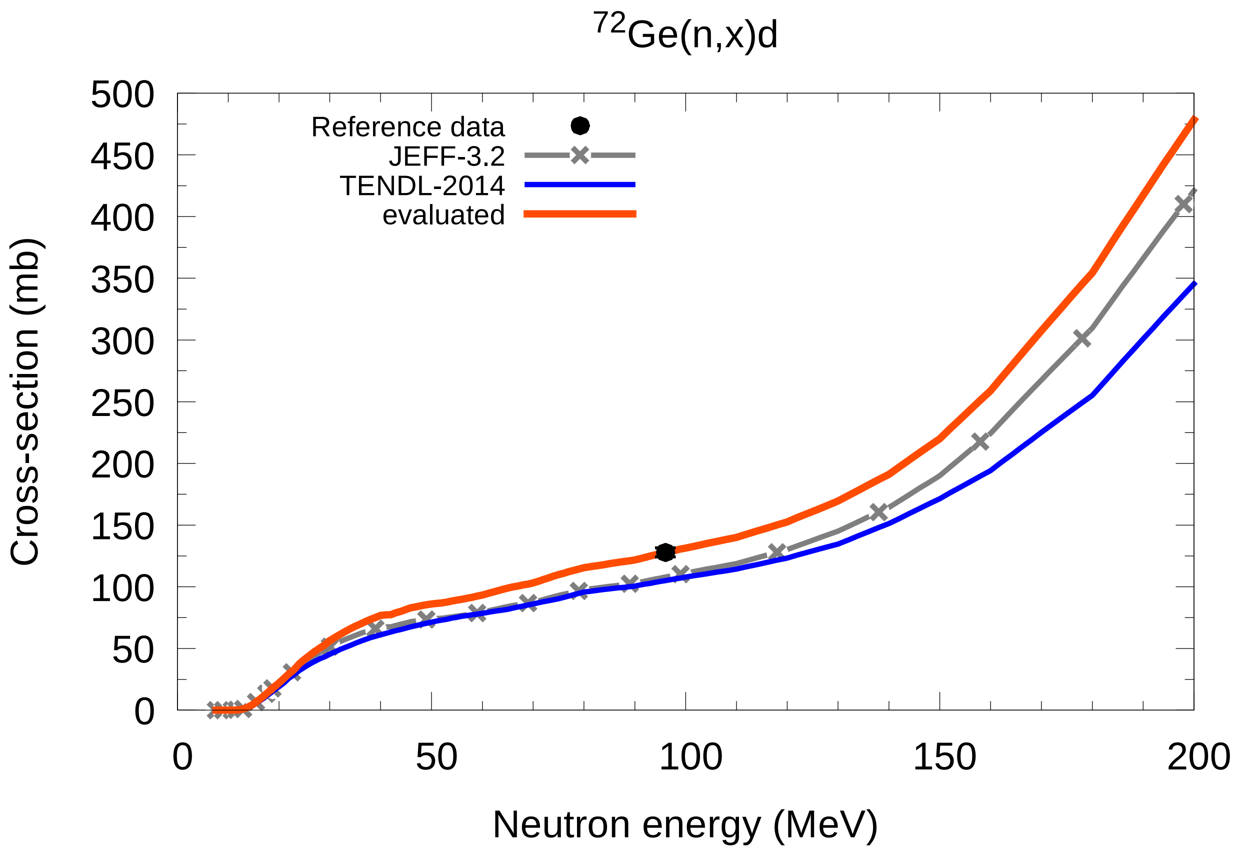
^{69}Ga(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



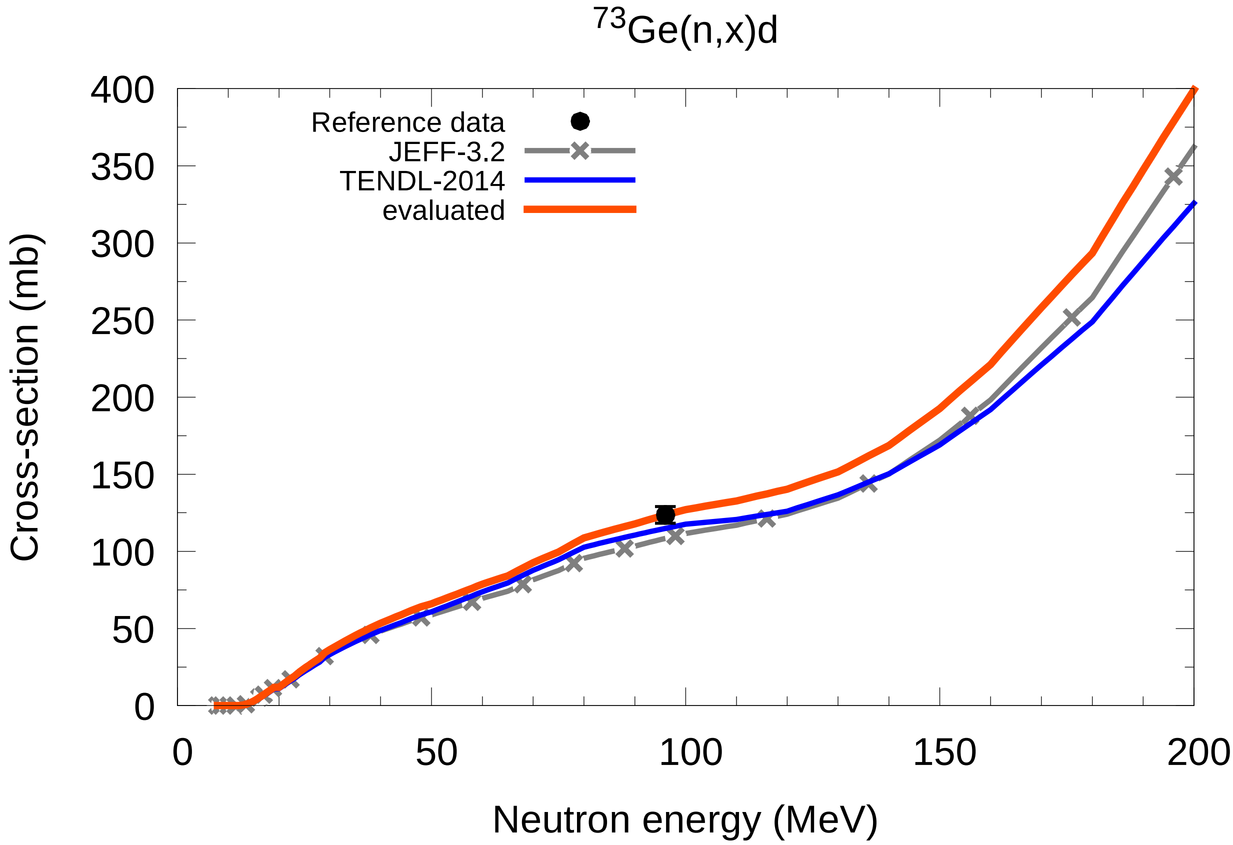
^{71}Ga(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



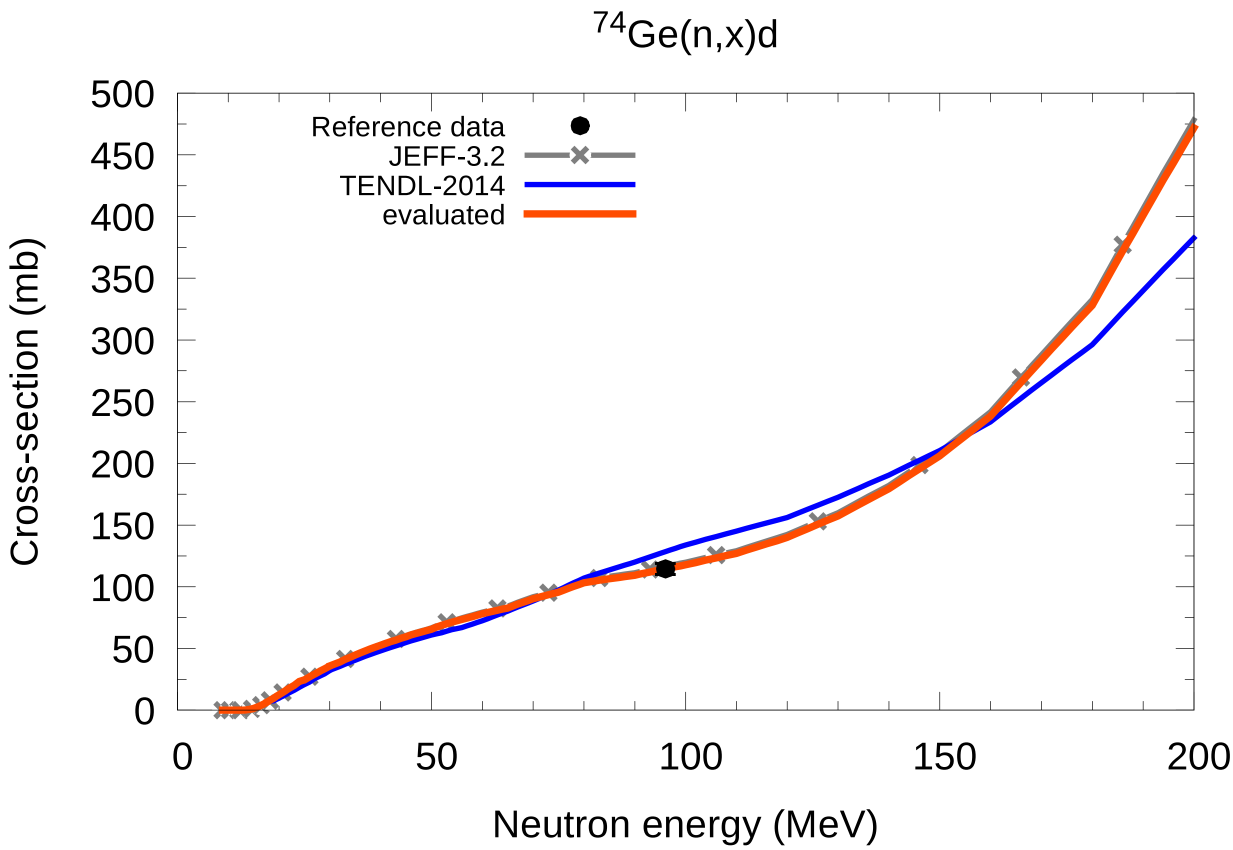
^{70}Ge(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



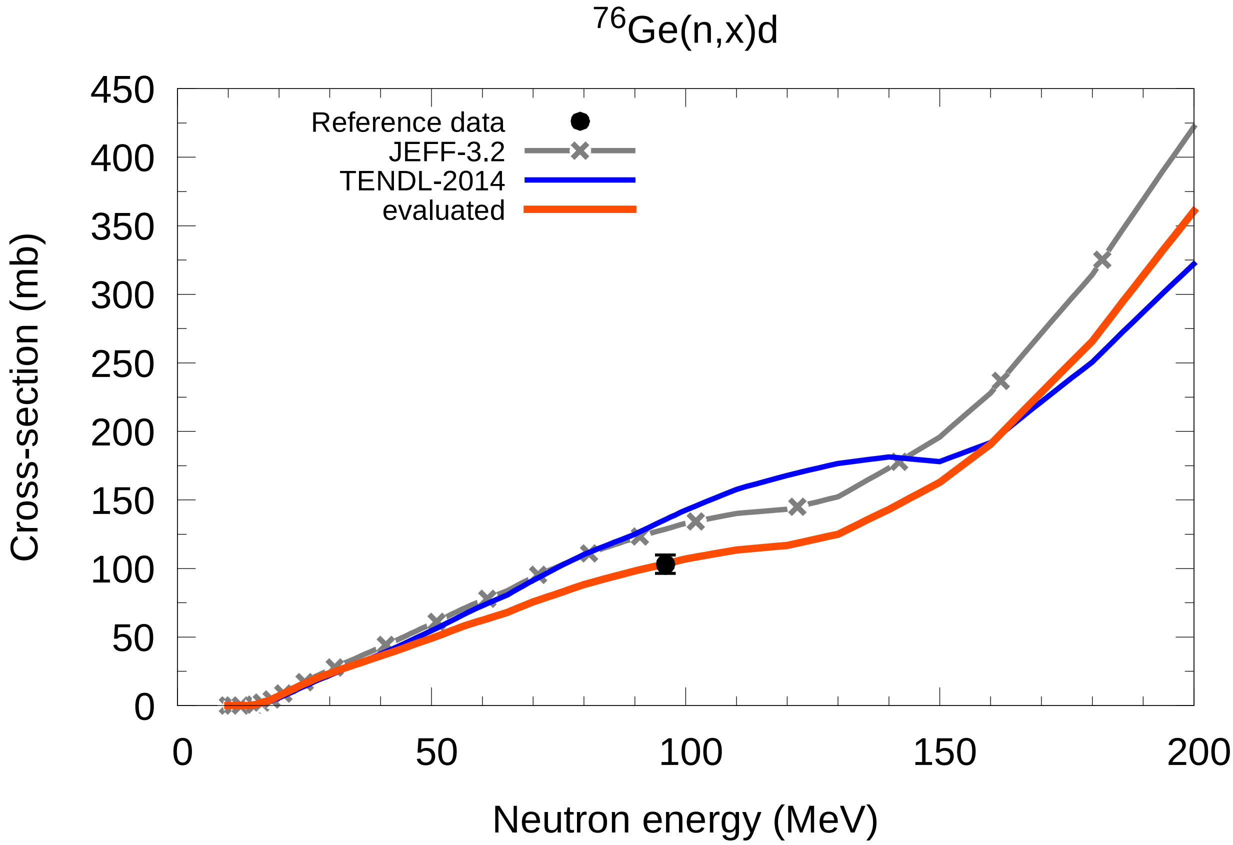
^{72}Ge(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



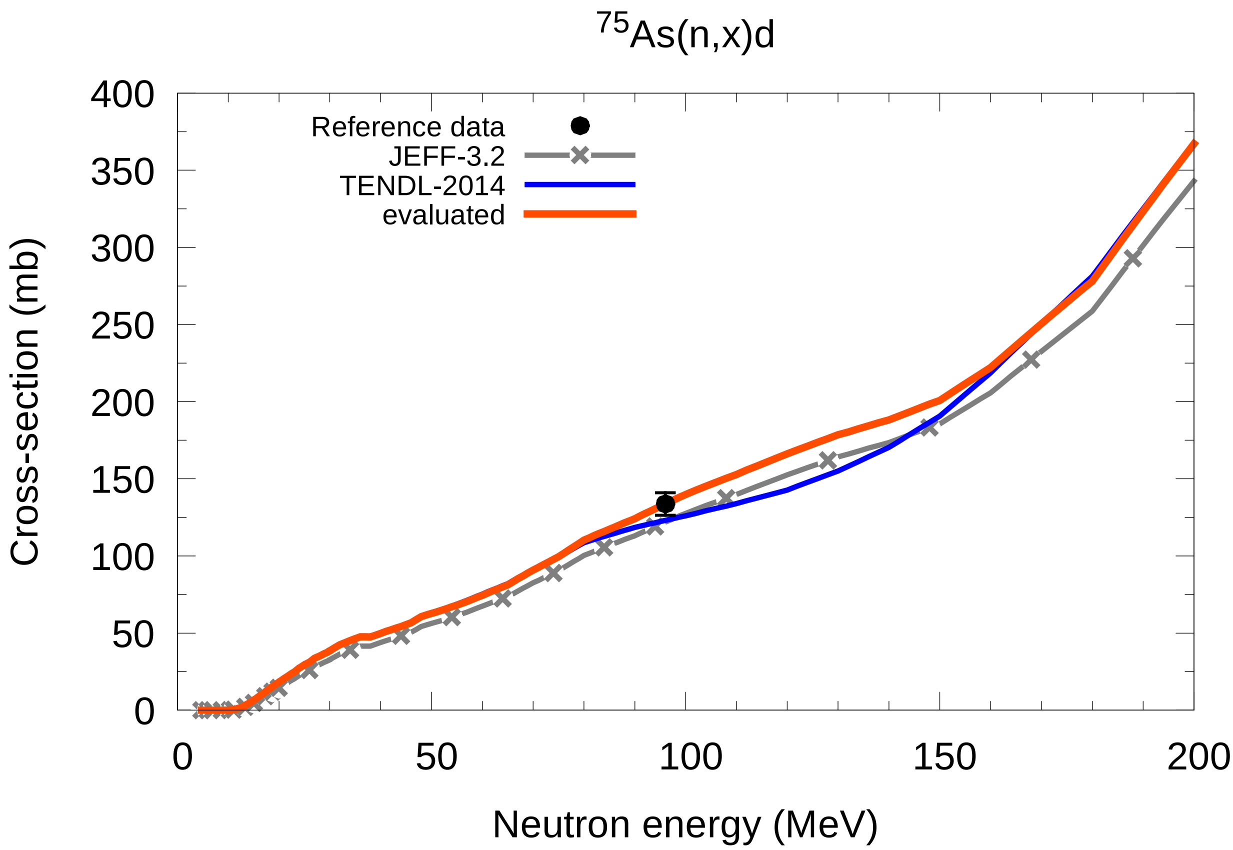
^{73}Ge(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
0
50
100
150
200
250
300
350
400
0
50
100
150
200
Neutron energy (MeV)



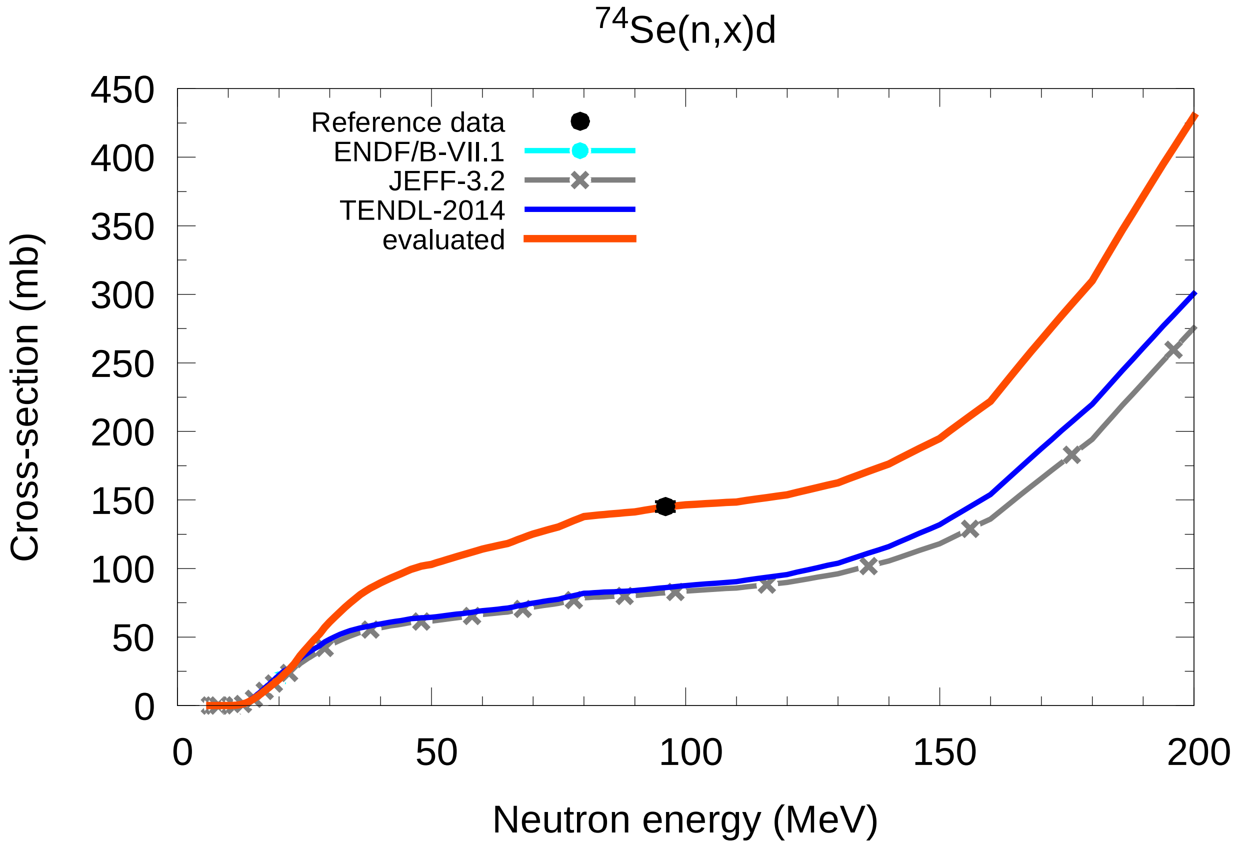
^{74}Ge(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
0
50
100
150
200
250
300
350
400
450
500
0
50
100
150
200
Neutron energy (MeV)



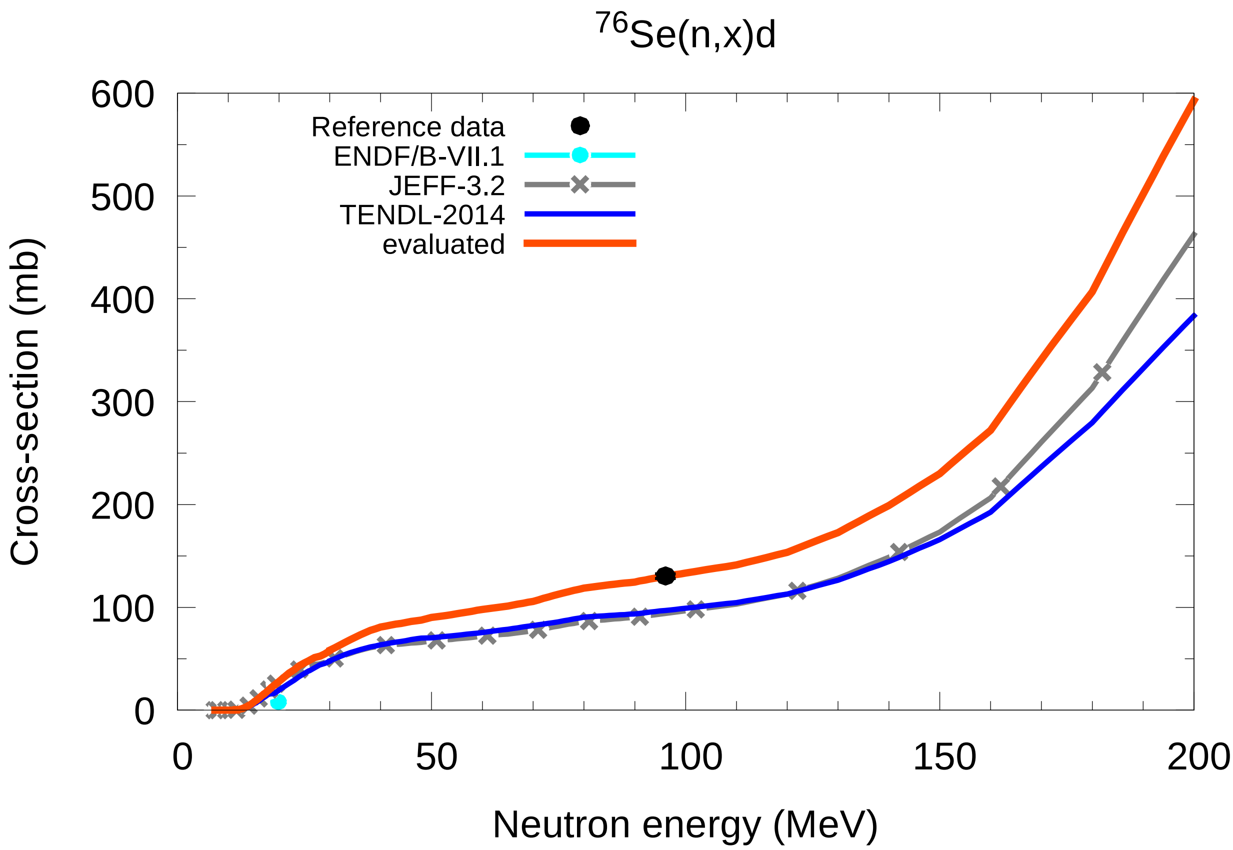
^{76}Ge(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



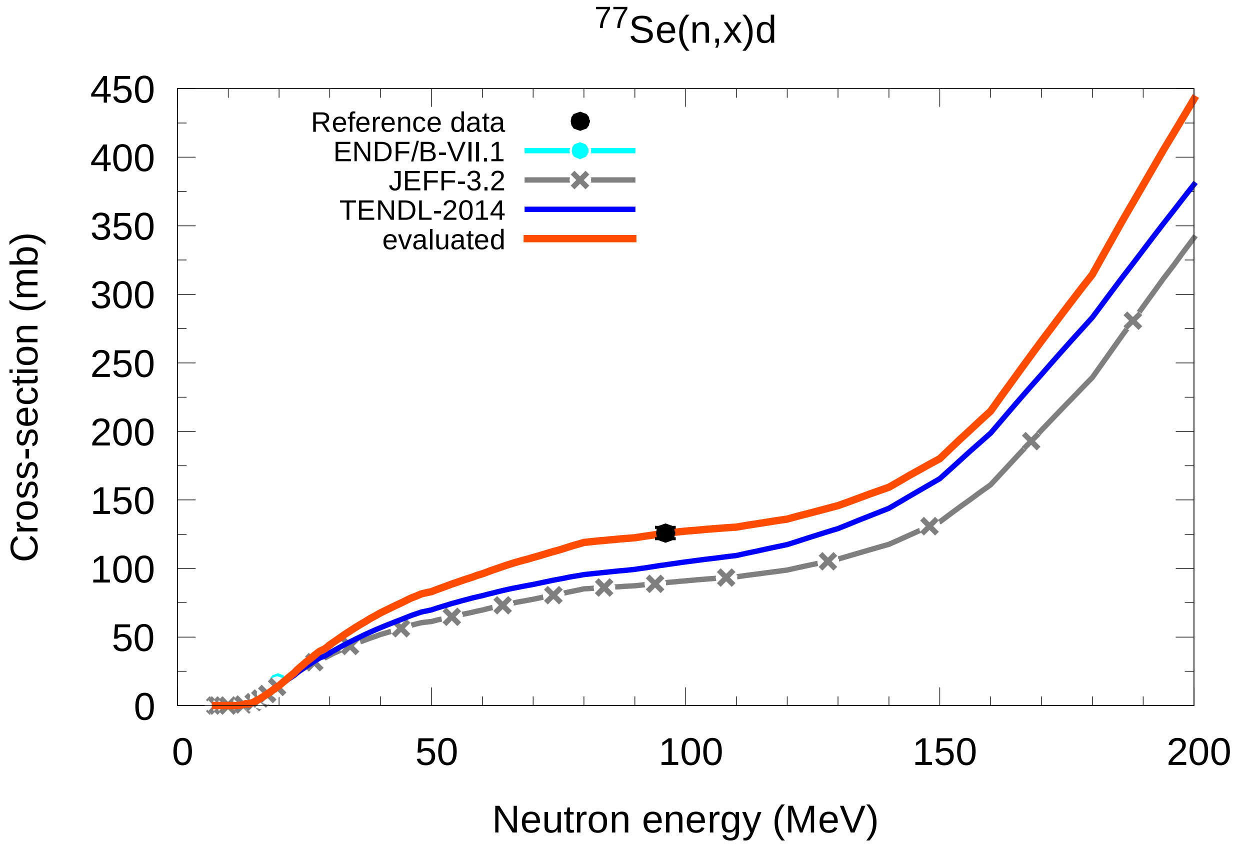
^{75}As(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



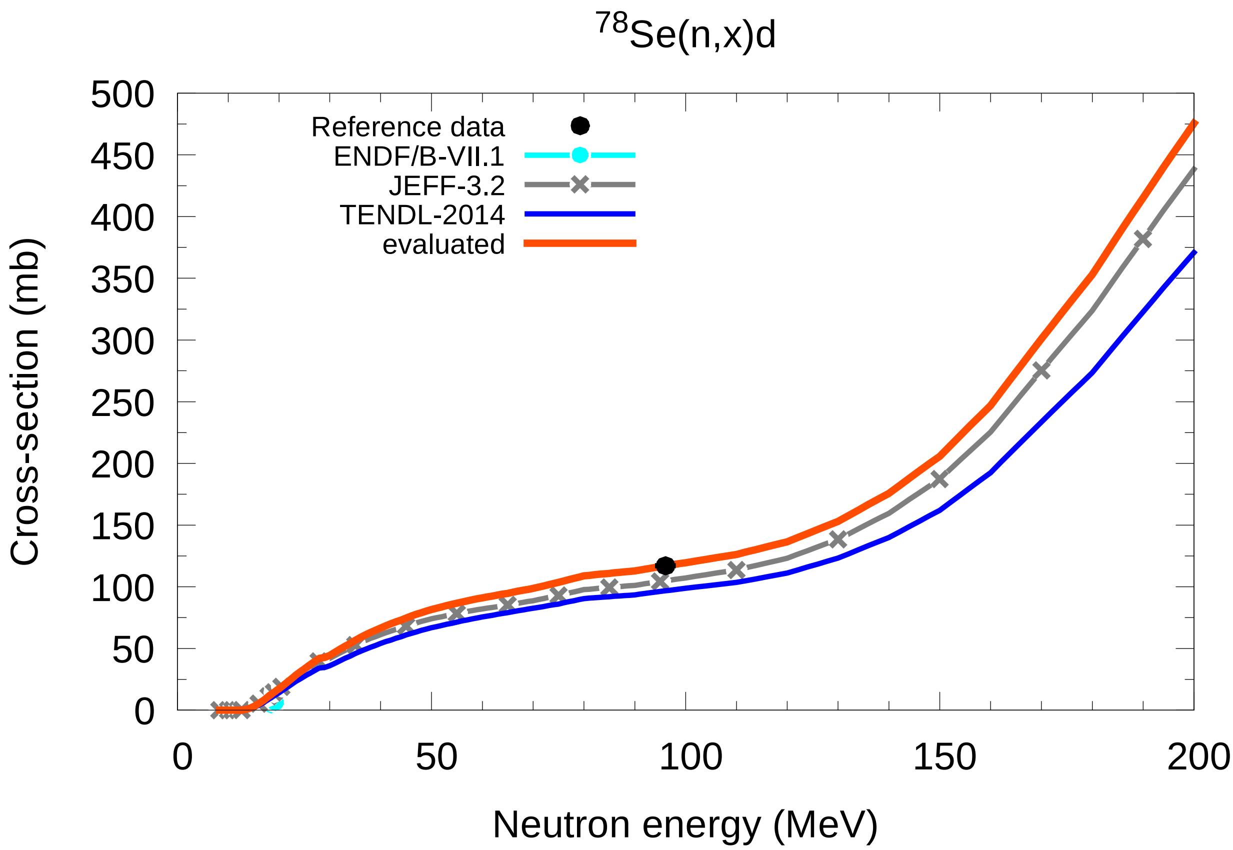
^{74}Se(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



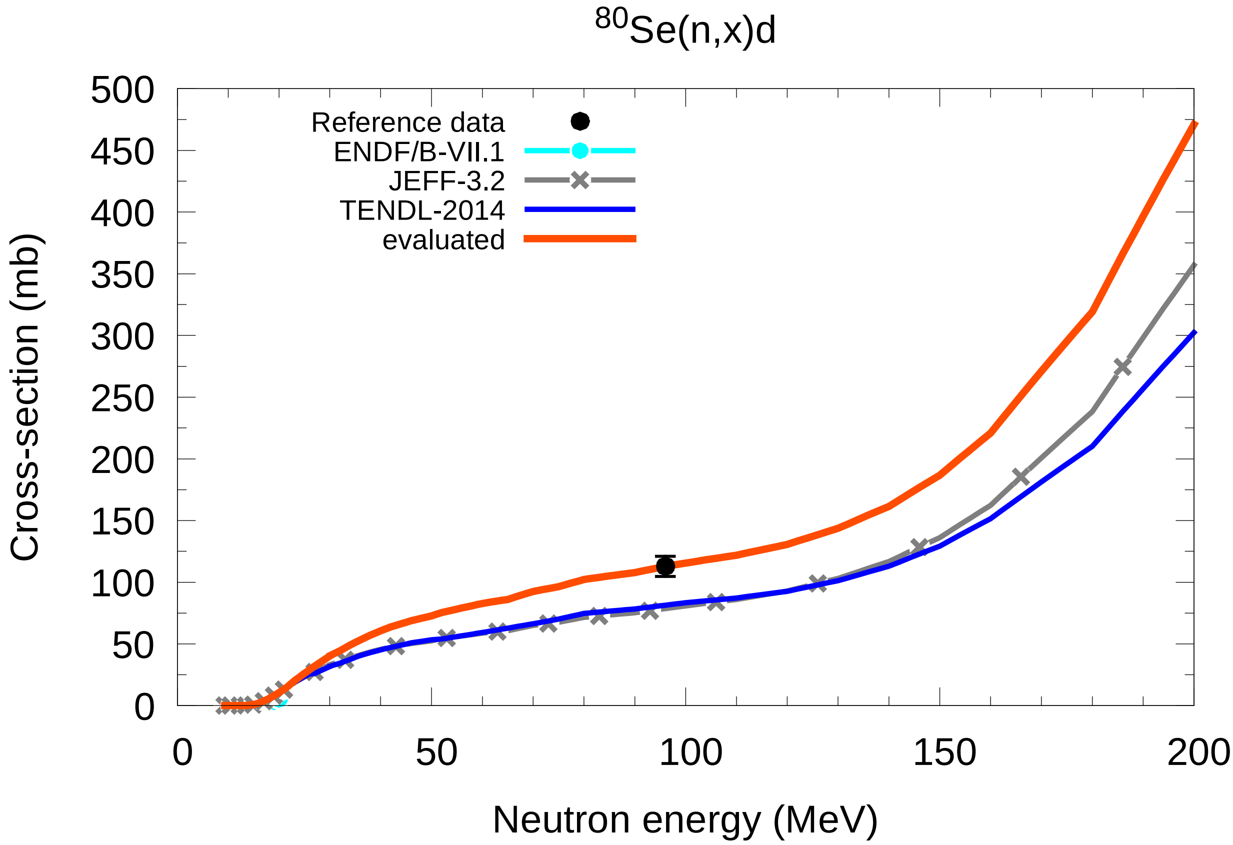
^{76}Se(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600



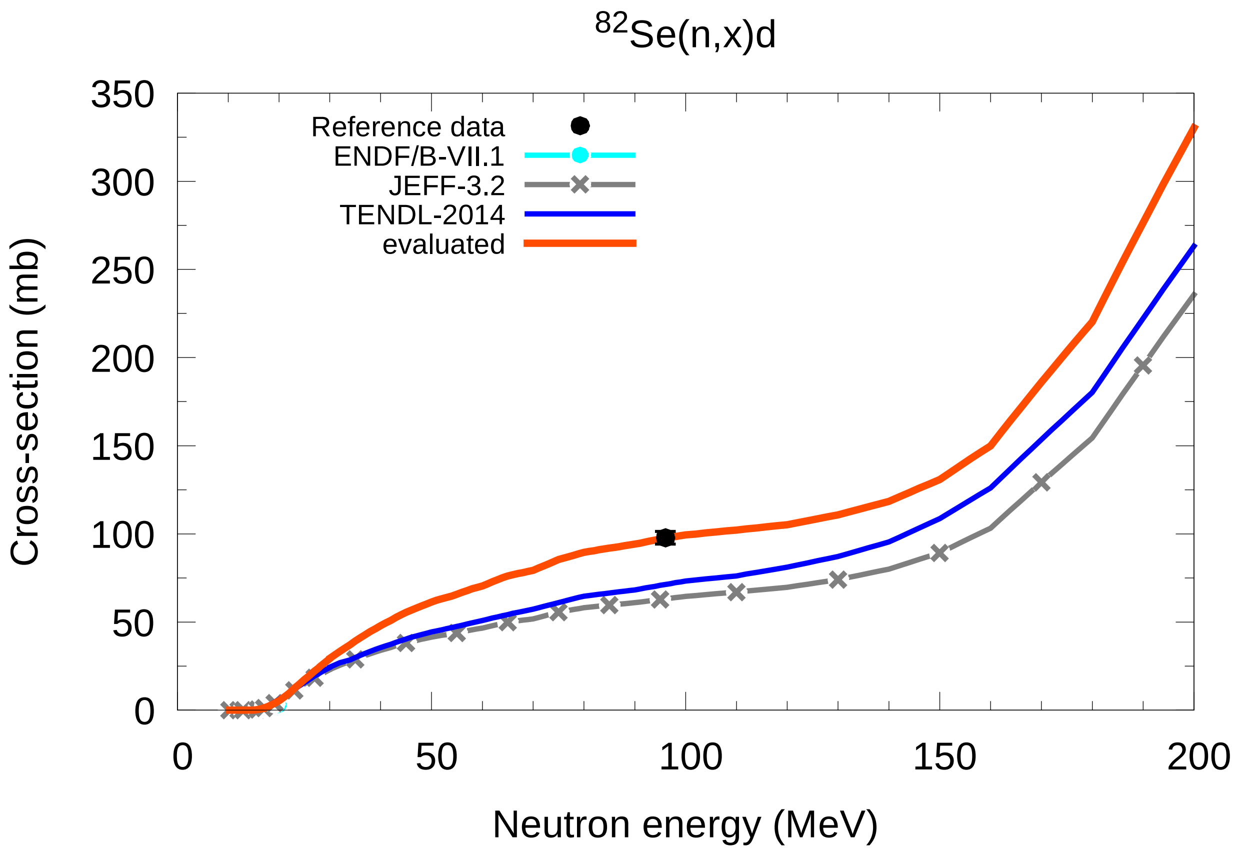
^{77}Se(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



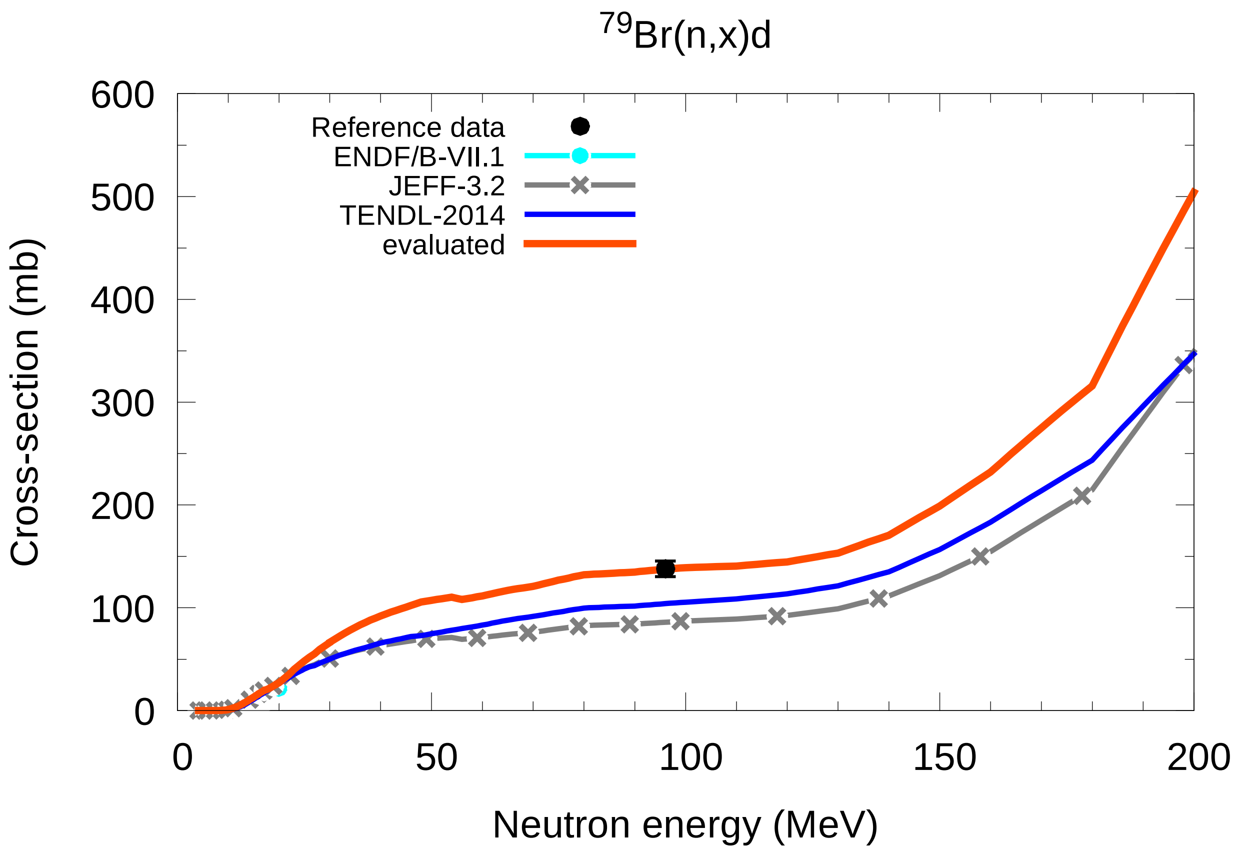
^{78}Se(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



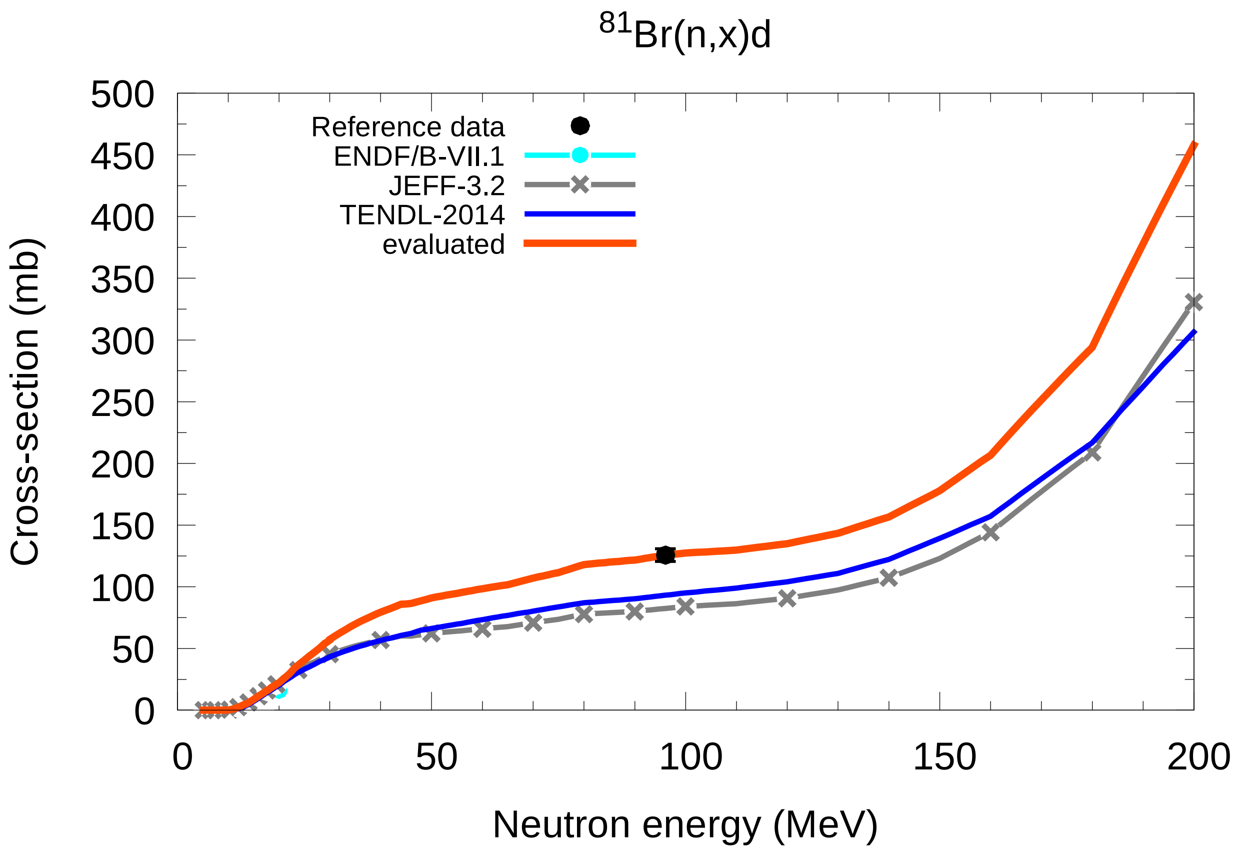
^{80}Se(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500
0
50
100
150
200



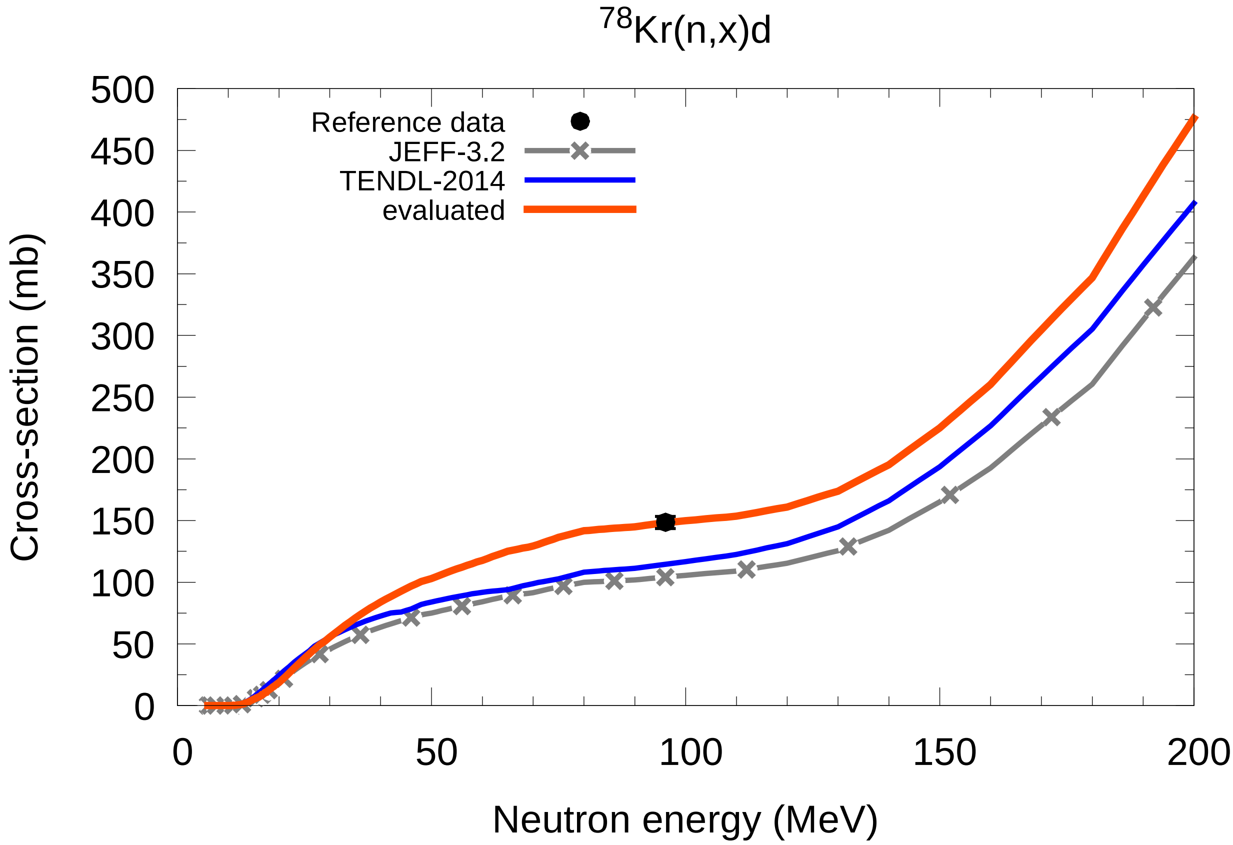
^{82}Se(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
0
50
100
150
200

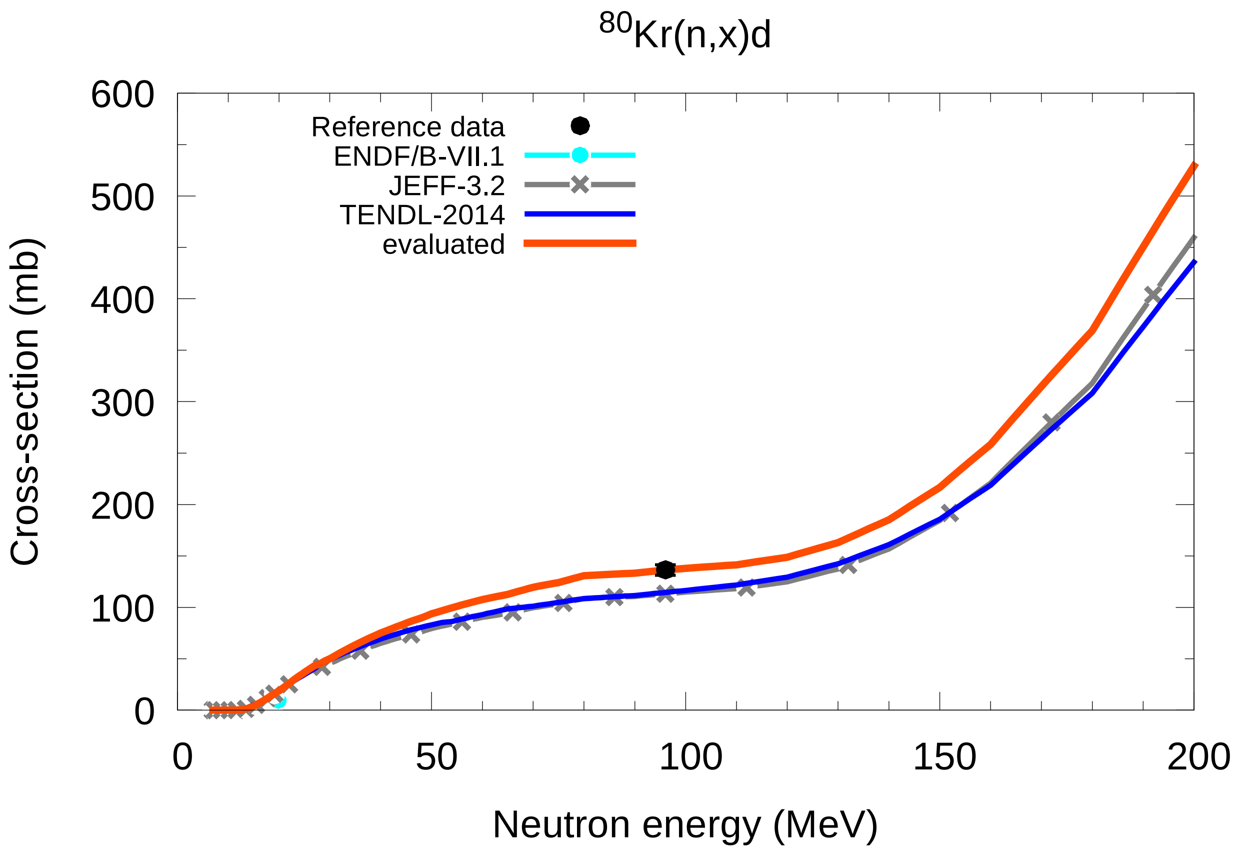


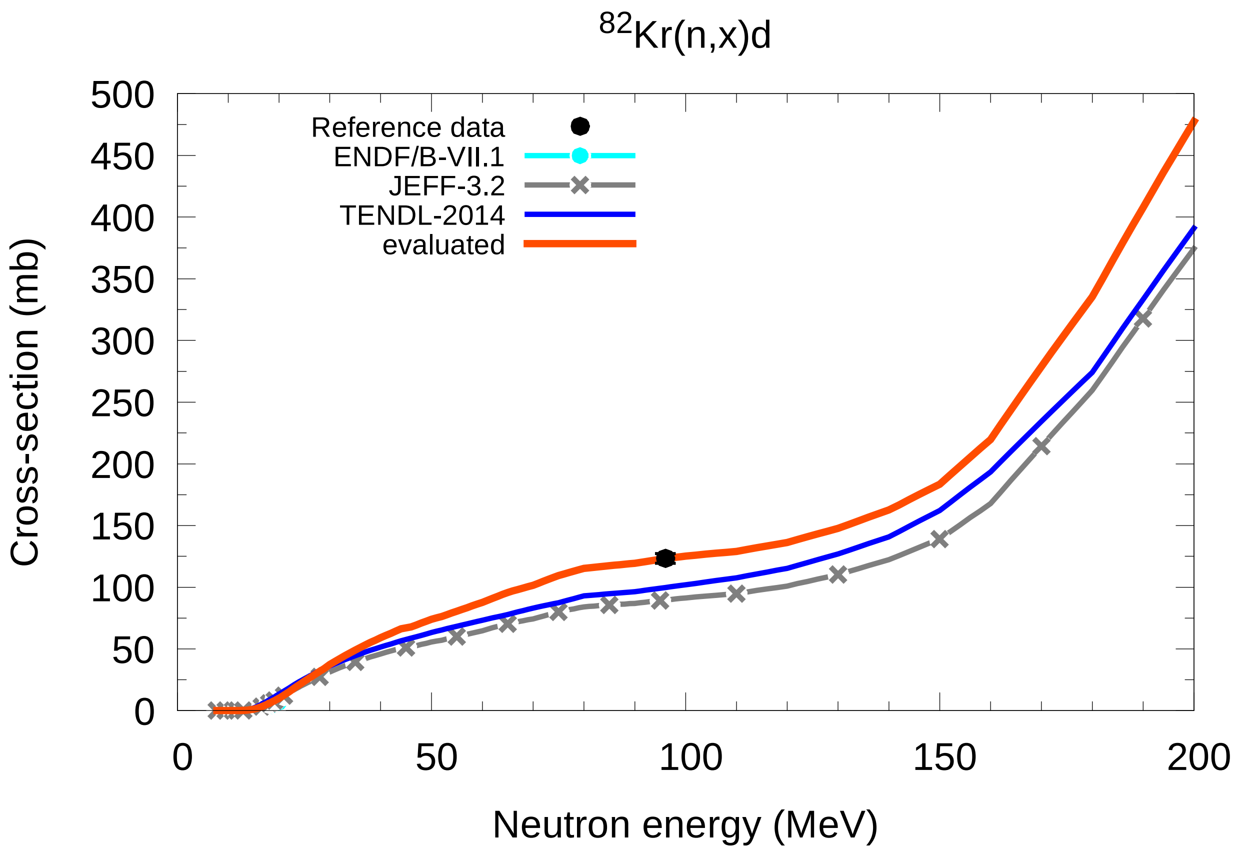
^{79}Br(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



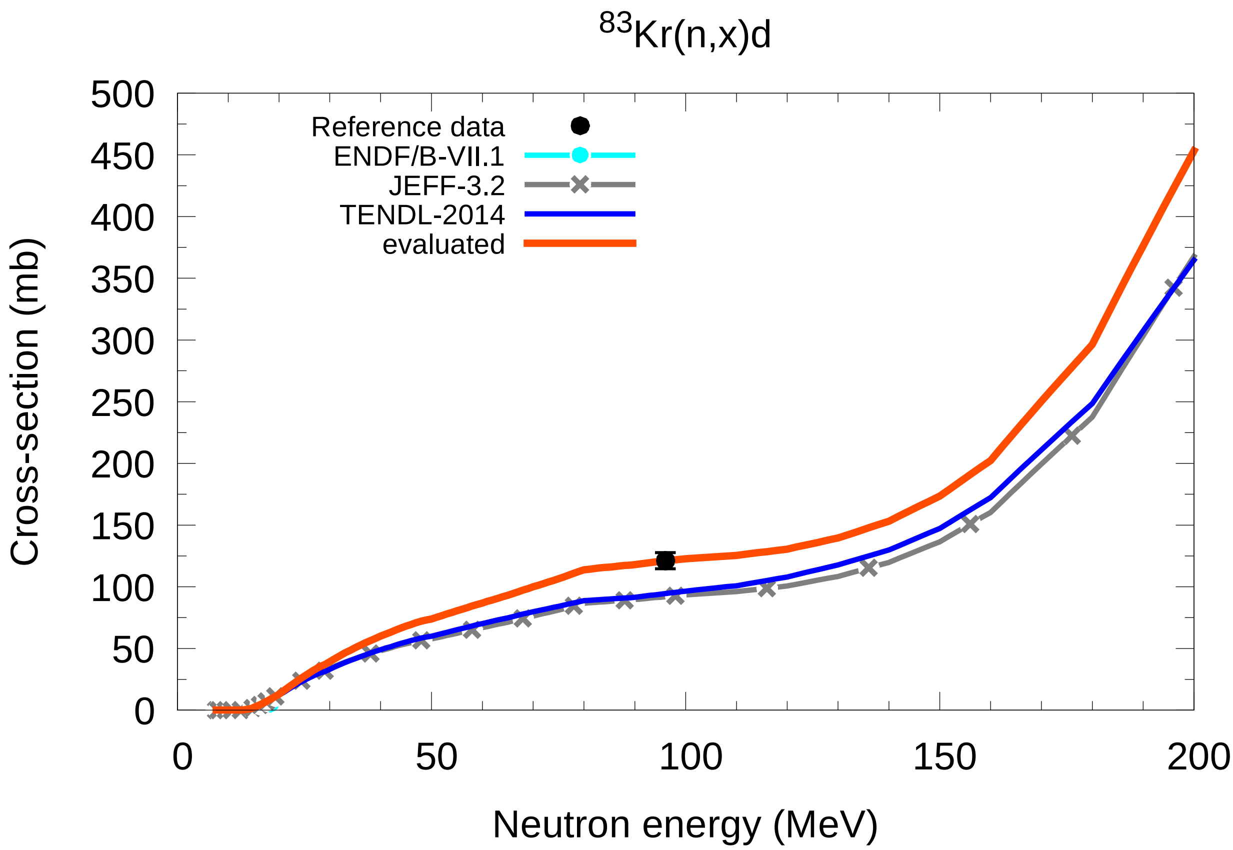
^{81}Br(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500
0
50
100
150
200


^{78}Kr(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
500
450
400
350
300
250
200
150
100
50
0
0
50
100
150
200

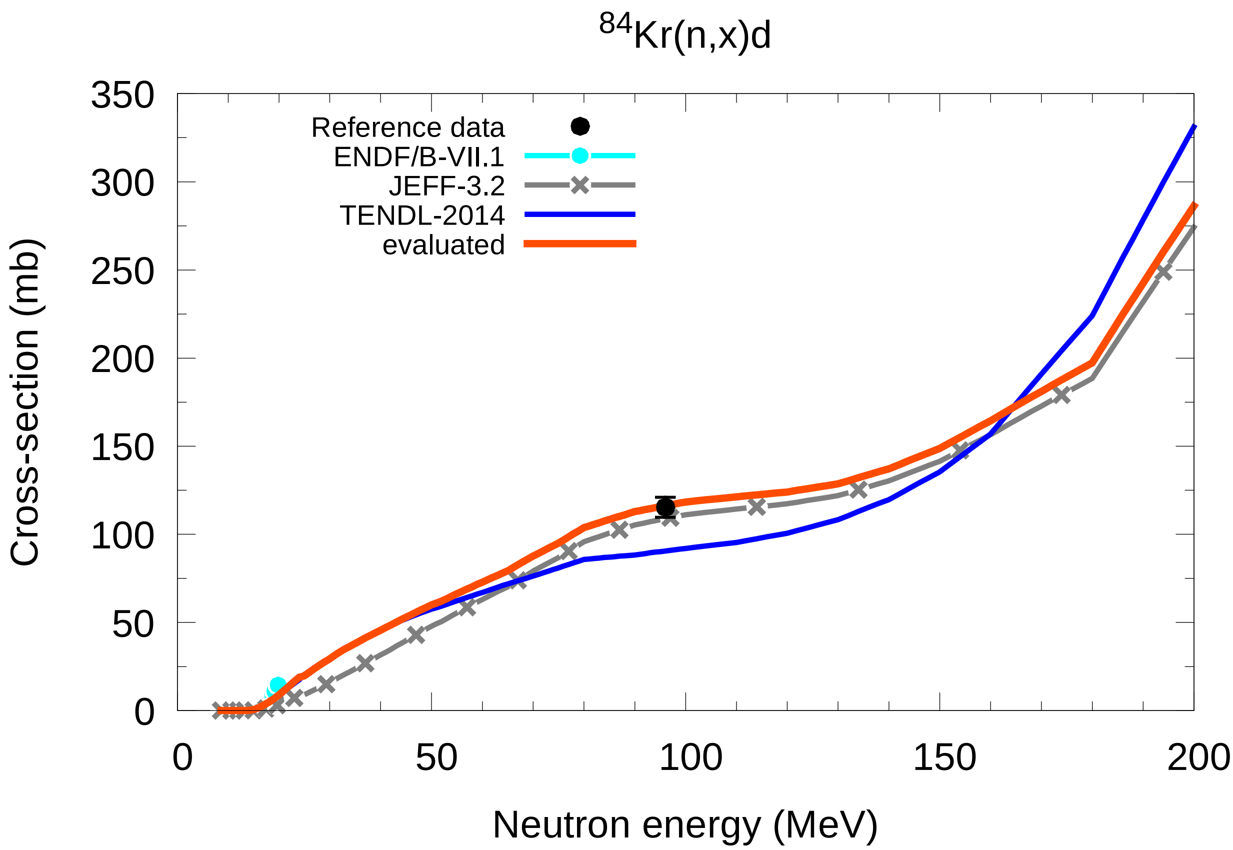

^{80}Kr(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
600
500
400
300
200
100
0
0
50
100
150
200



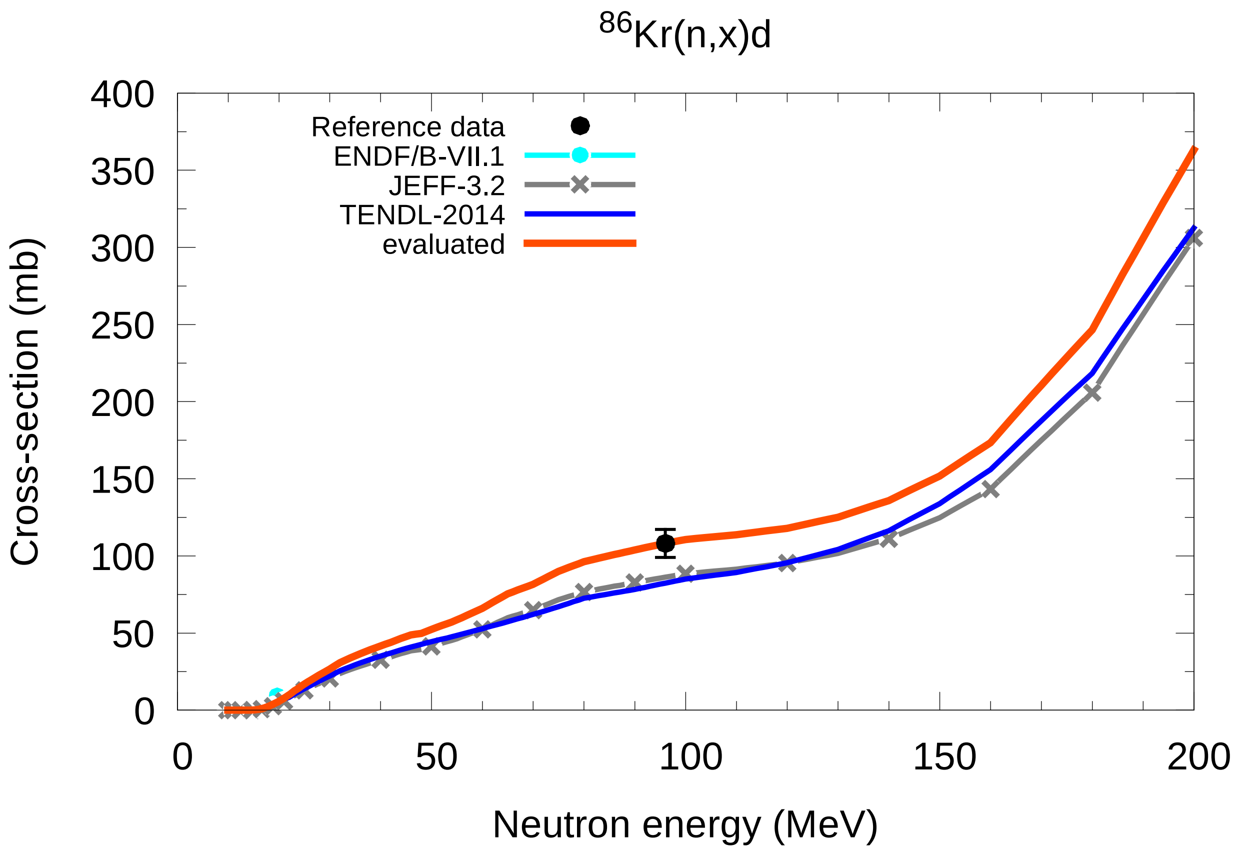
^{82}Kr(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



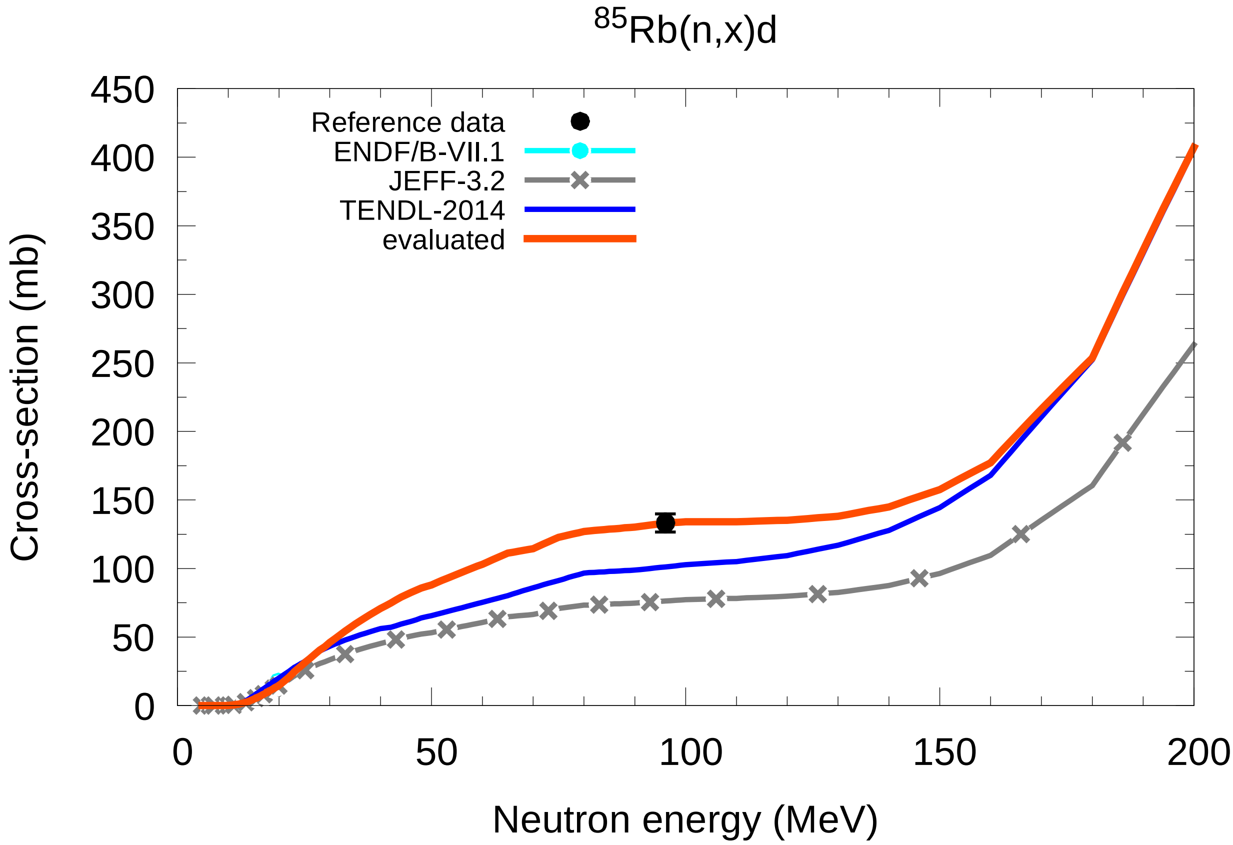
^{83}Kr(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



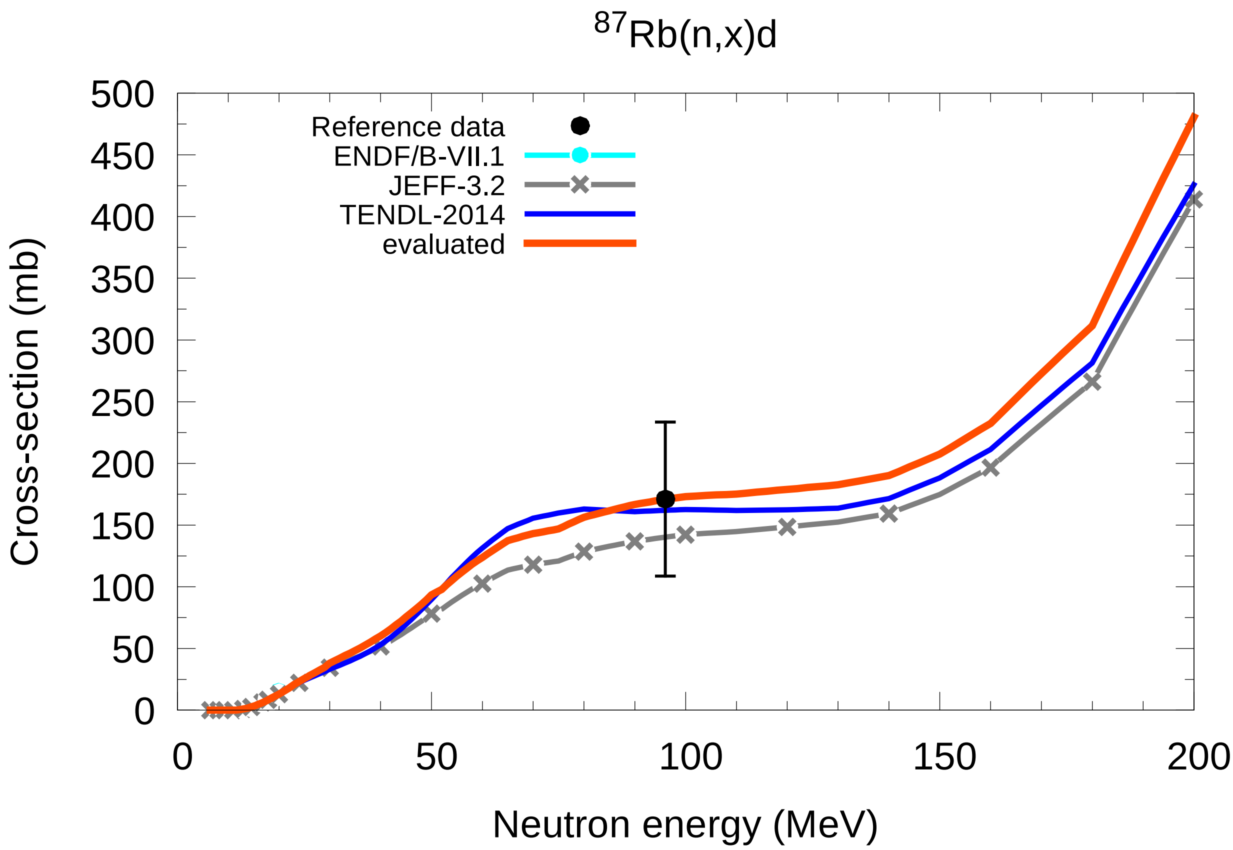
^{84}Kr(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



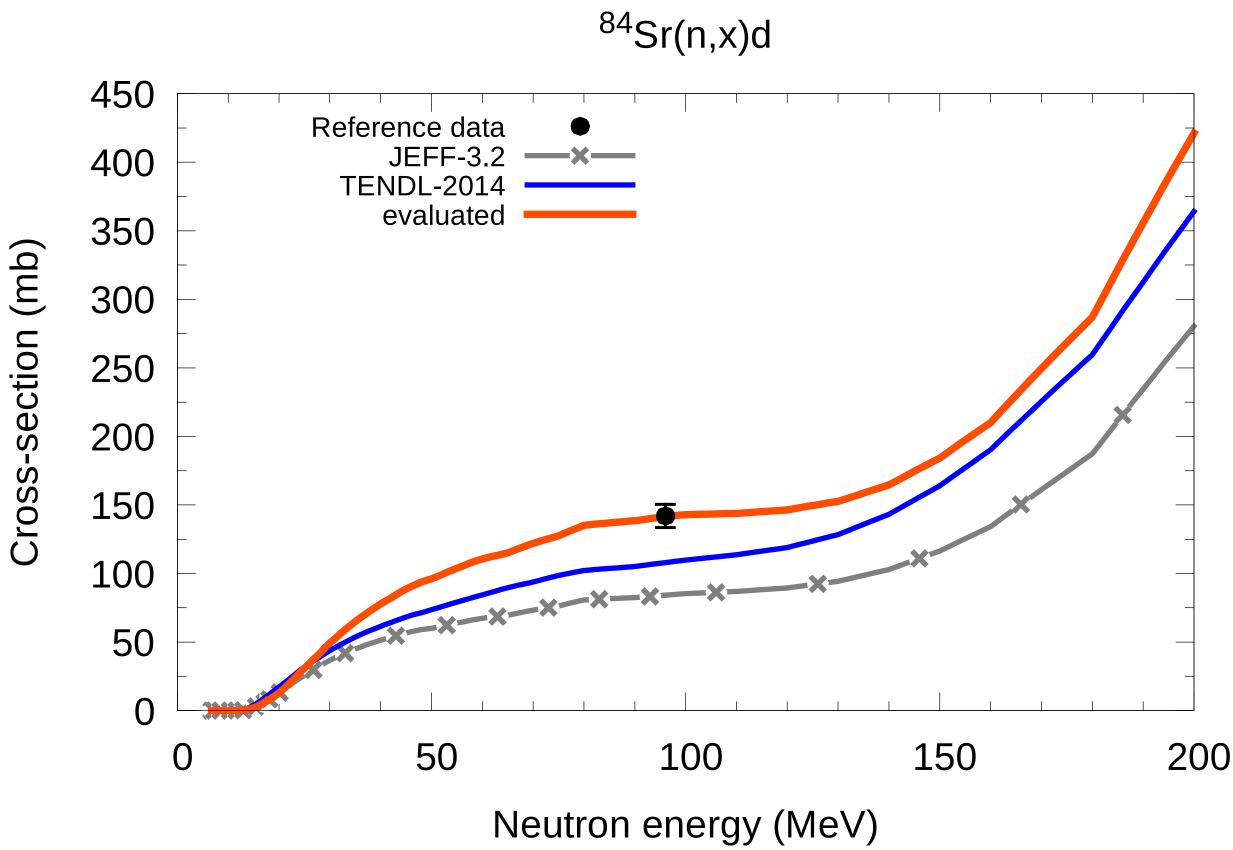
^{86}Kr(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



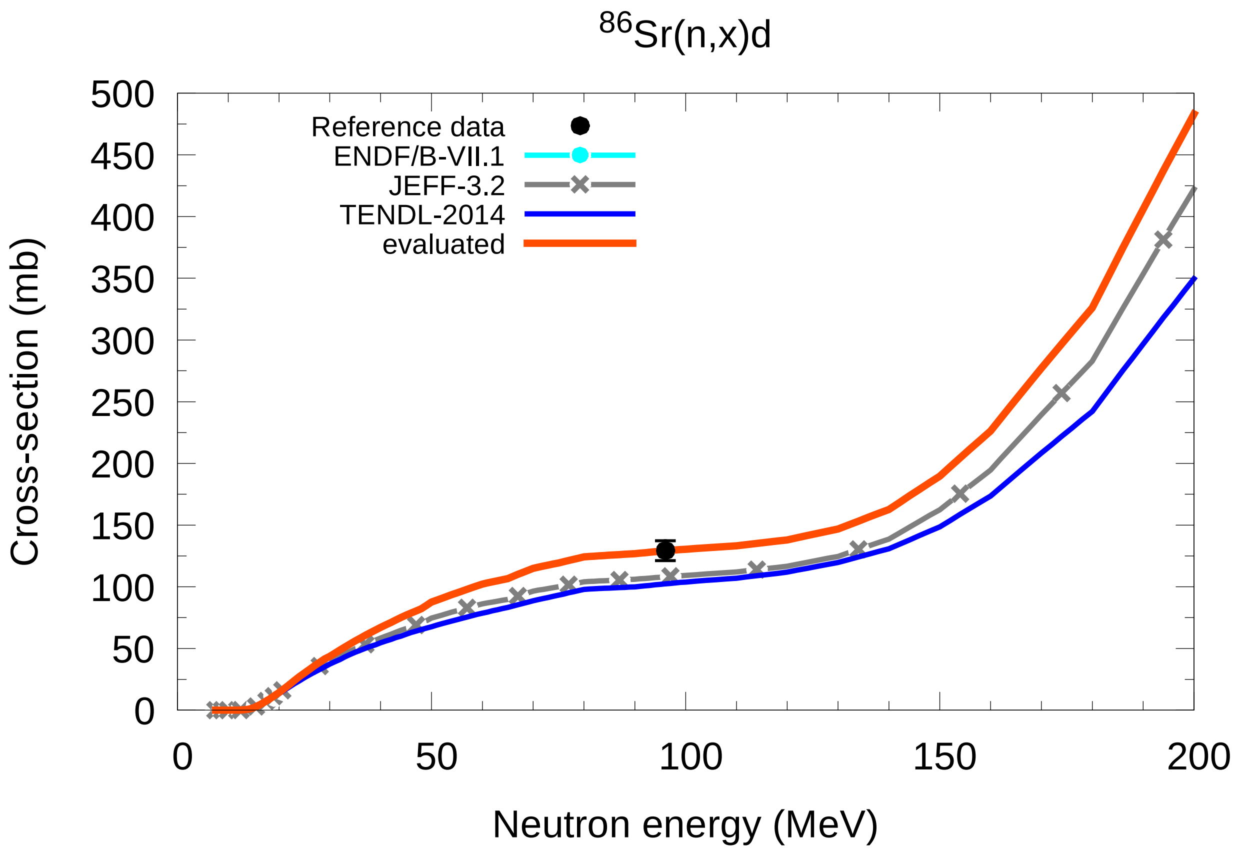
^{85}Rb(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
0
50
100
150
200
250
300
350
400
450
0
50
100
150
200
Neutron energy (MeV)



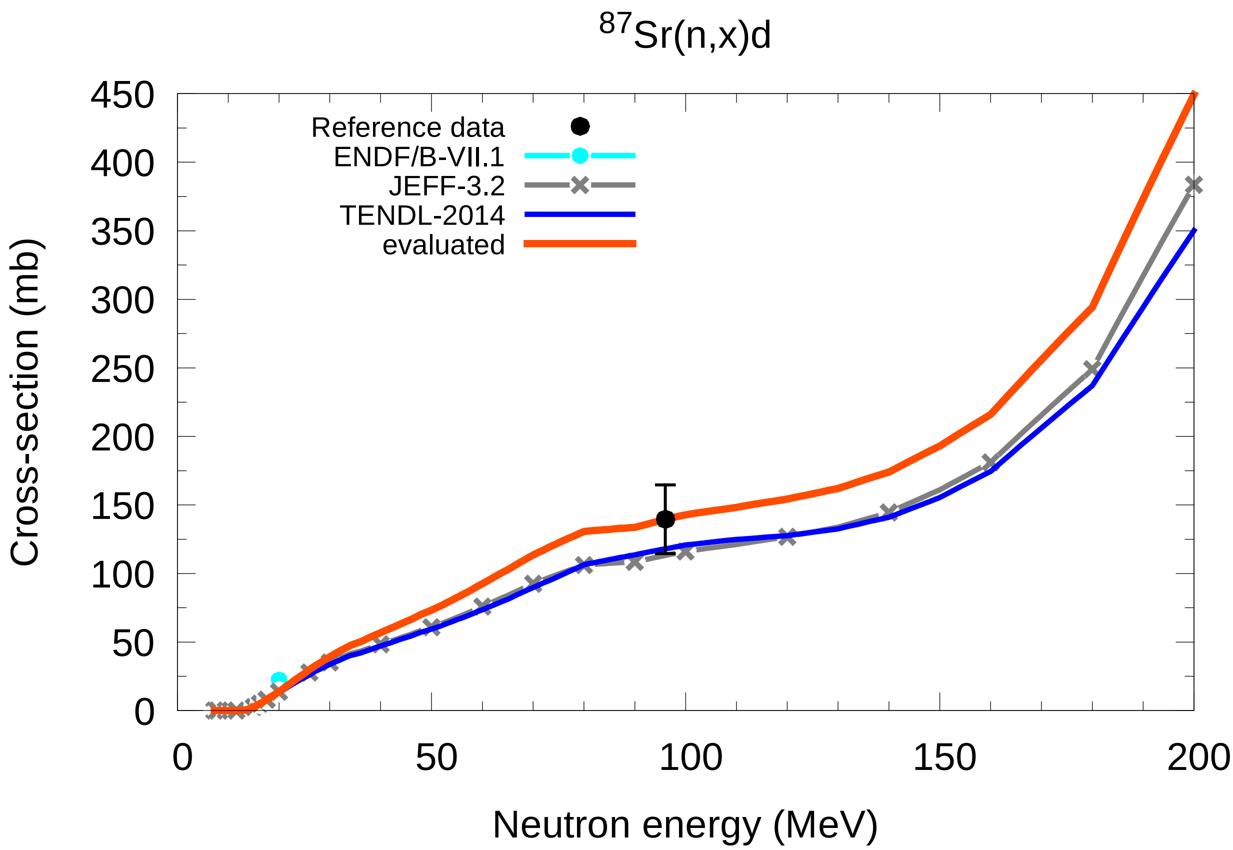
^{87}Rb(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
0
50
100
150
200
250
300
350
400
450
500
0
50
100
150
200
Neutron energy (MeV)



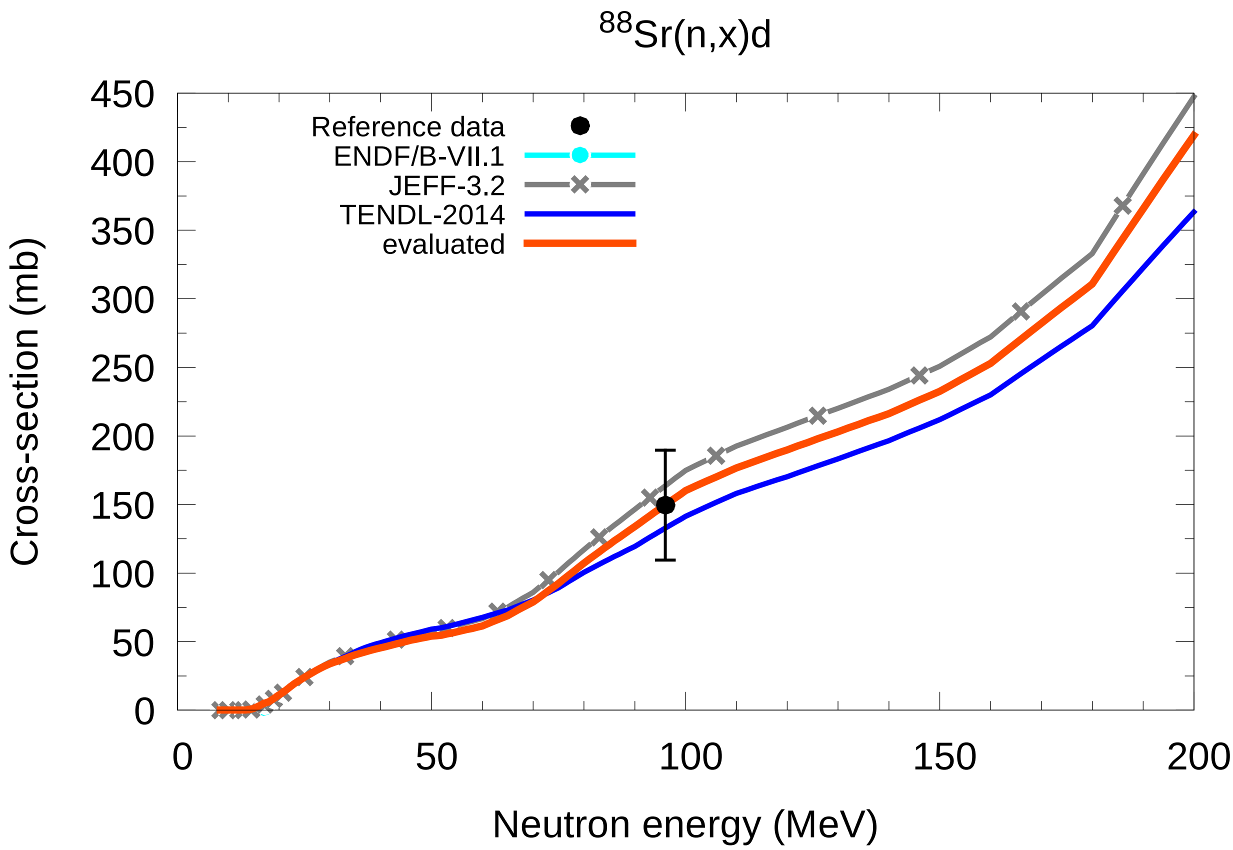
^{84}Sr(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



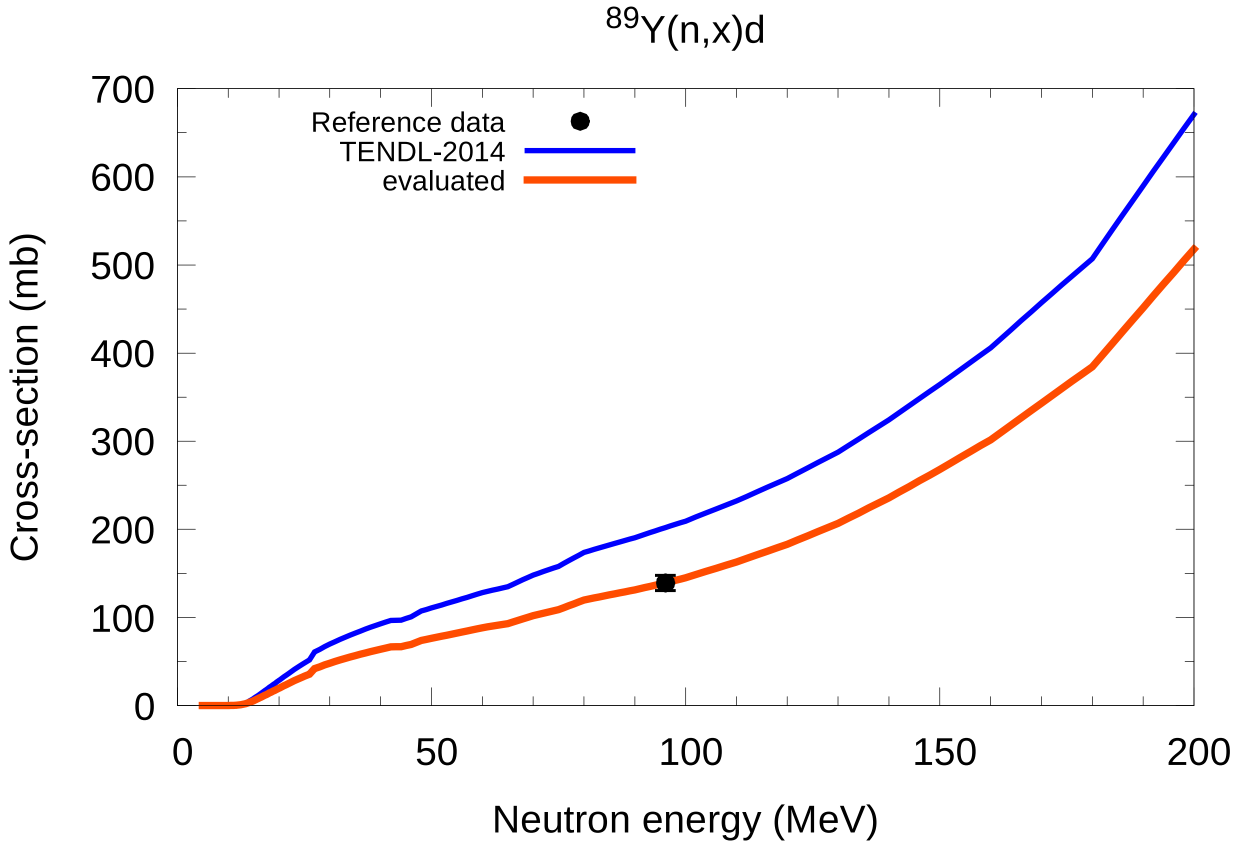
^{86}Sr(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



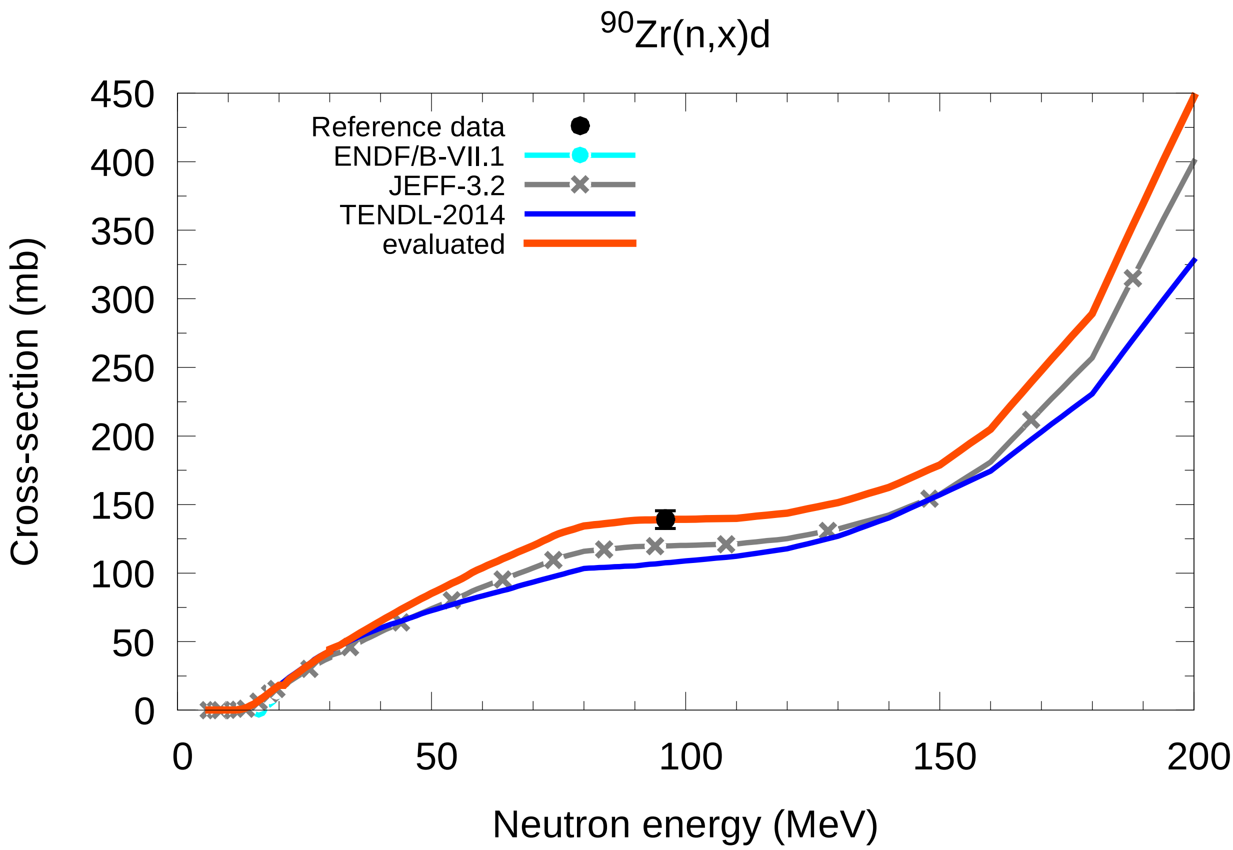
87Sr(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



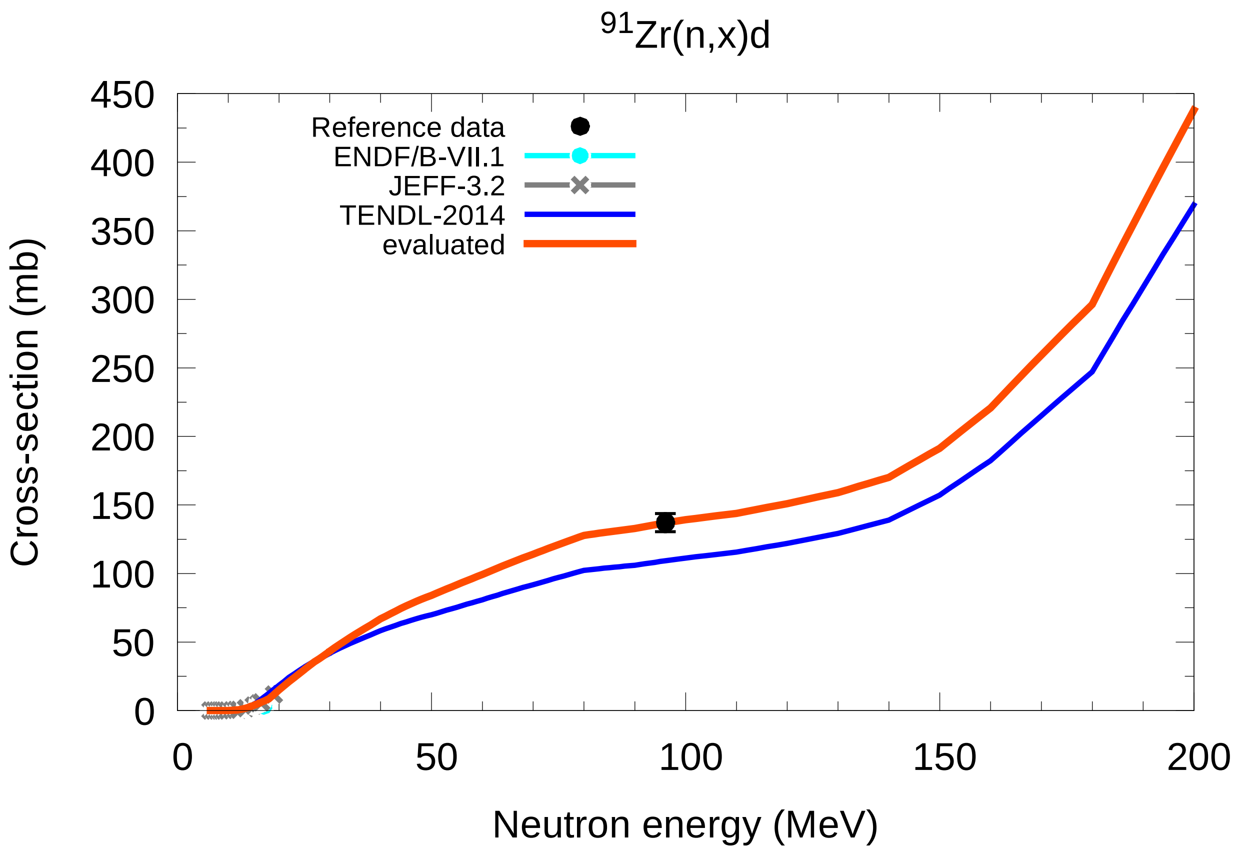
88Sr(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



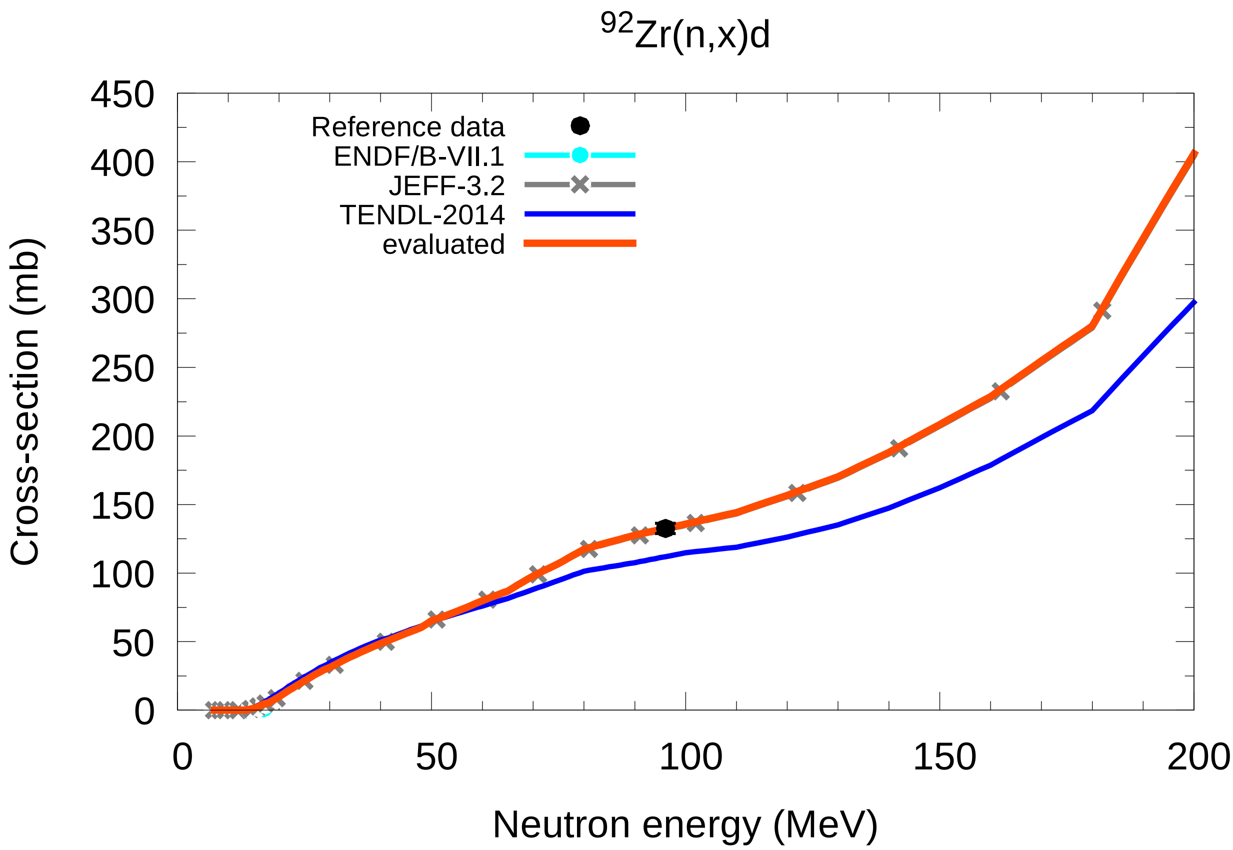
^{89}Y(n,x)d
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200



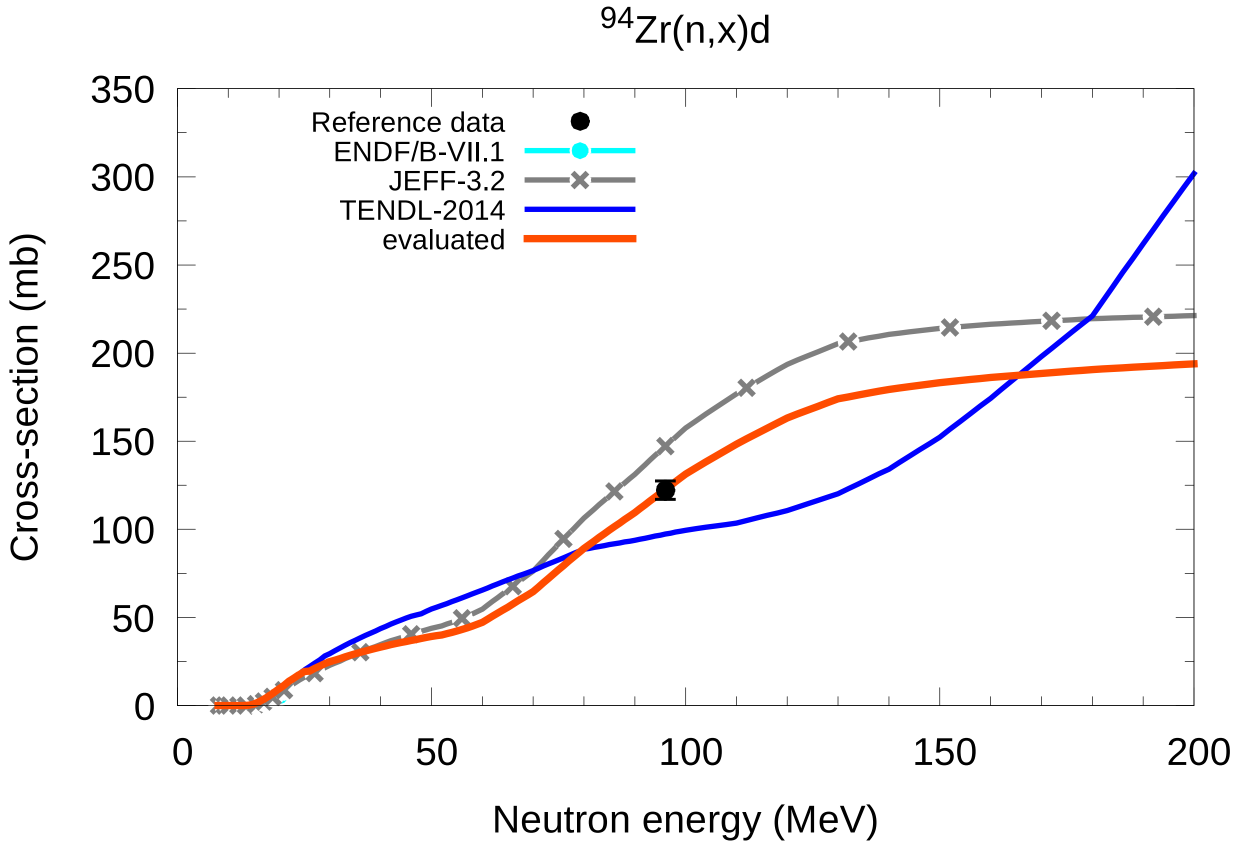
^{90}Zr(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
0
50
100
150
200



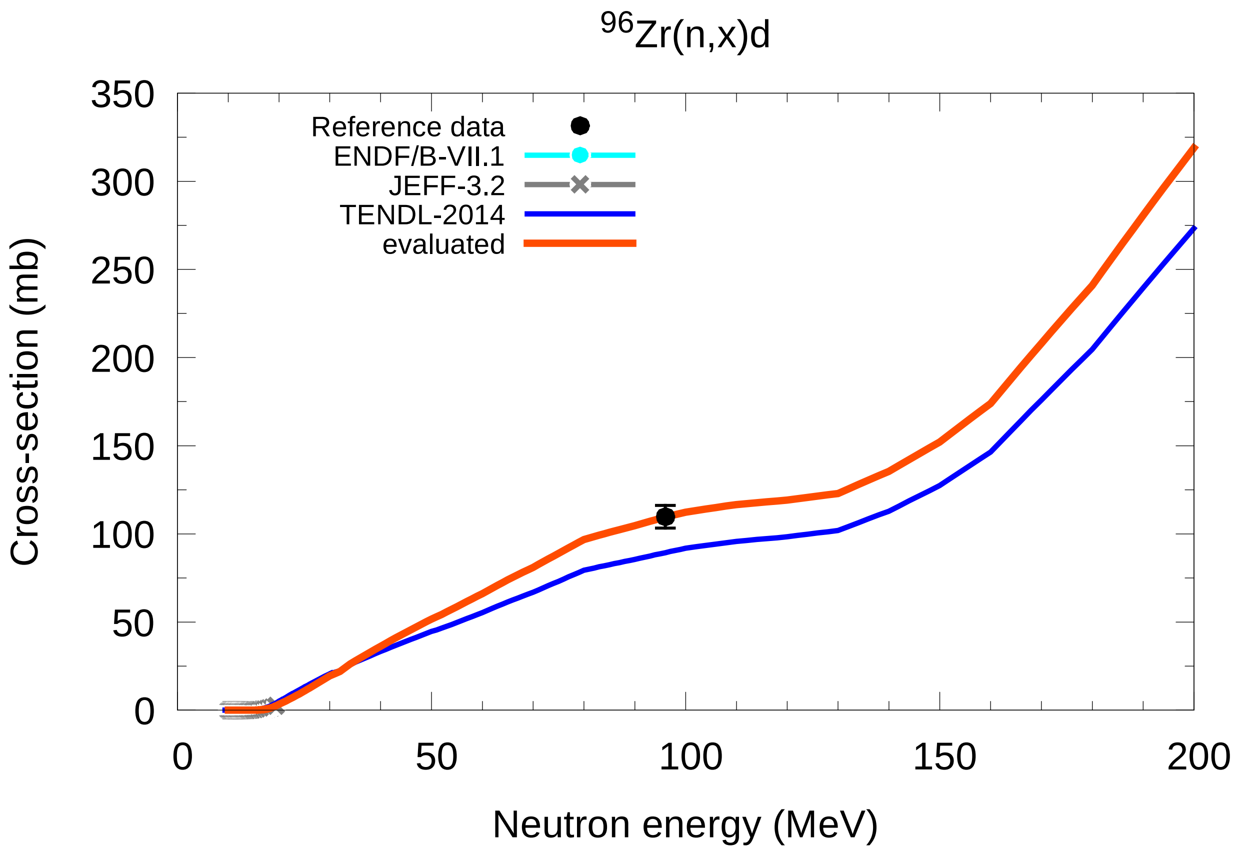
^{91}Zr(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



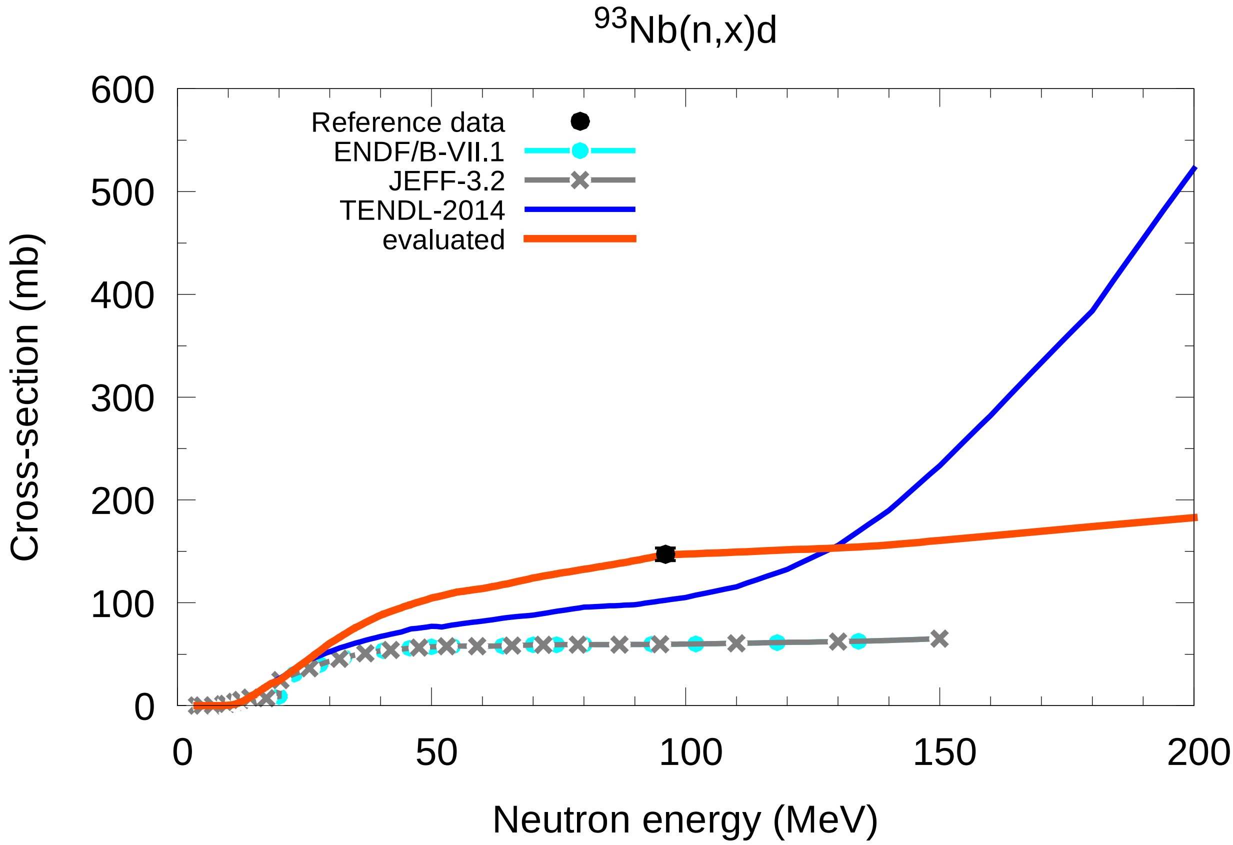
^{92}Zr(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



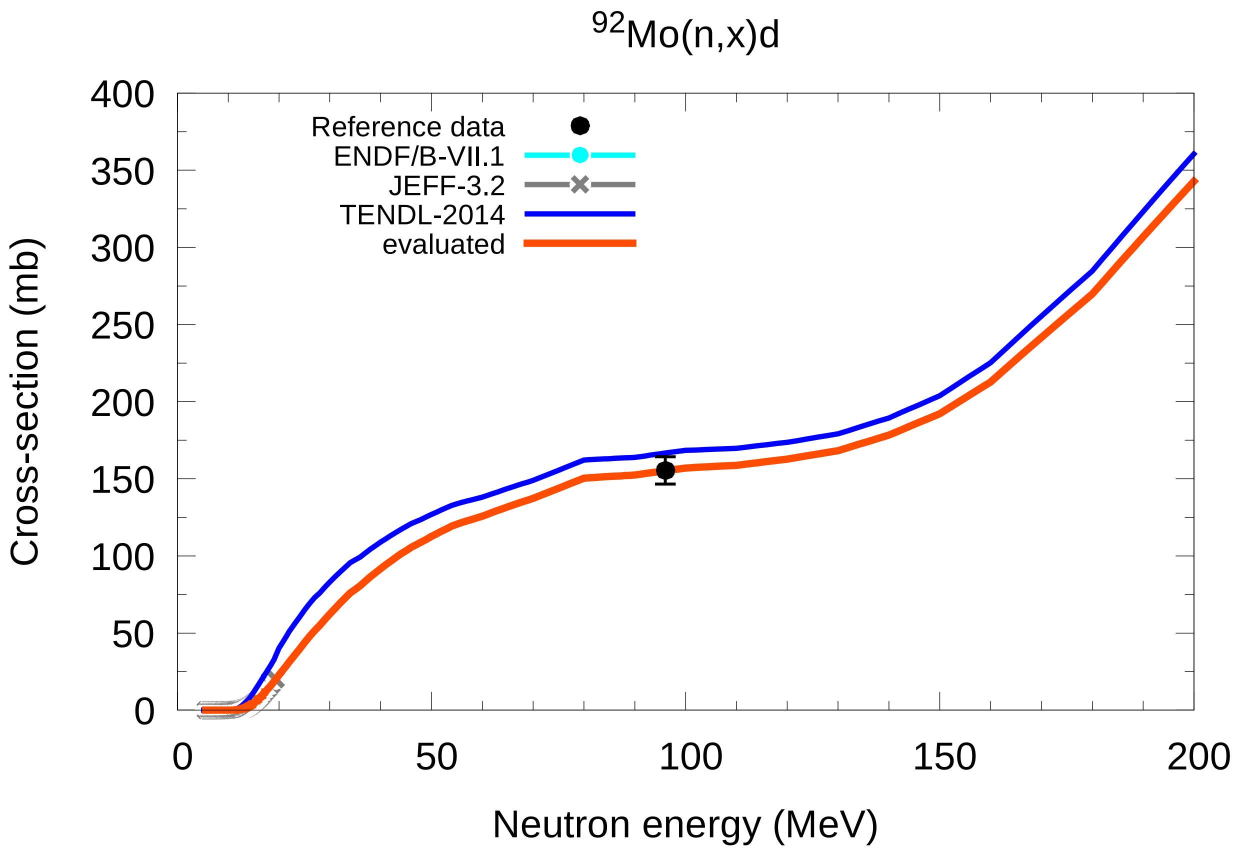
^{94}Zr(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



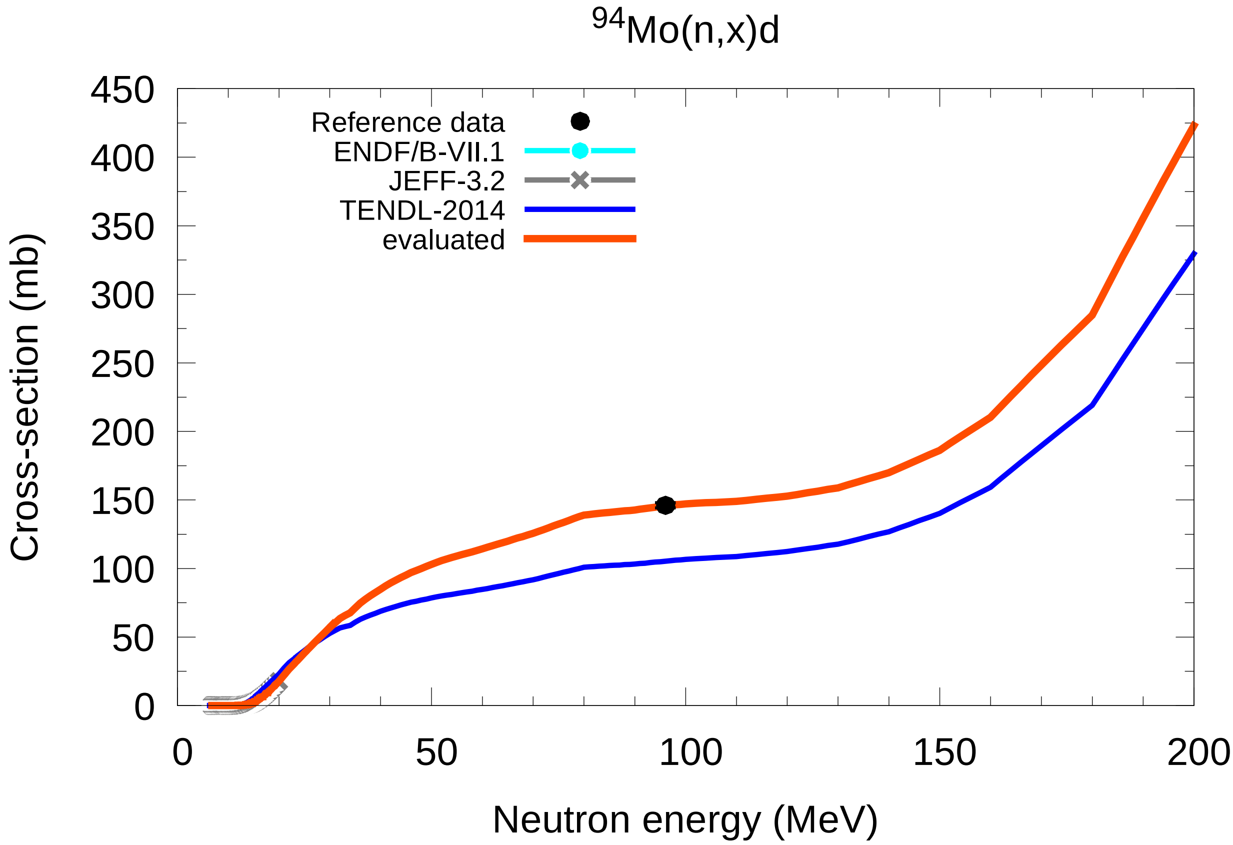
^{96}Zr(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



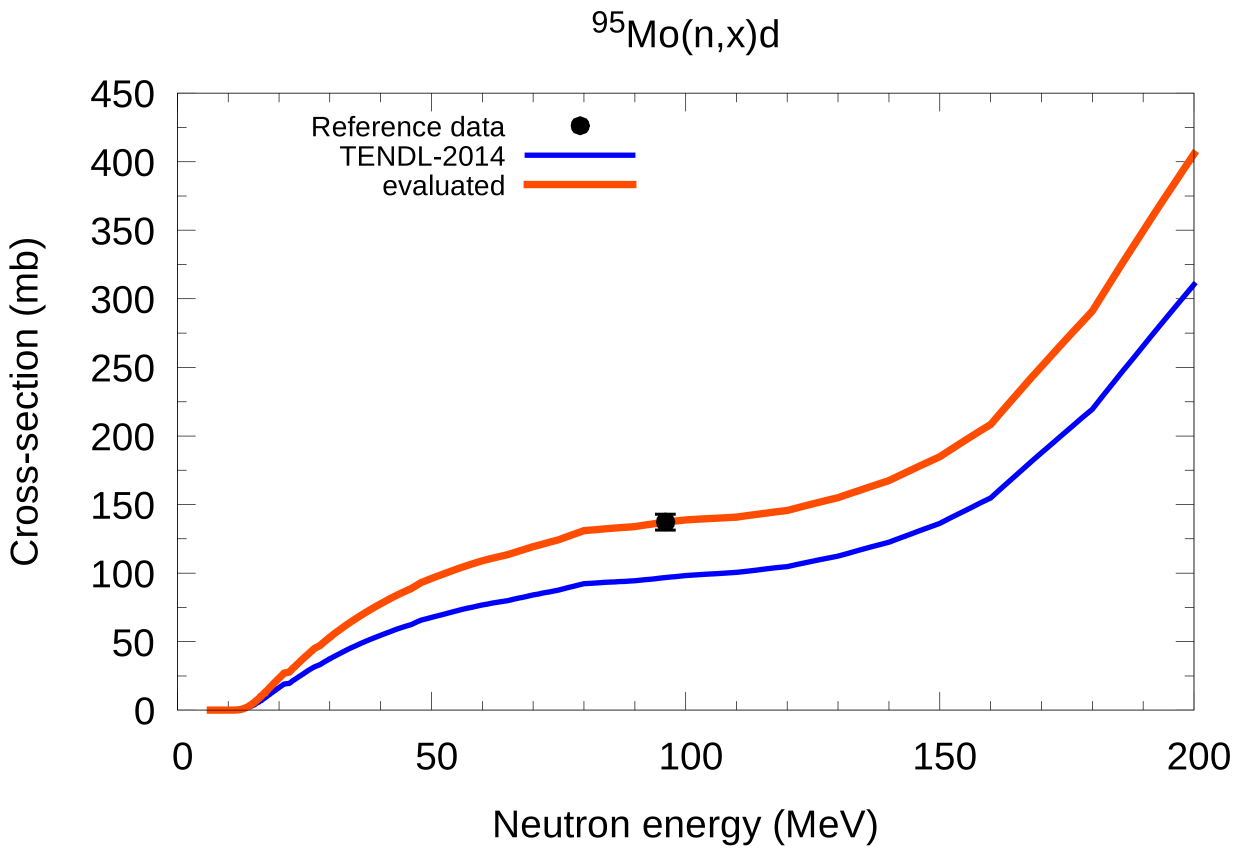
^{93}Nb(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



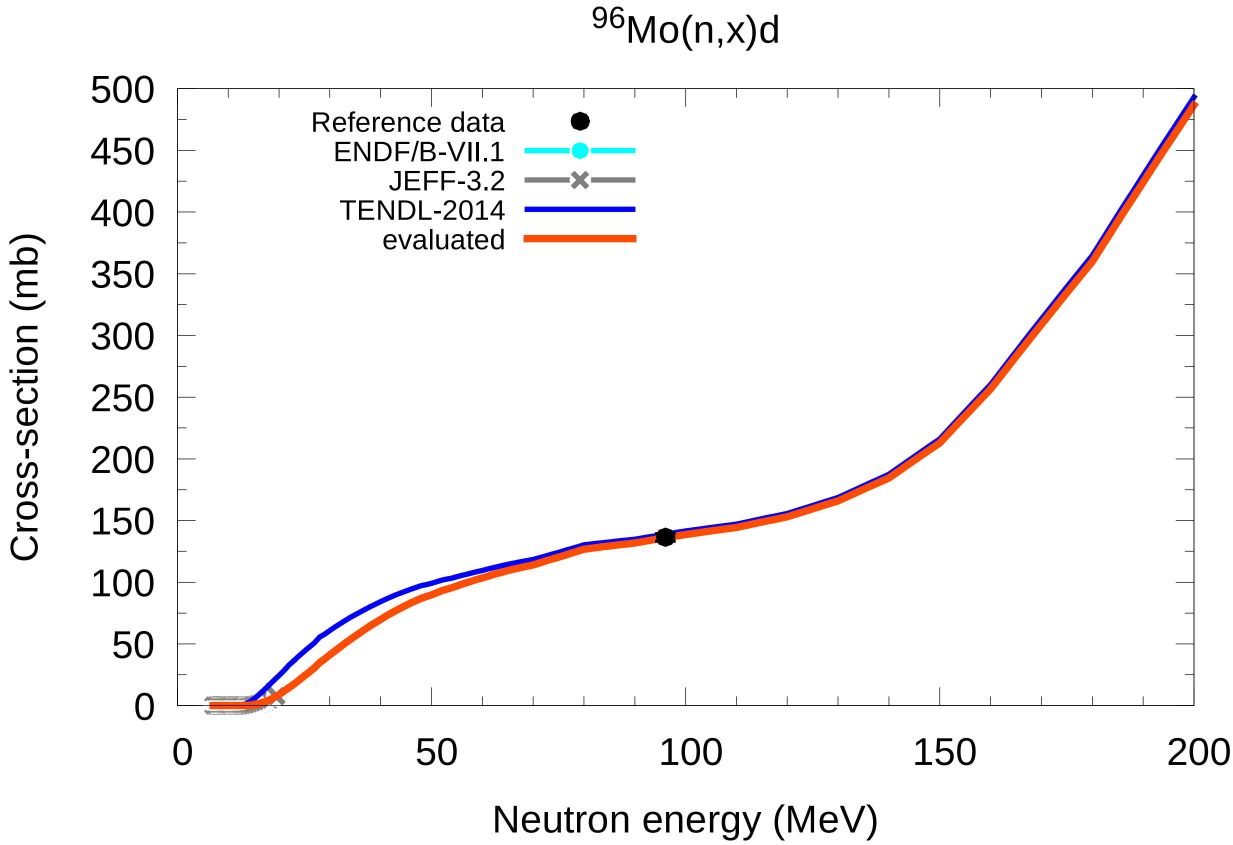
^{92}Mo(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
0
50
100
150
200



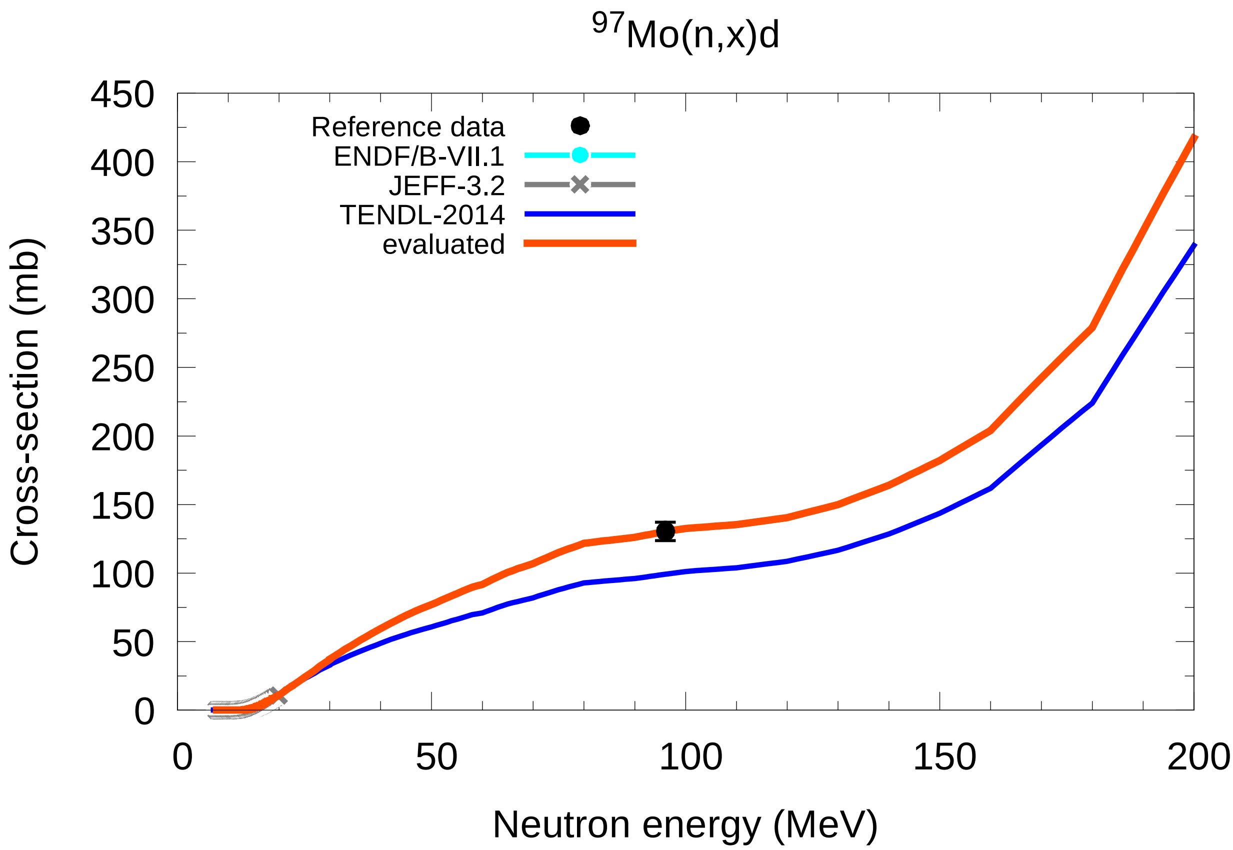
^{94}Mo(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



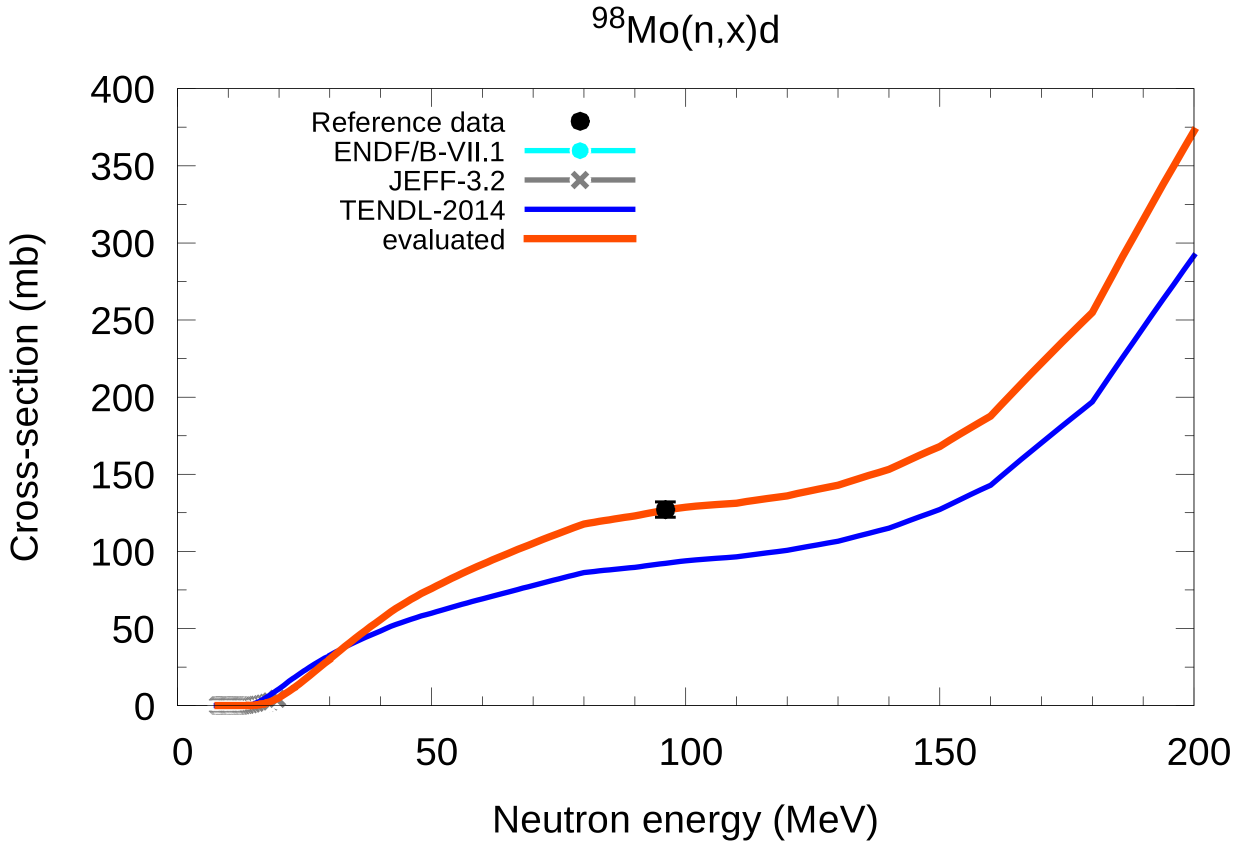
^{95}Mo(n,x)d
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450

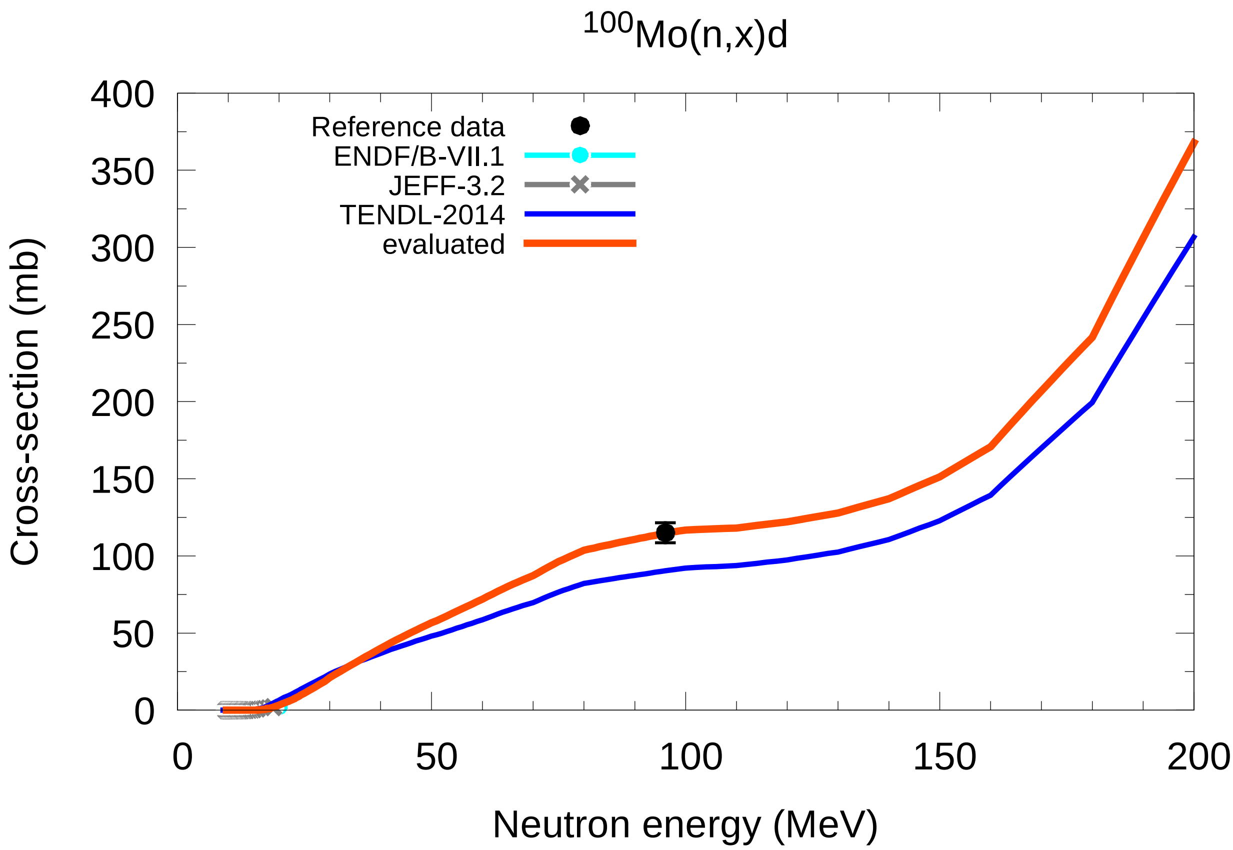


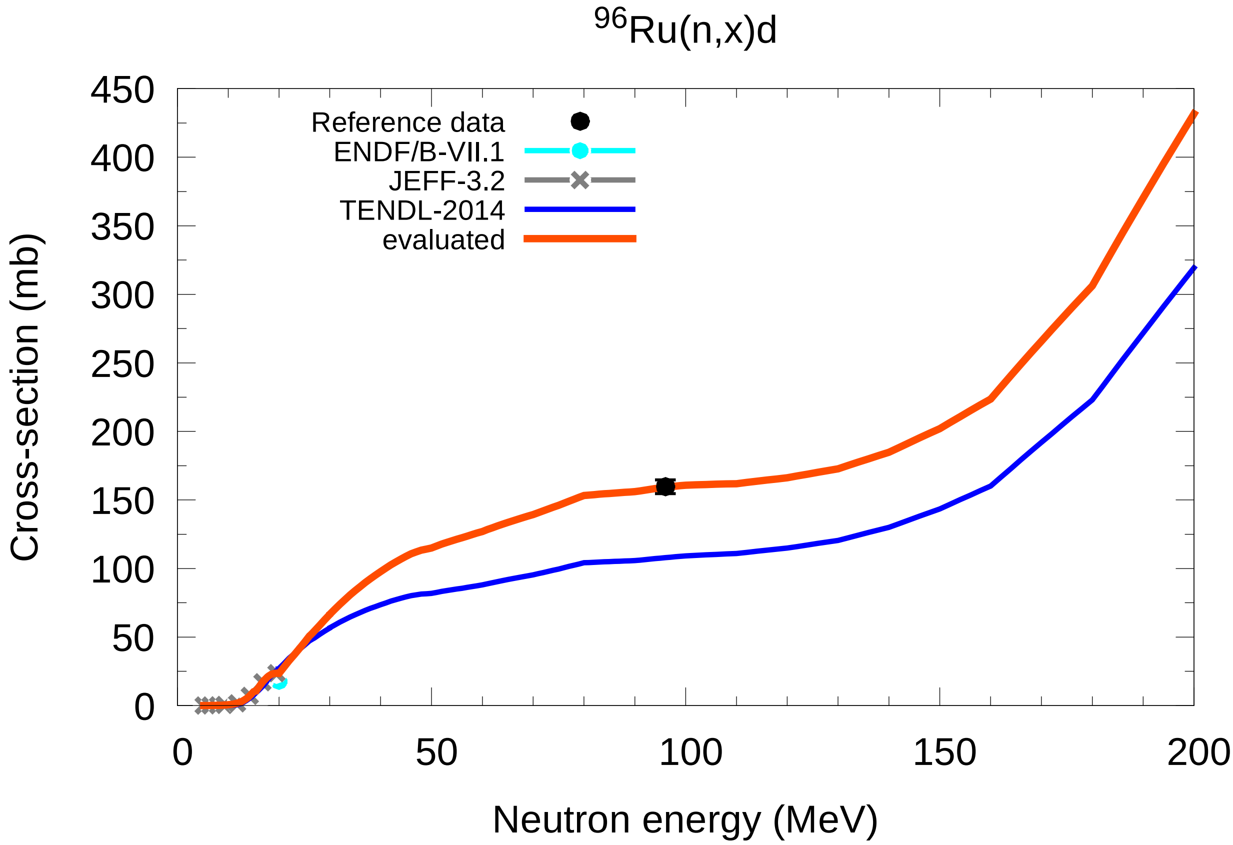
^{96}Mo(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



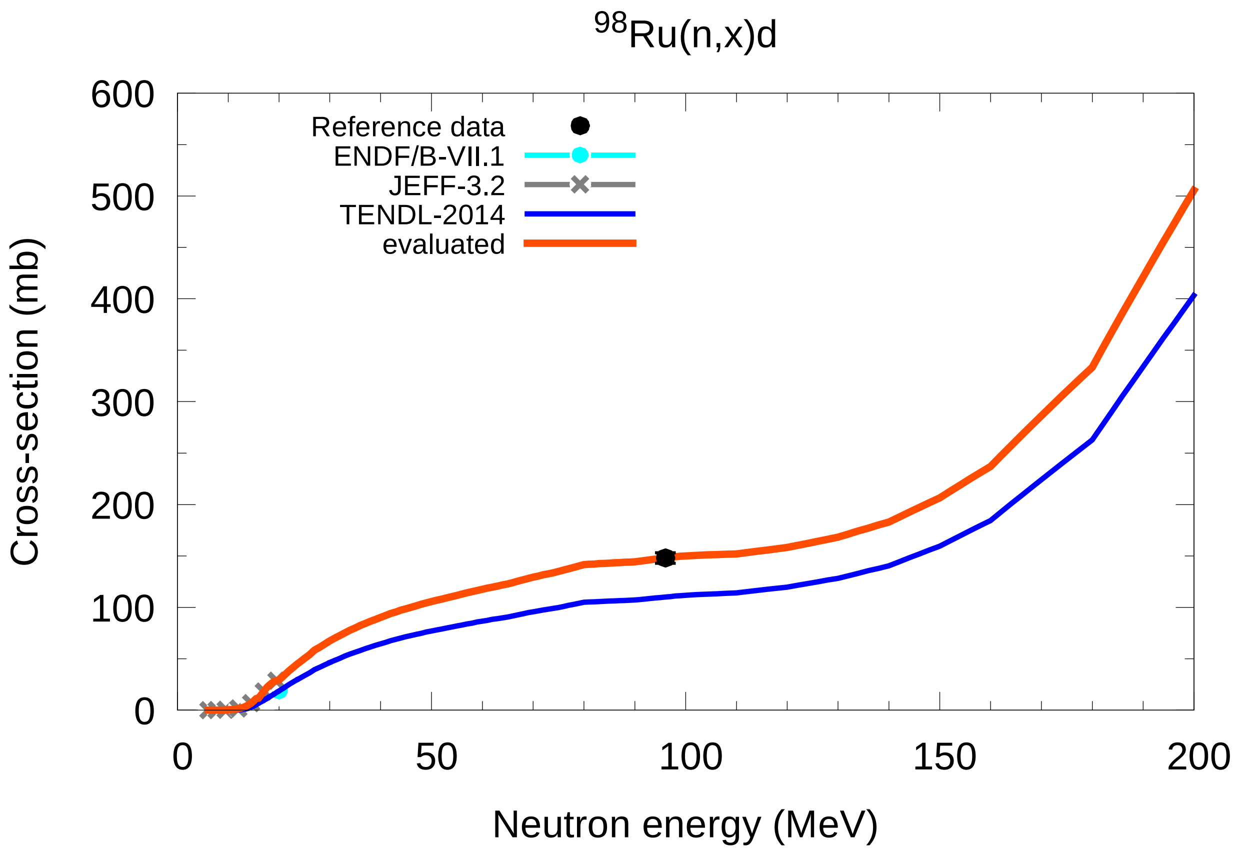
^{97}Mo(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450


98Mo(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400

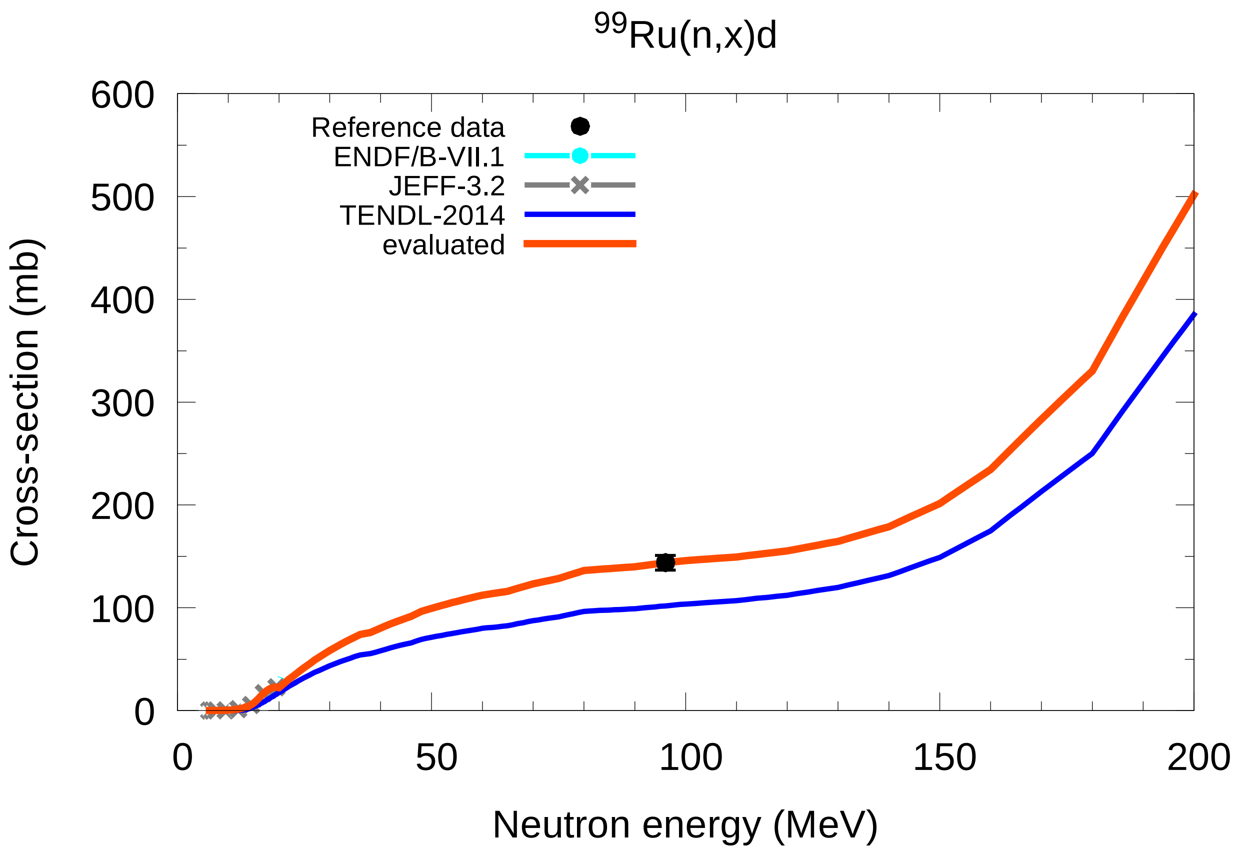

100Mo(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



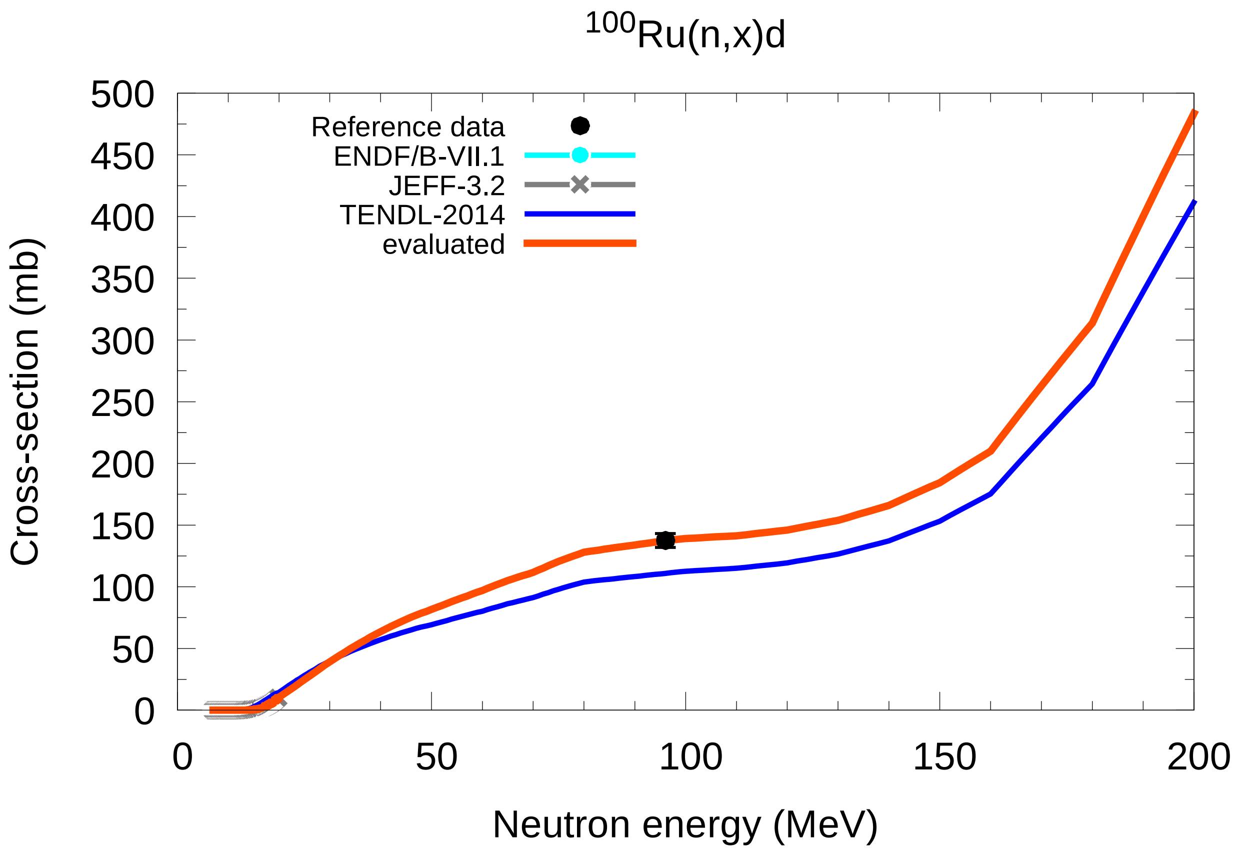
$^{96}Ru(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
0
50
100
150
200



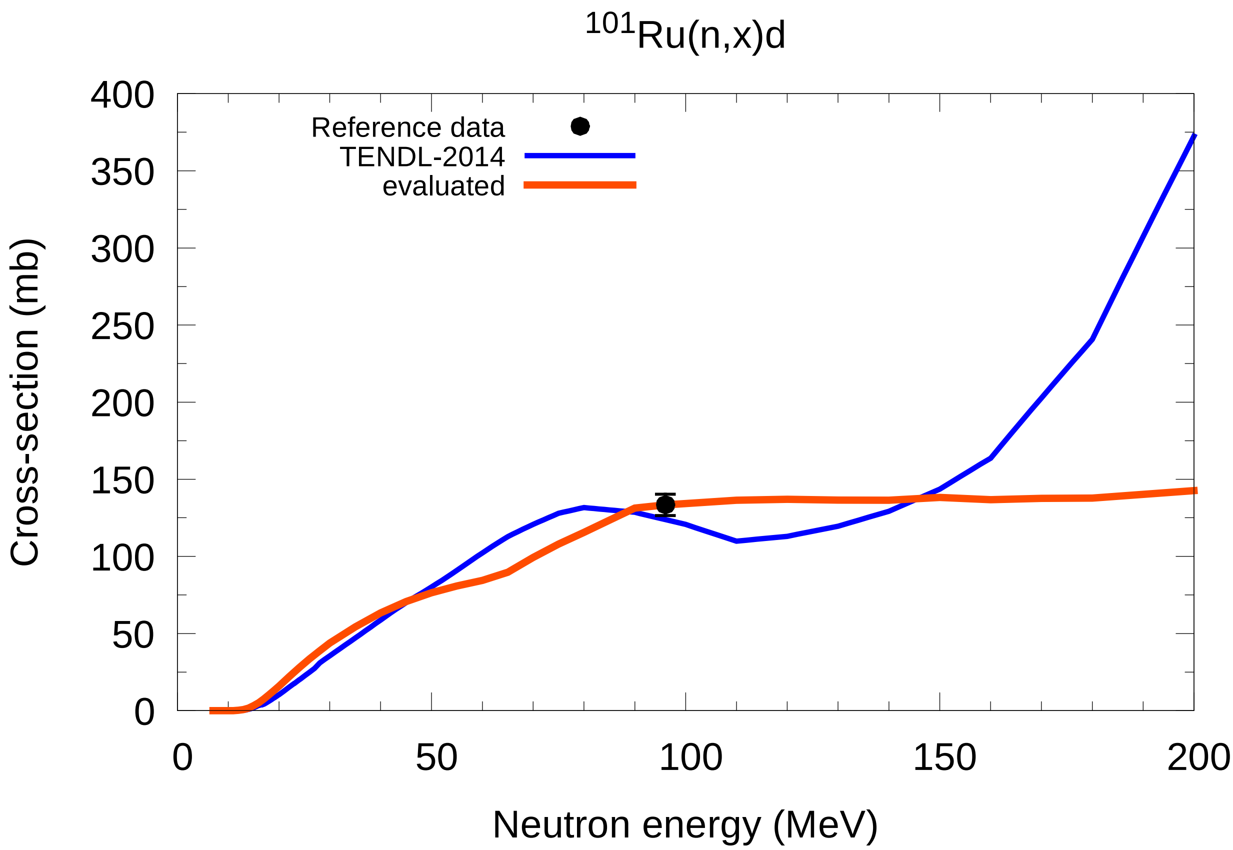
$^{98}Ru(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



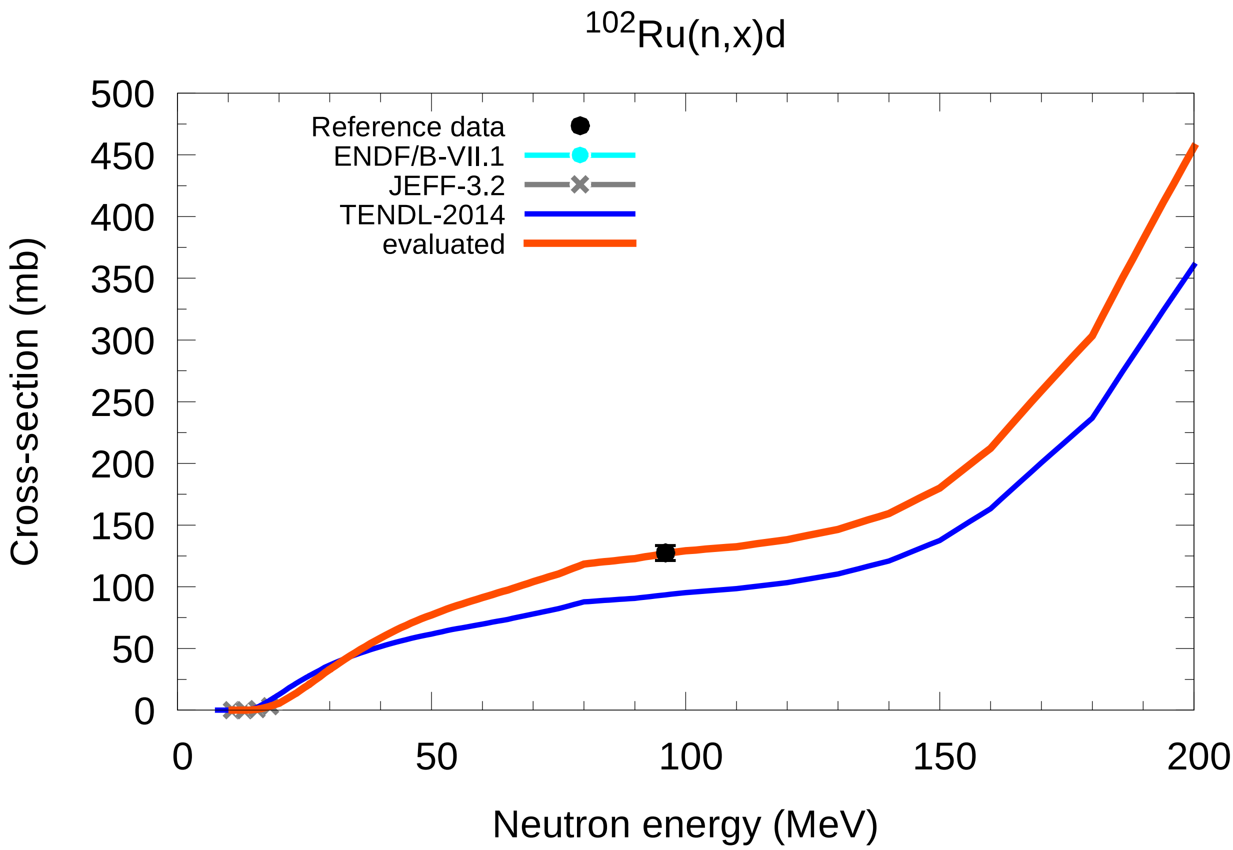
^{99}Ru(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



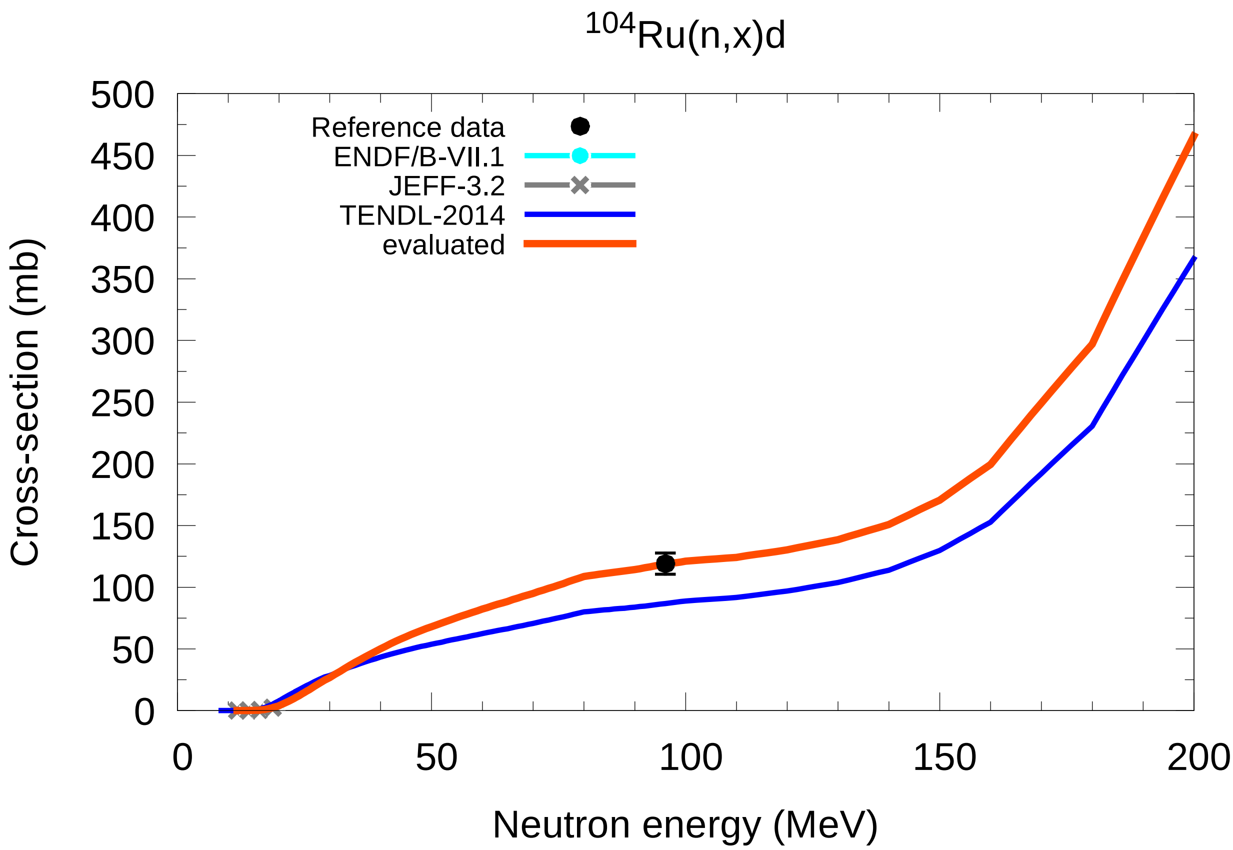
^{100}Ru(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500
0
50
100
150
200



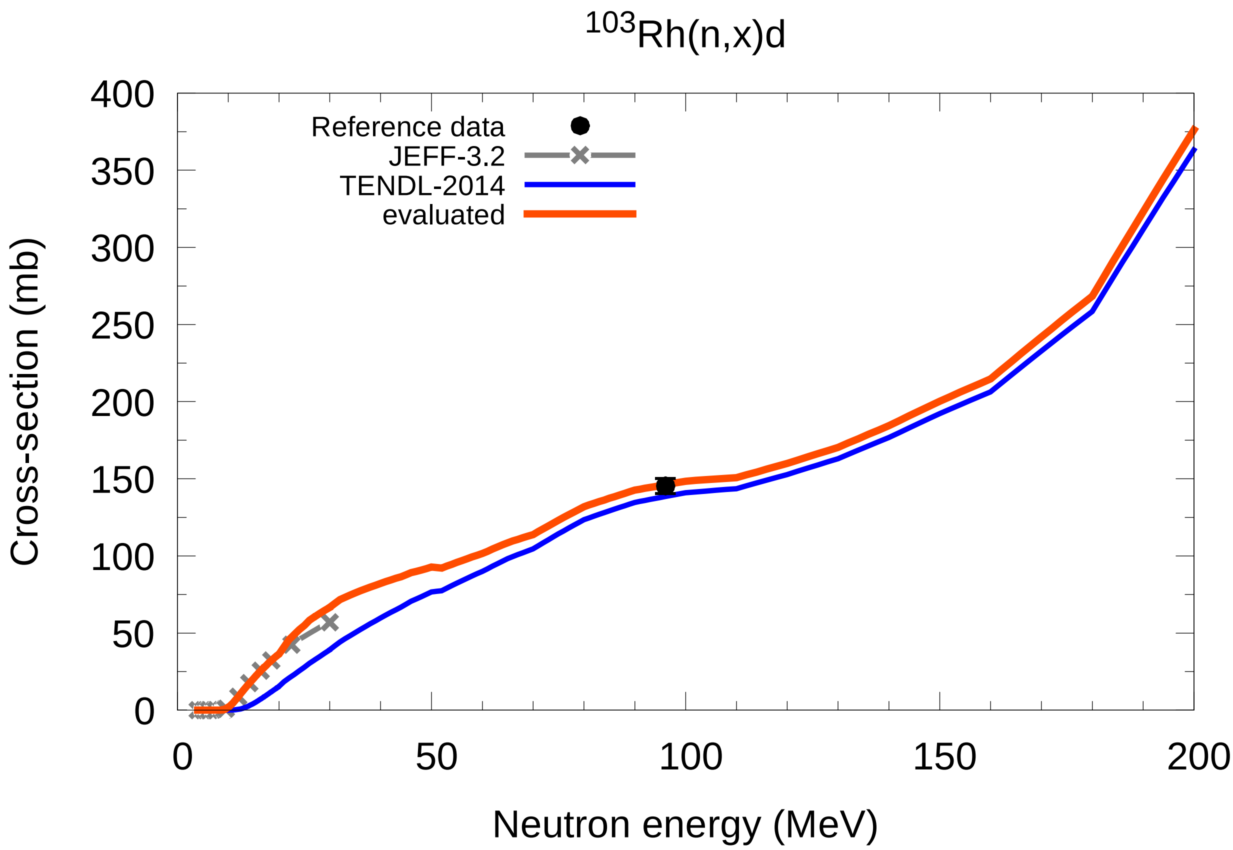
$^{101}Ru(n,x)d$
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



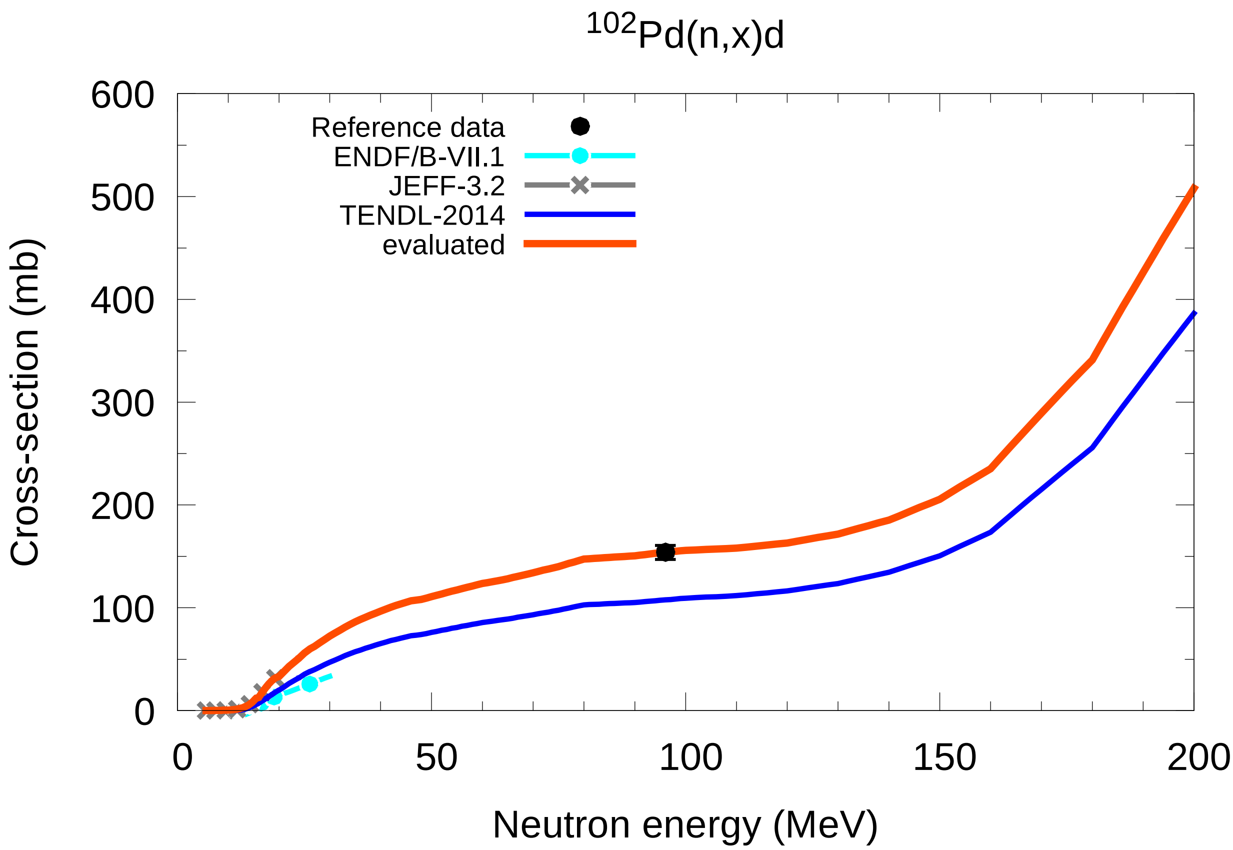
$^{102}Ru(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



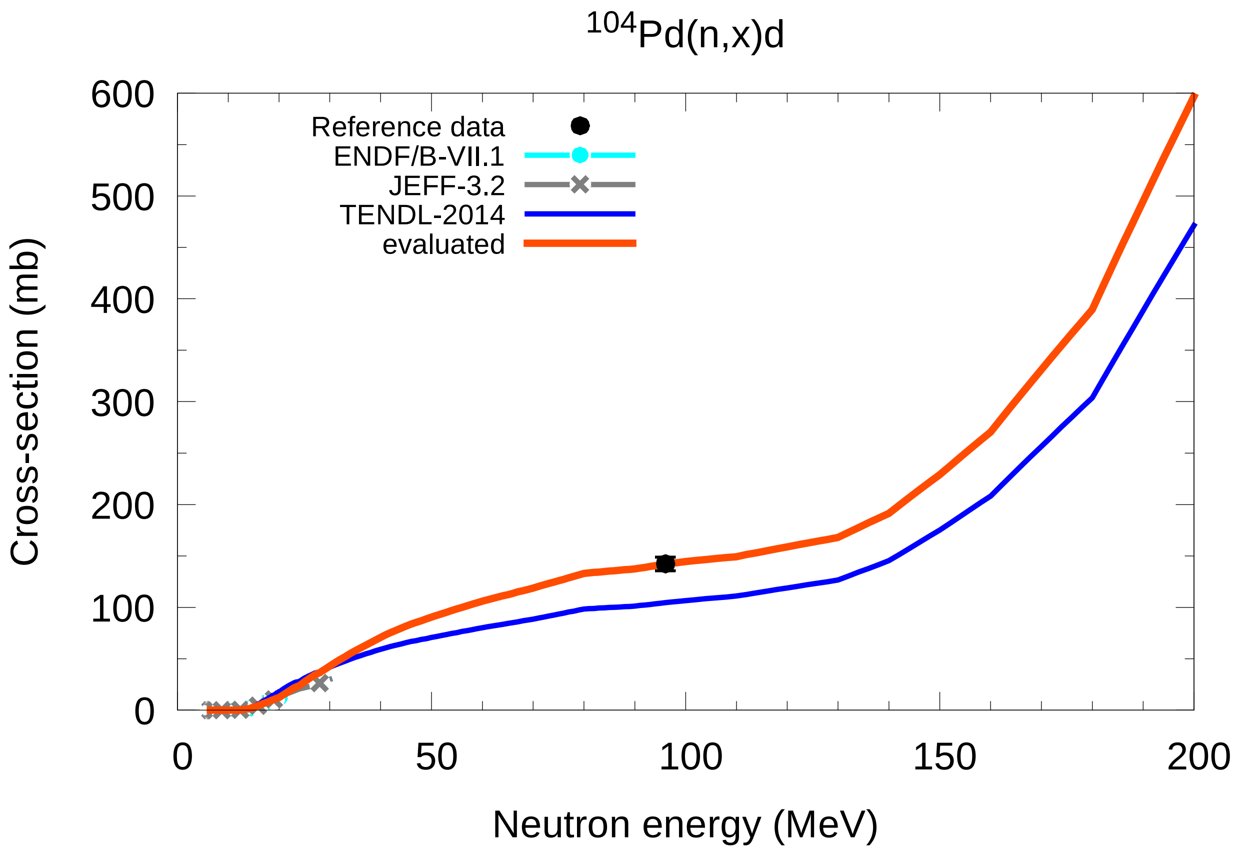
$^{104}Ru(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



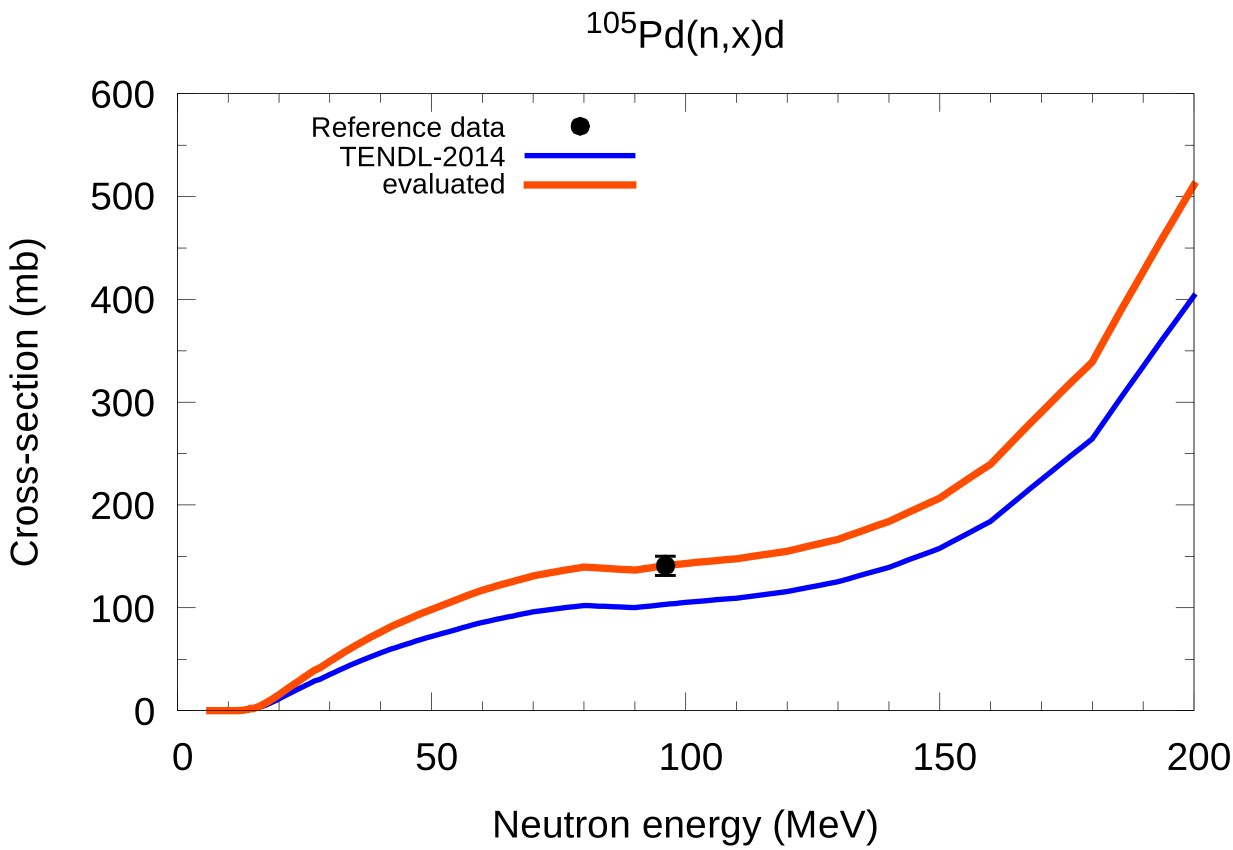
$^{103}Rh(n,x)d$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



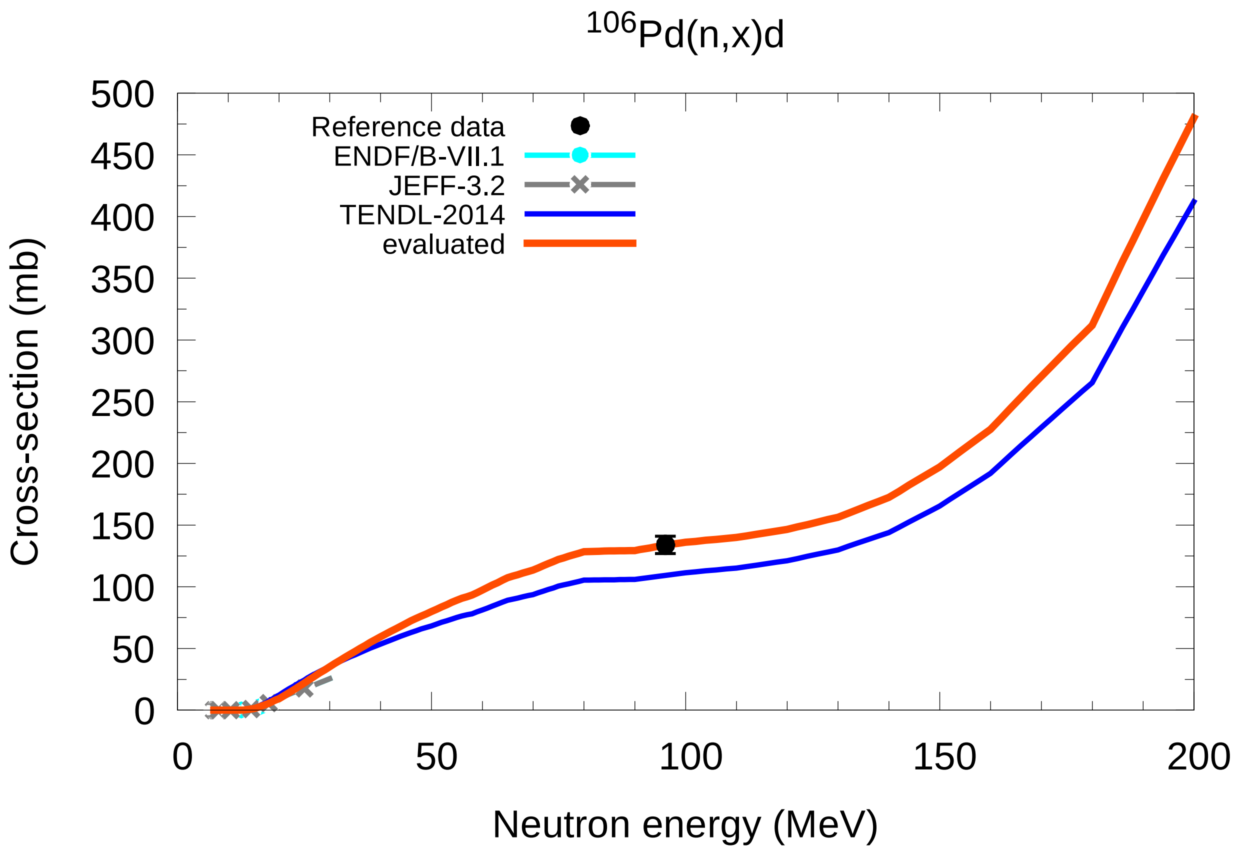
$^{102}Pd(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



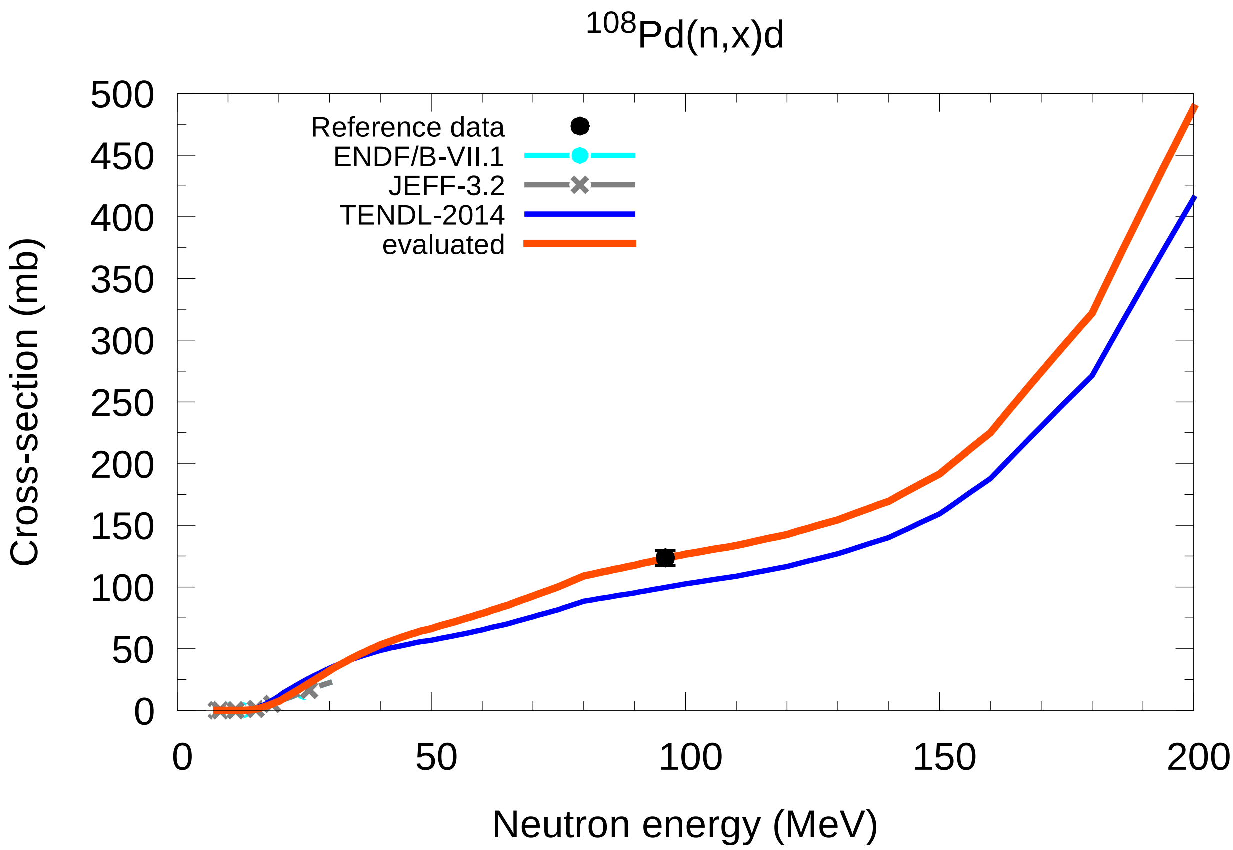
$^{104}Pd(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



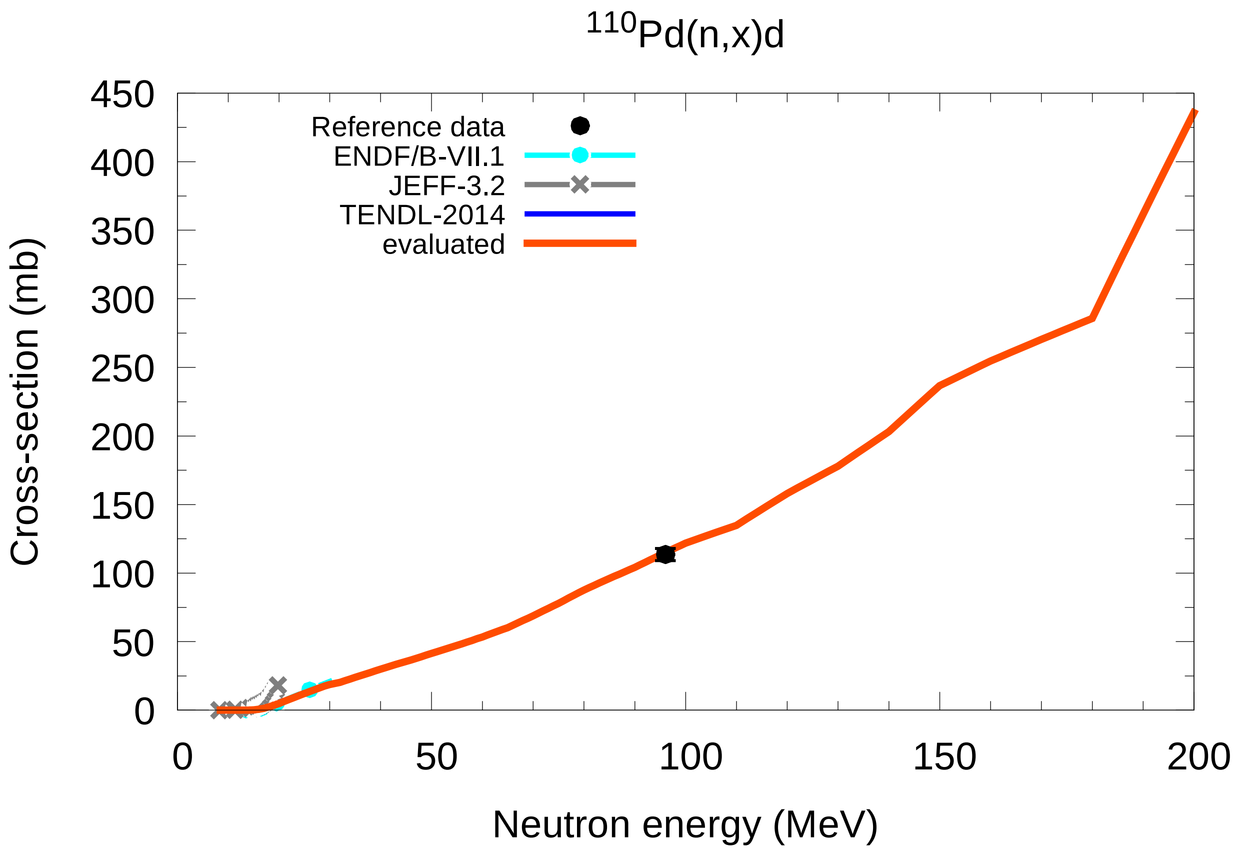
$^{105}Pd(n,x)d$
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
50
150



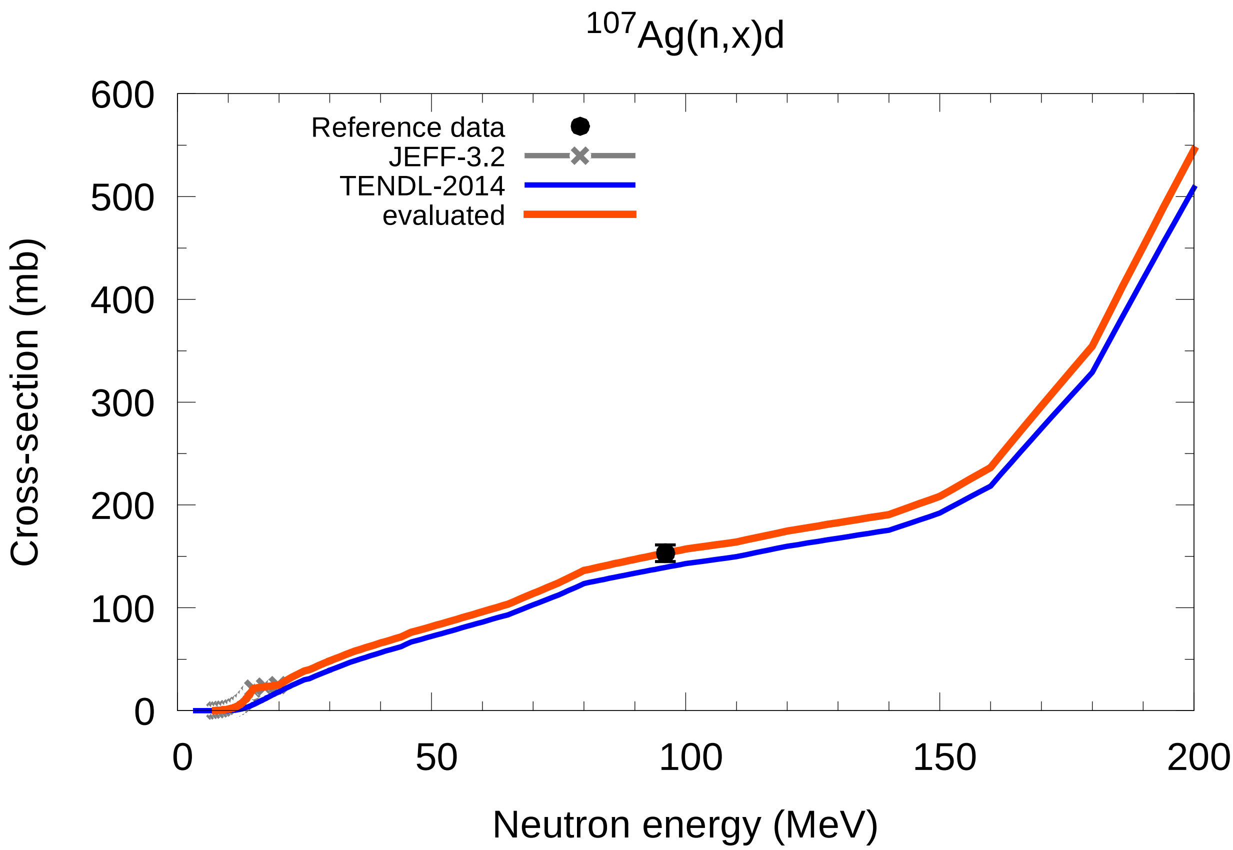
$^{106}Pd(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



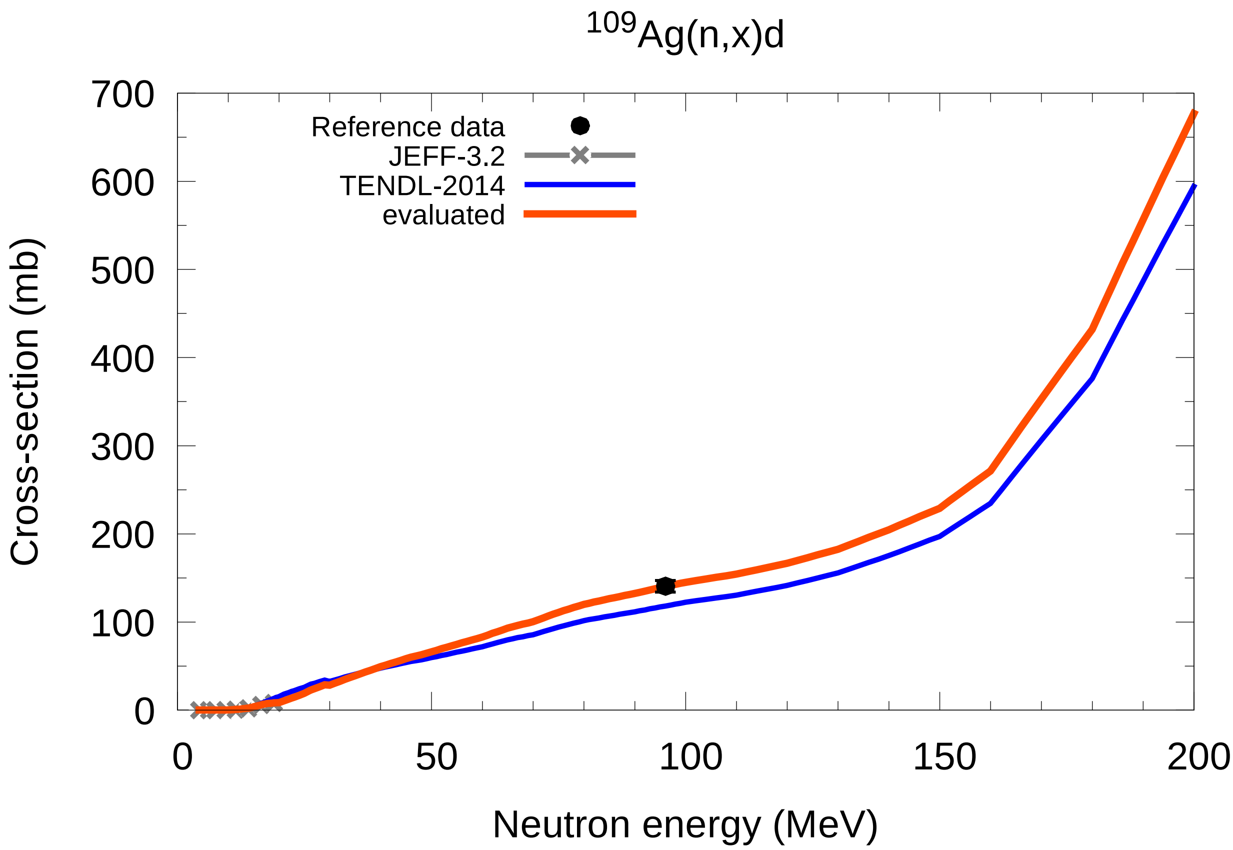
^{108}Pd(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



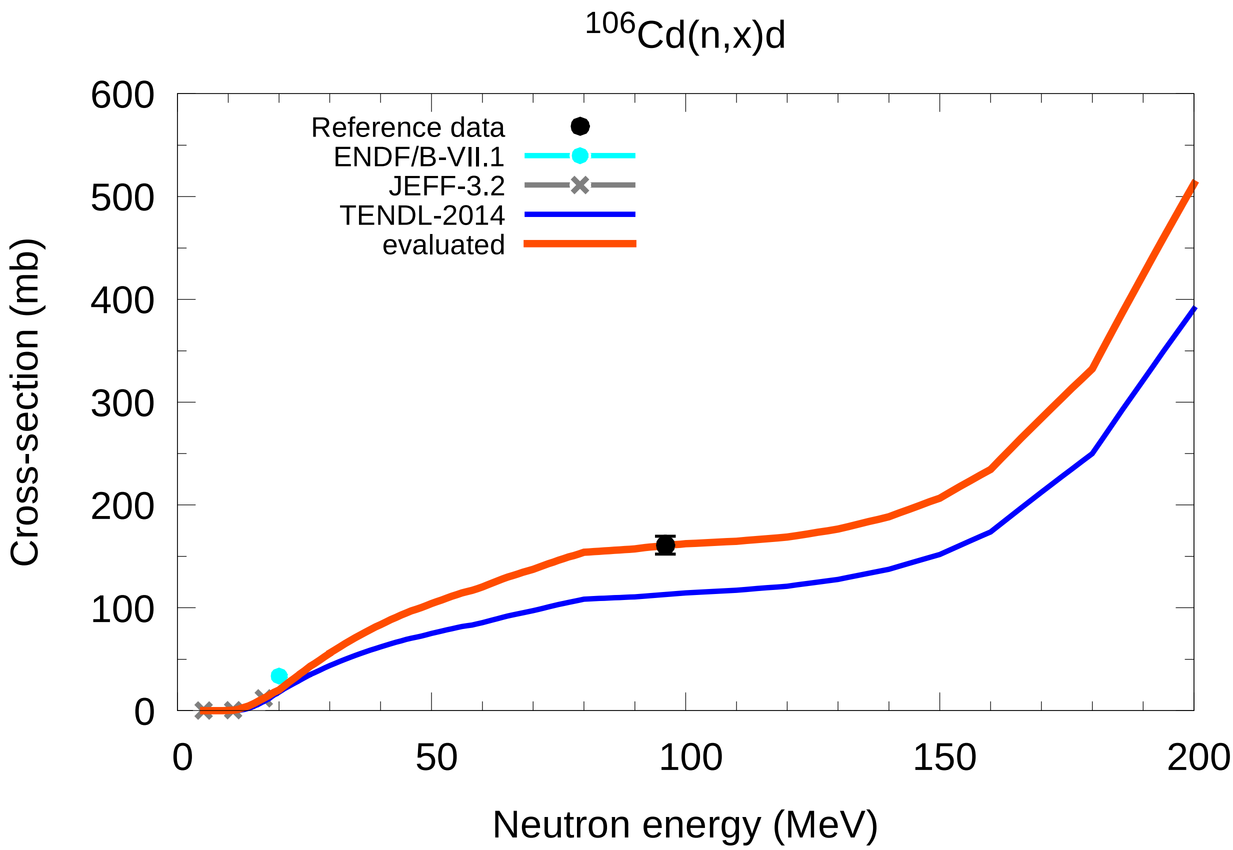
^{110}Pd(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



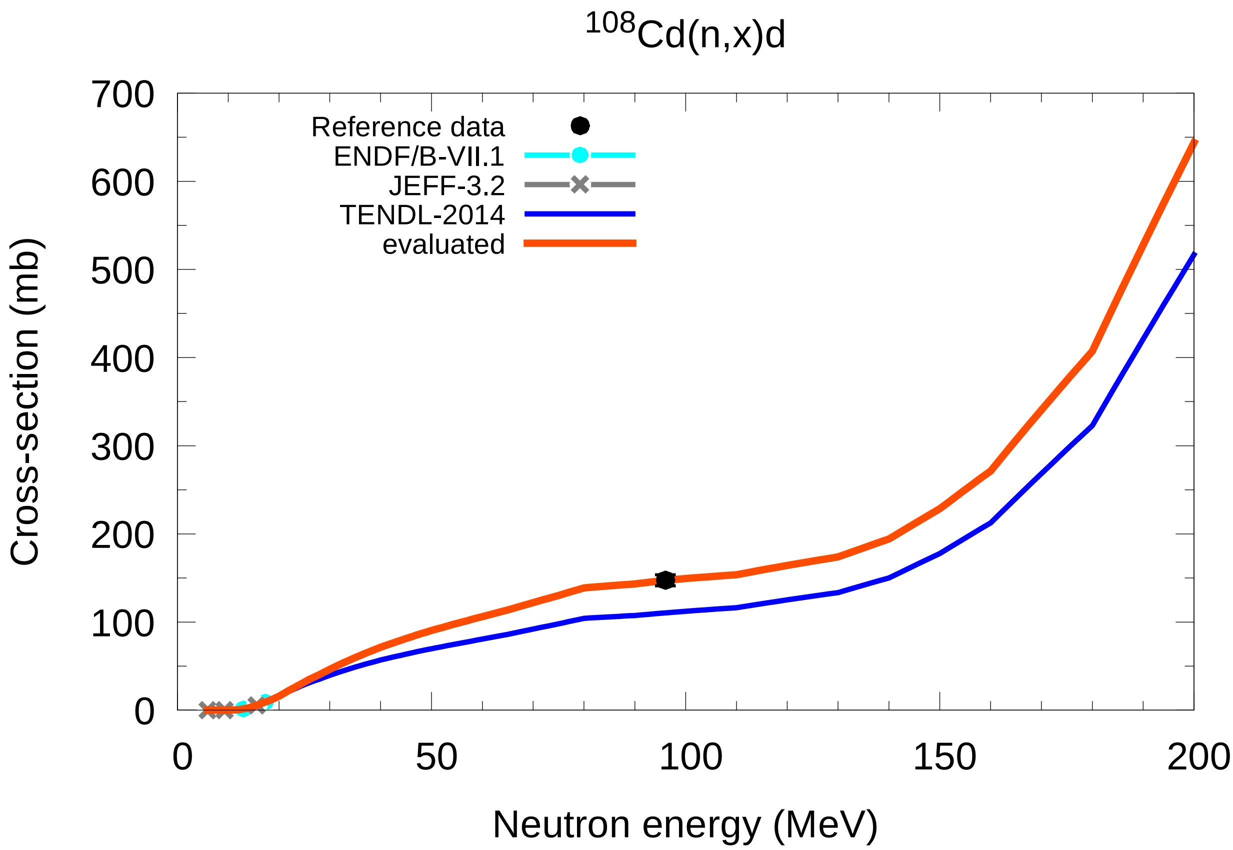
$^{107}Ag(n,x)d$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



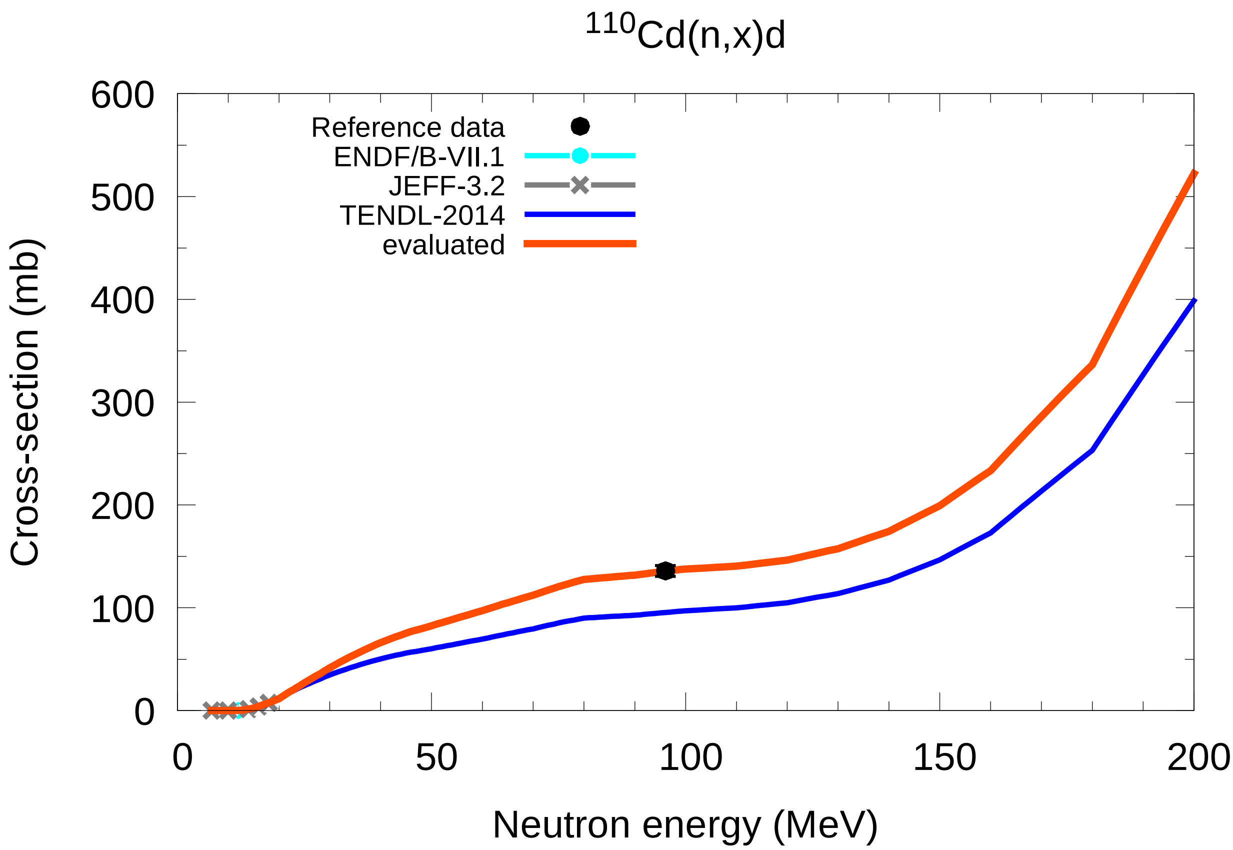
$^{109}Ag(n,x)d$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200



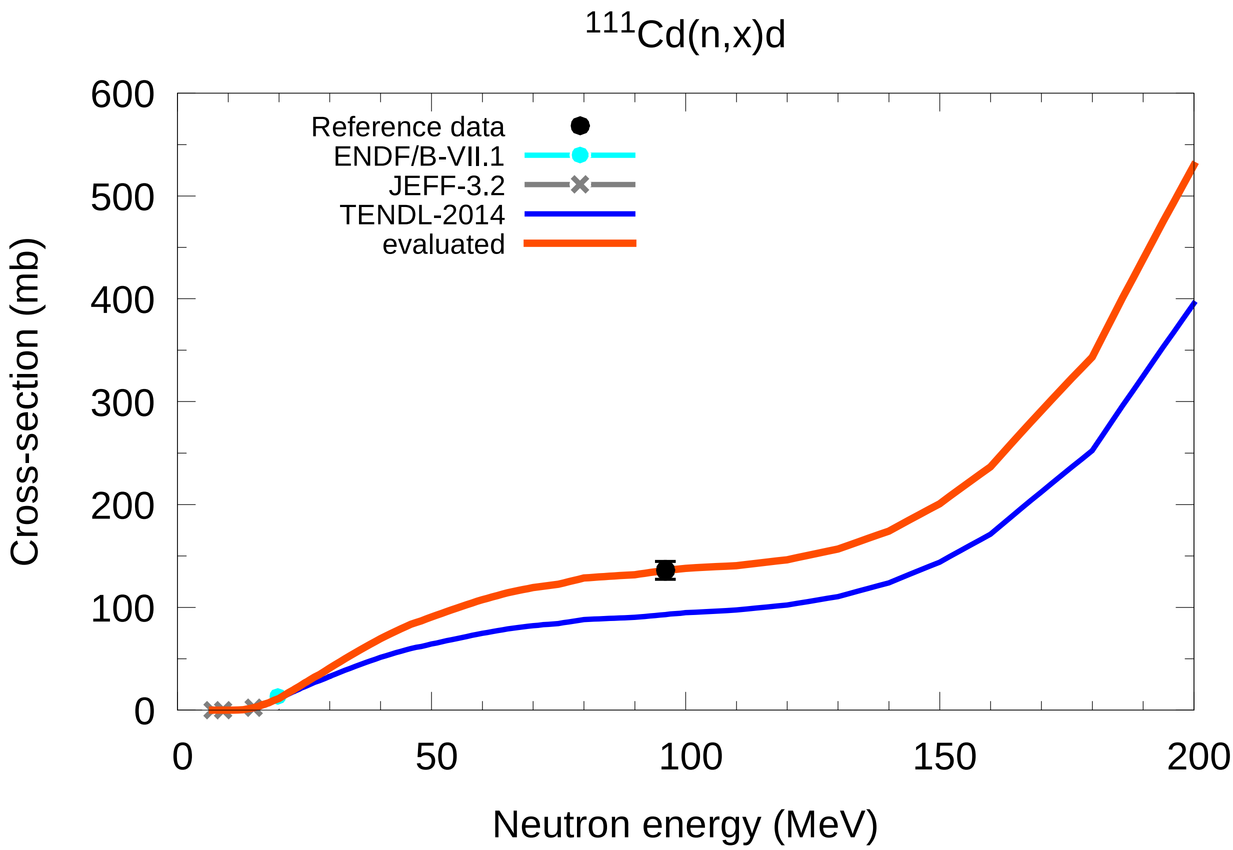
^{106}Cd(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



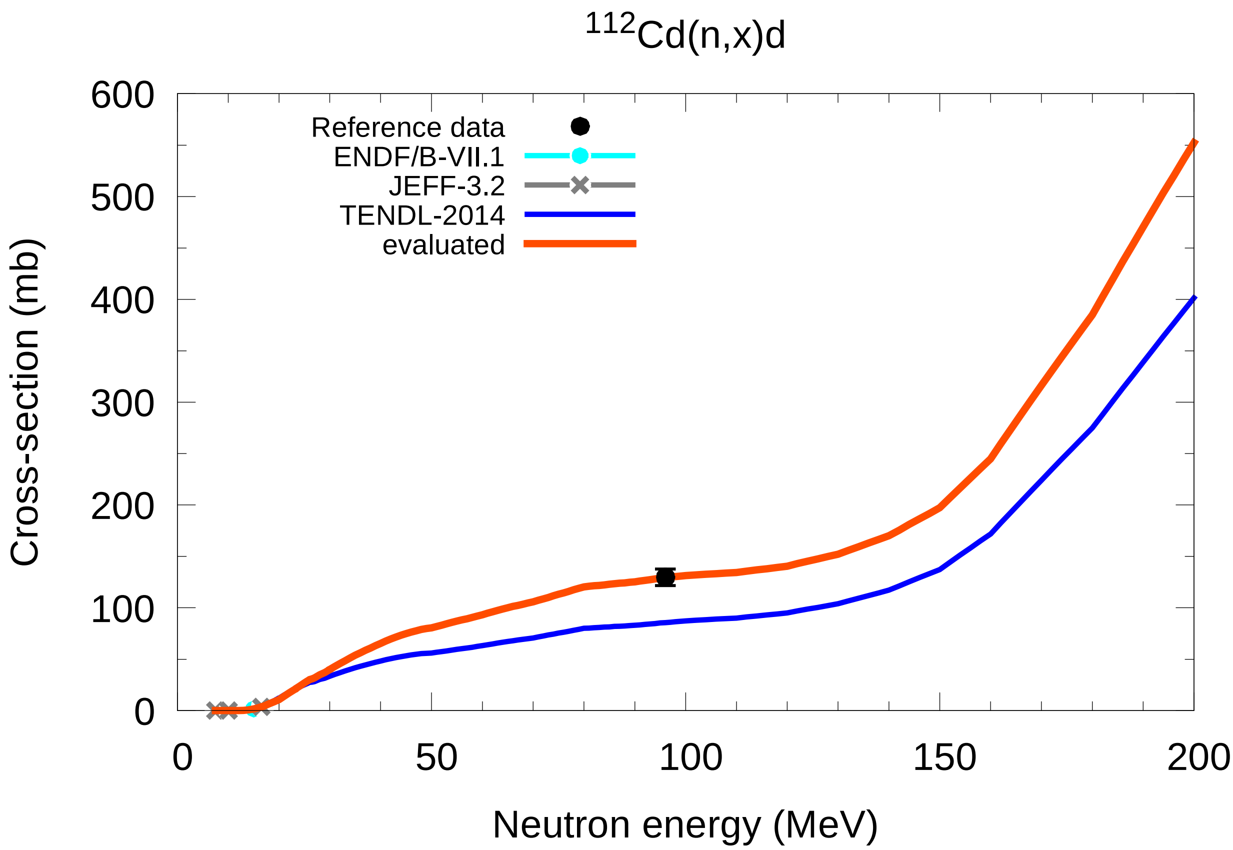
^{108}Cd(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200



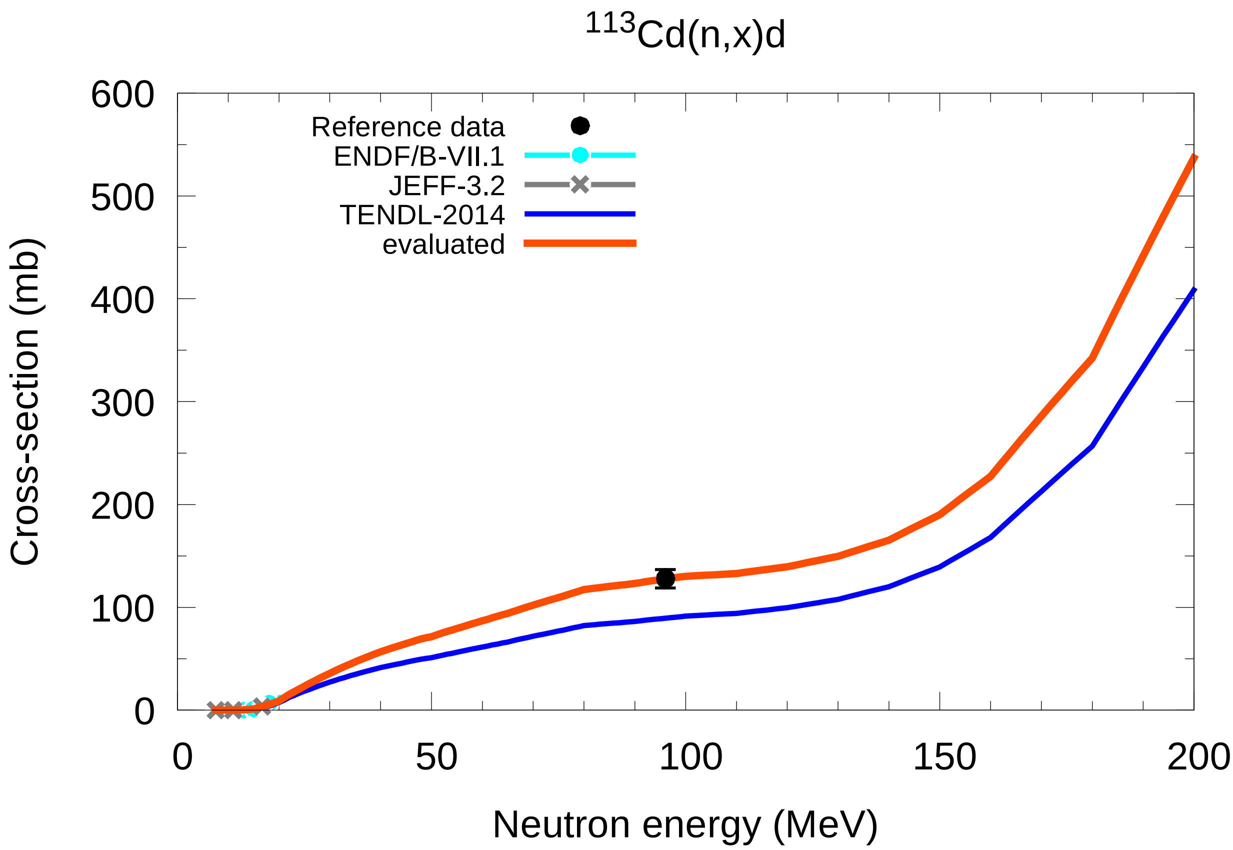
110Cd(n,x)d
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
600
500
400
300
200
100
0
0
50
100
150
200



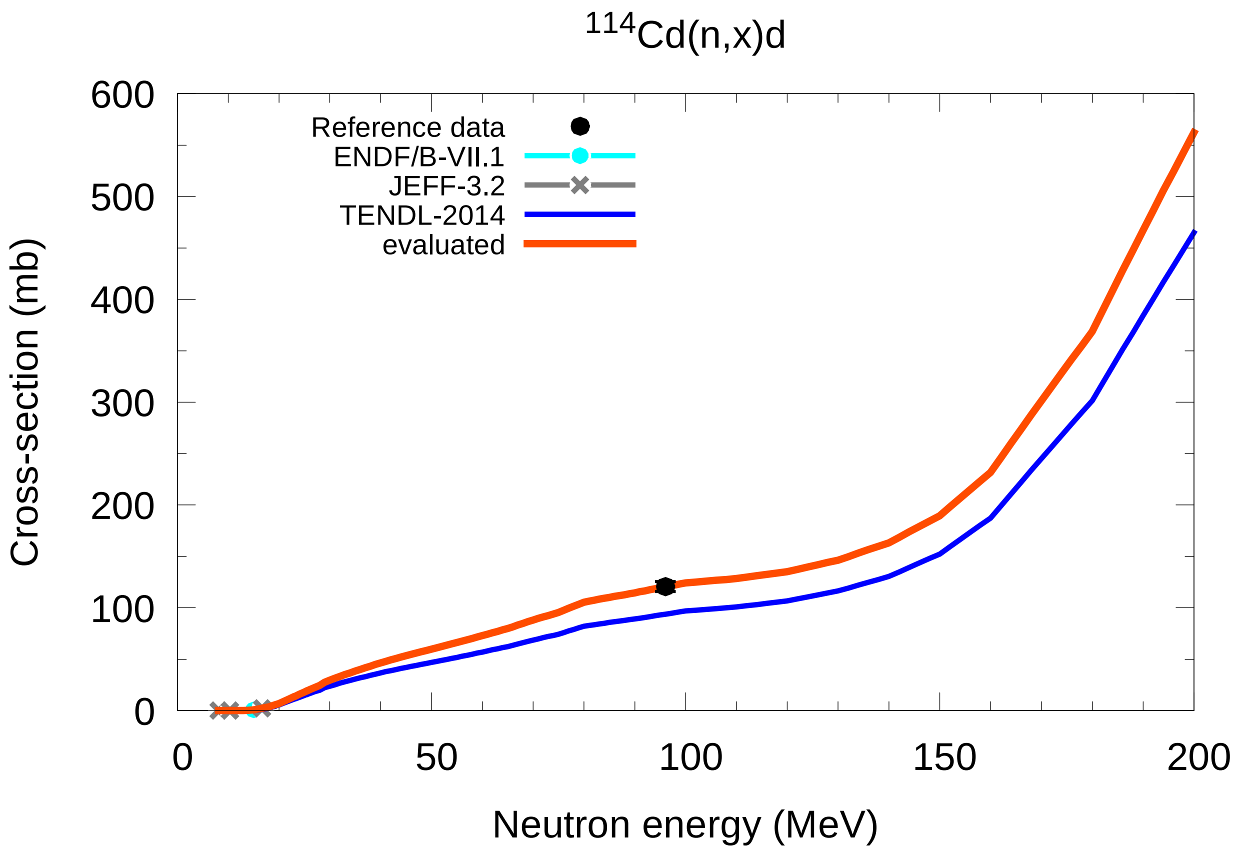
111Cd(n,x)d
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
600
500
400
300
200
100
0
0
50
100
150
200



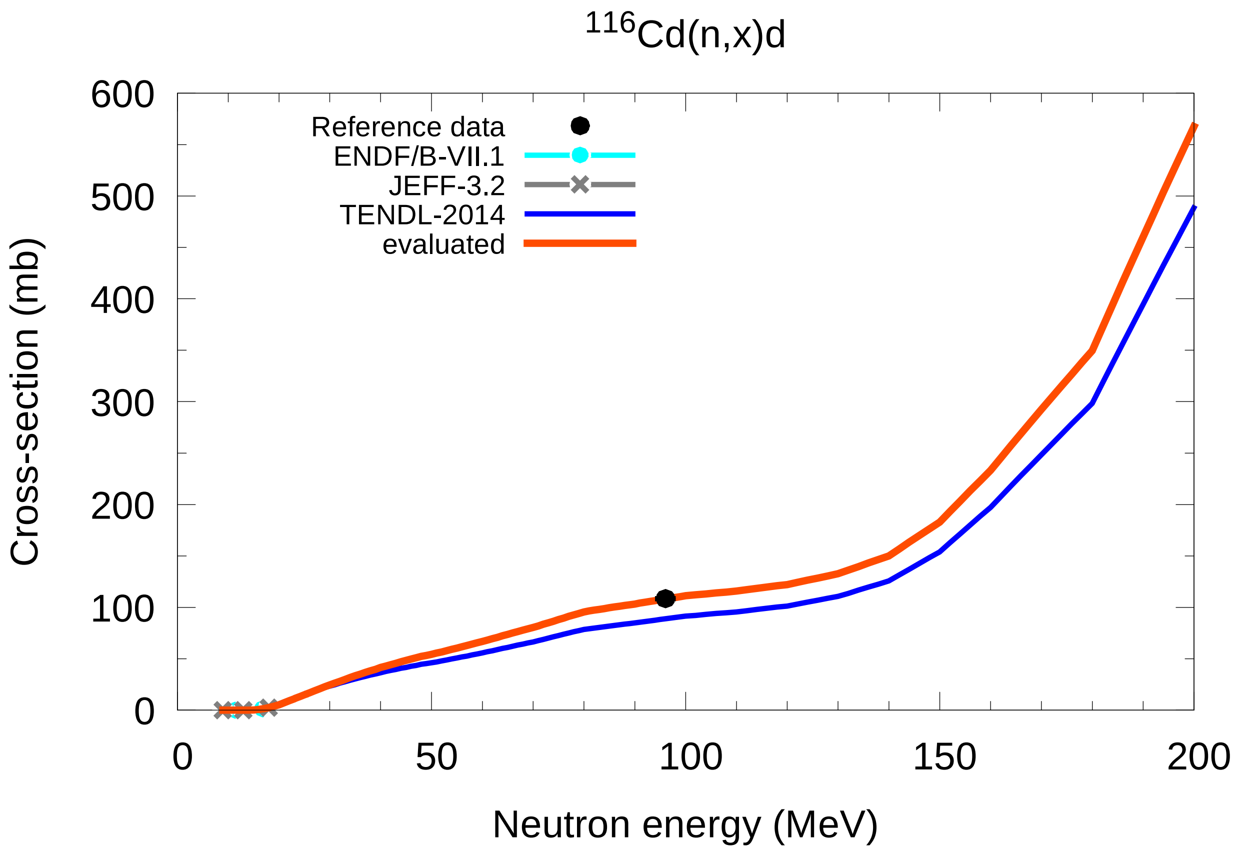
^{112}Cd(n,x)d
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
100
200
300
400
500
600
0
50
100
150
200



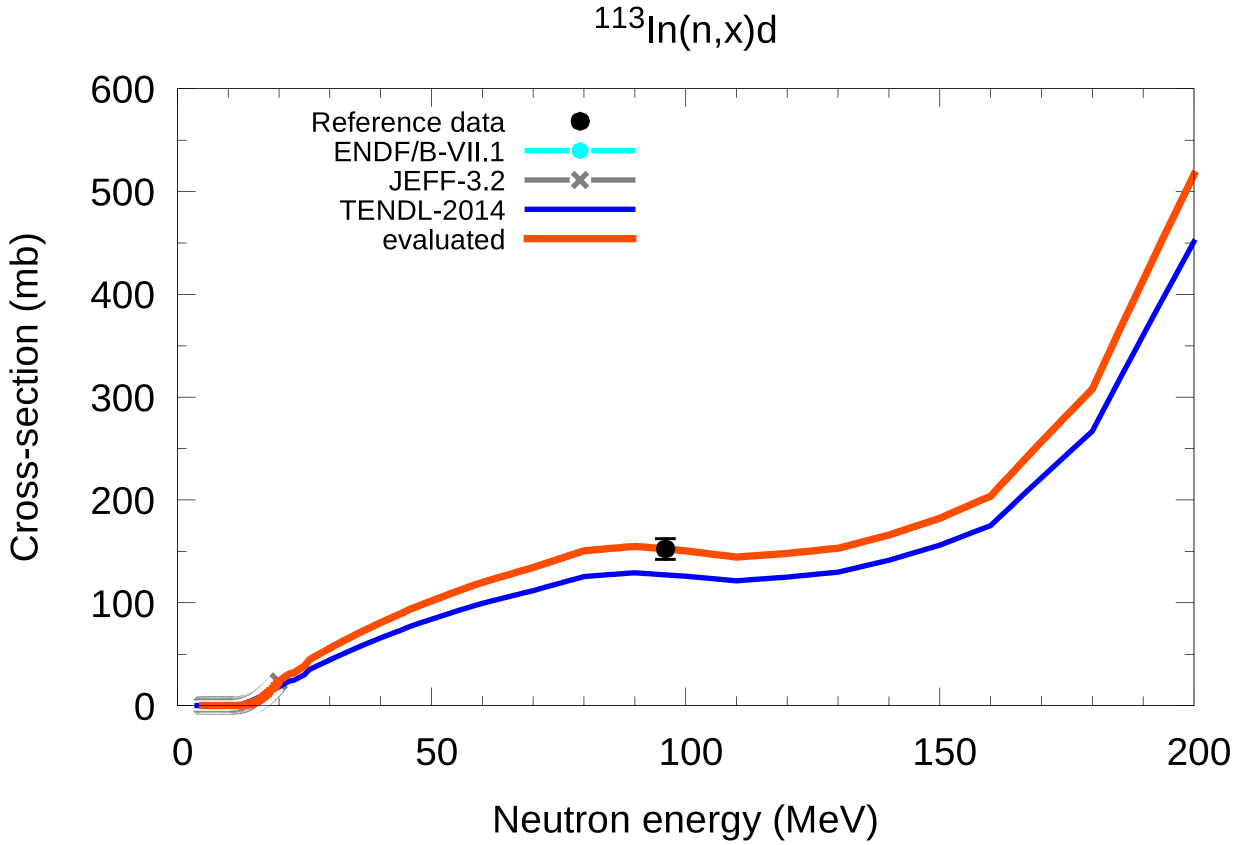
^{113}Cd(n,x)d
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
100
200
300
400
500
600
0
50
100
150
200



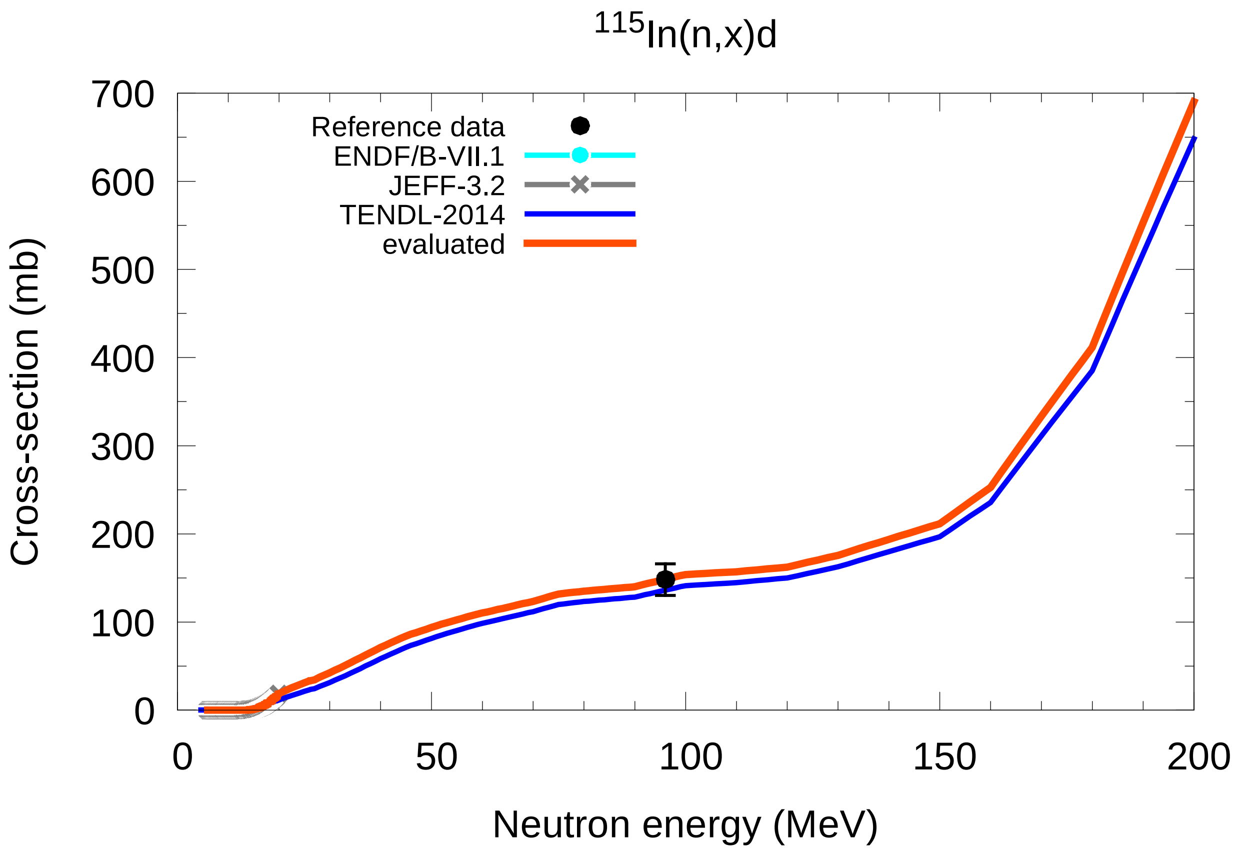
$^{114}Cd(n,x)d$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
100
200
300
400
500
600
0
50
100
150
200



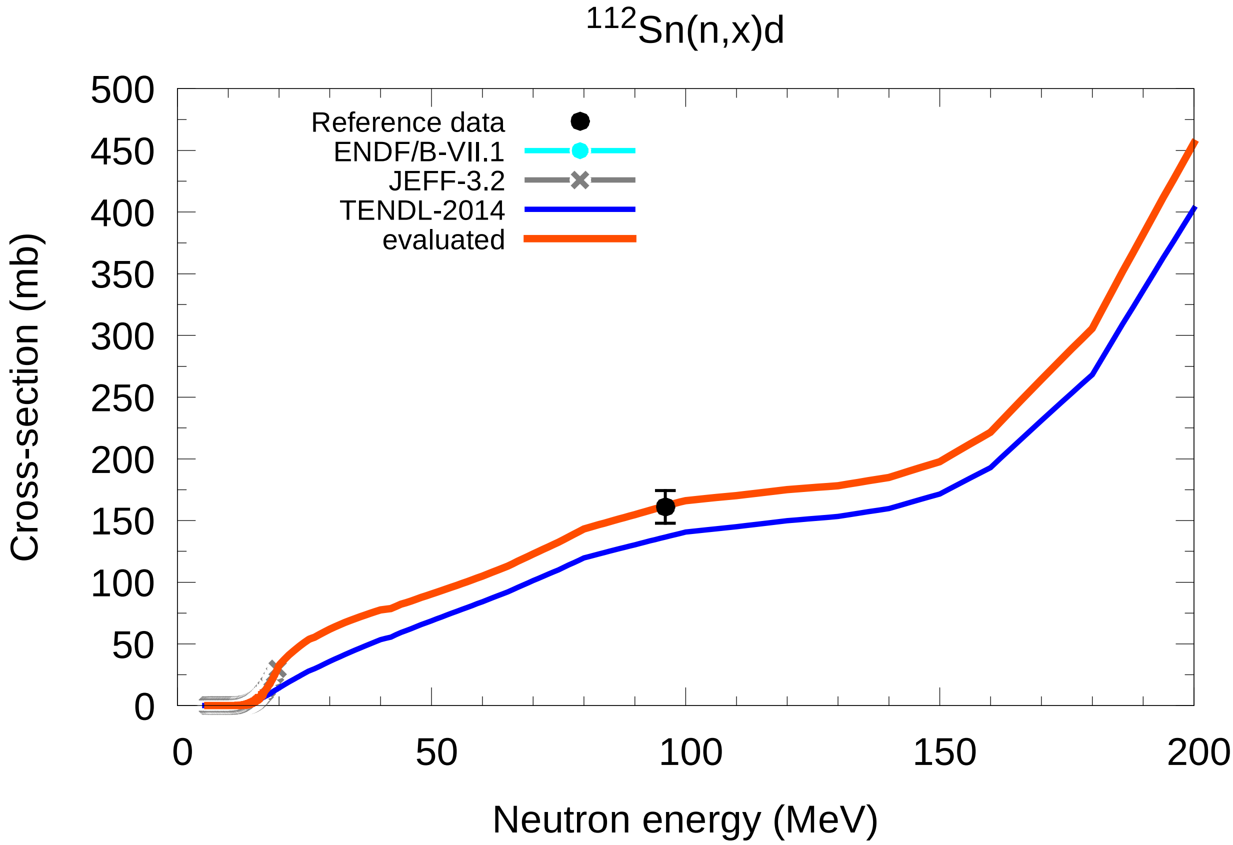
$^{116}Cd(n,x)d$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
100
200
300
400
500
600
0
50
100
150
200



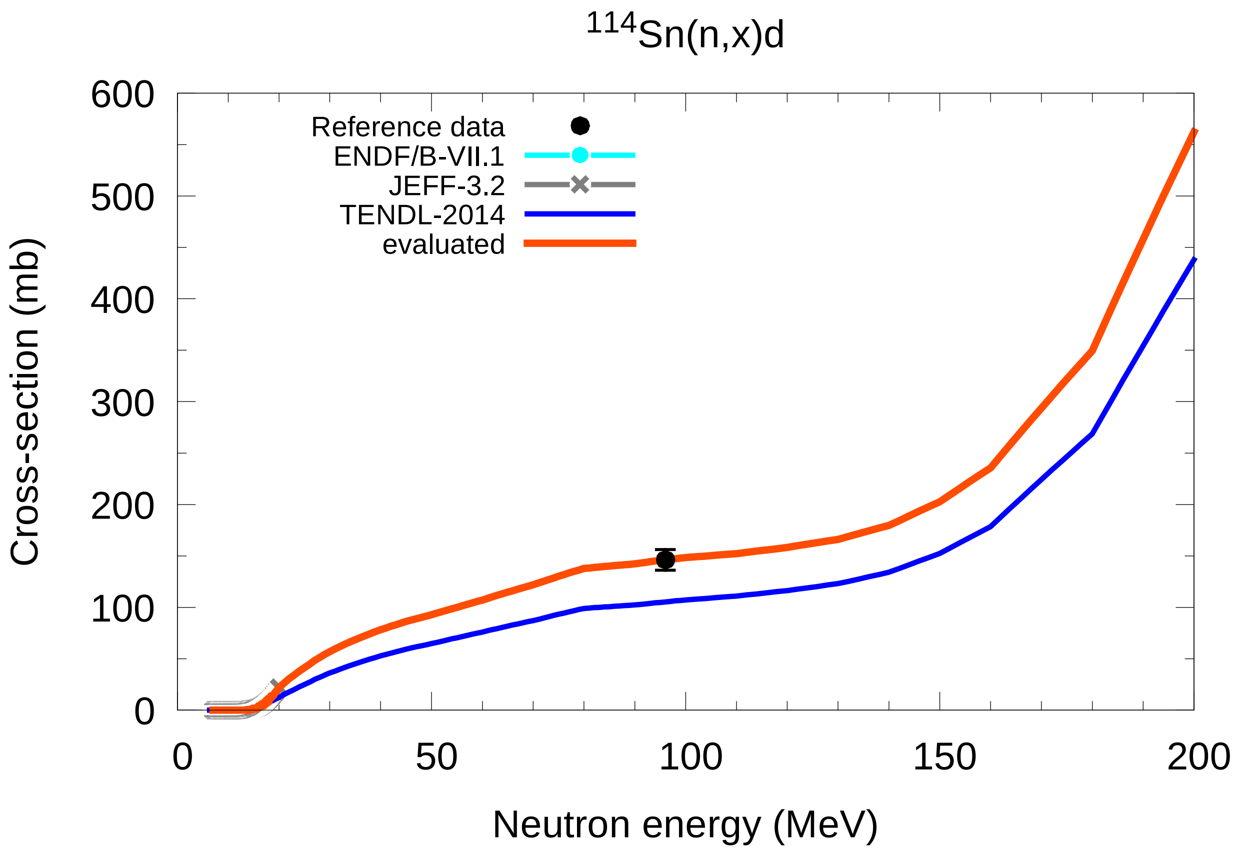
^{113}In(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



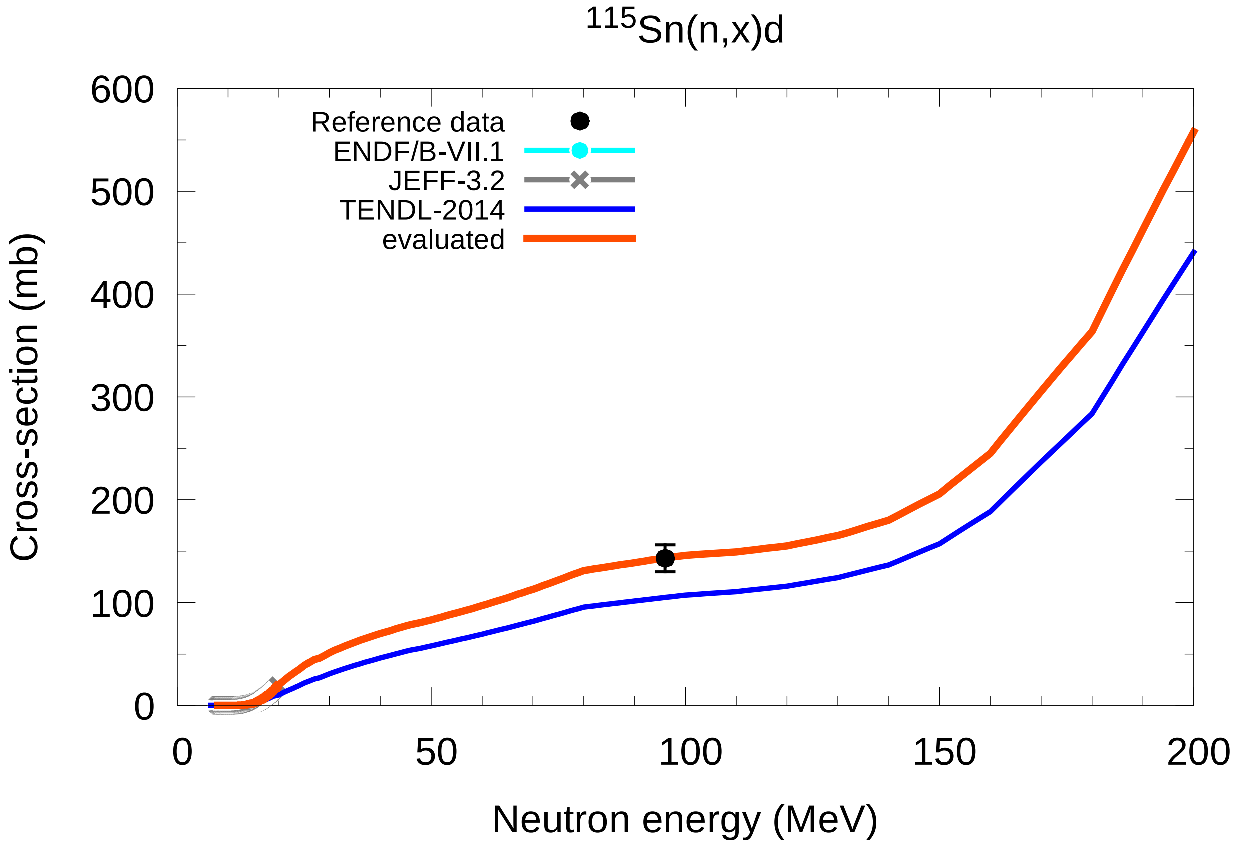
^{115}In(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200



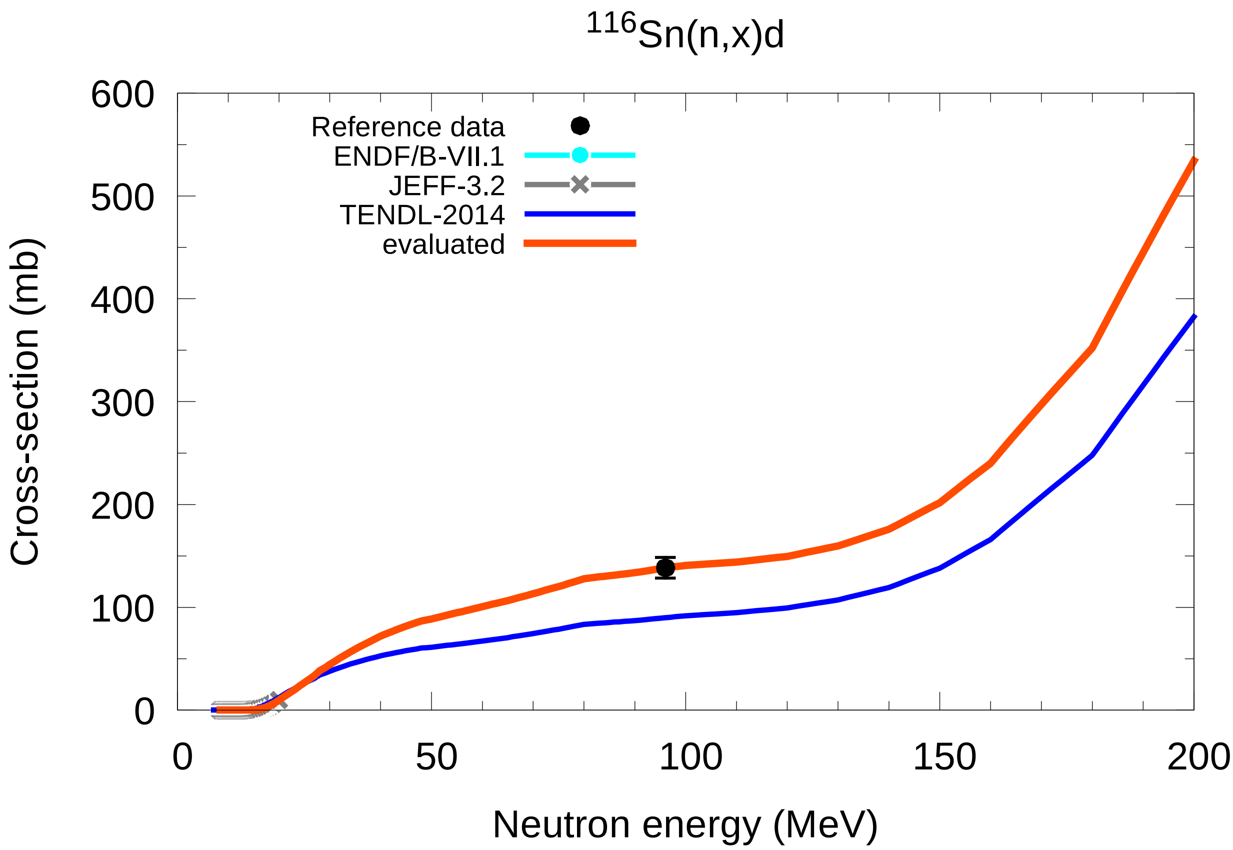
$^{112}Sn(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



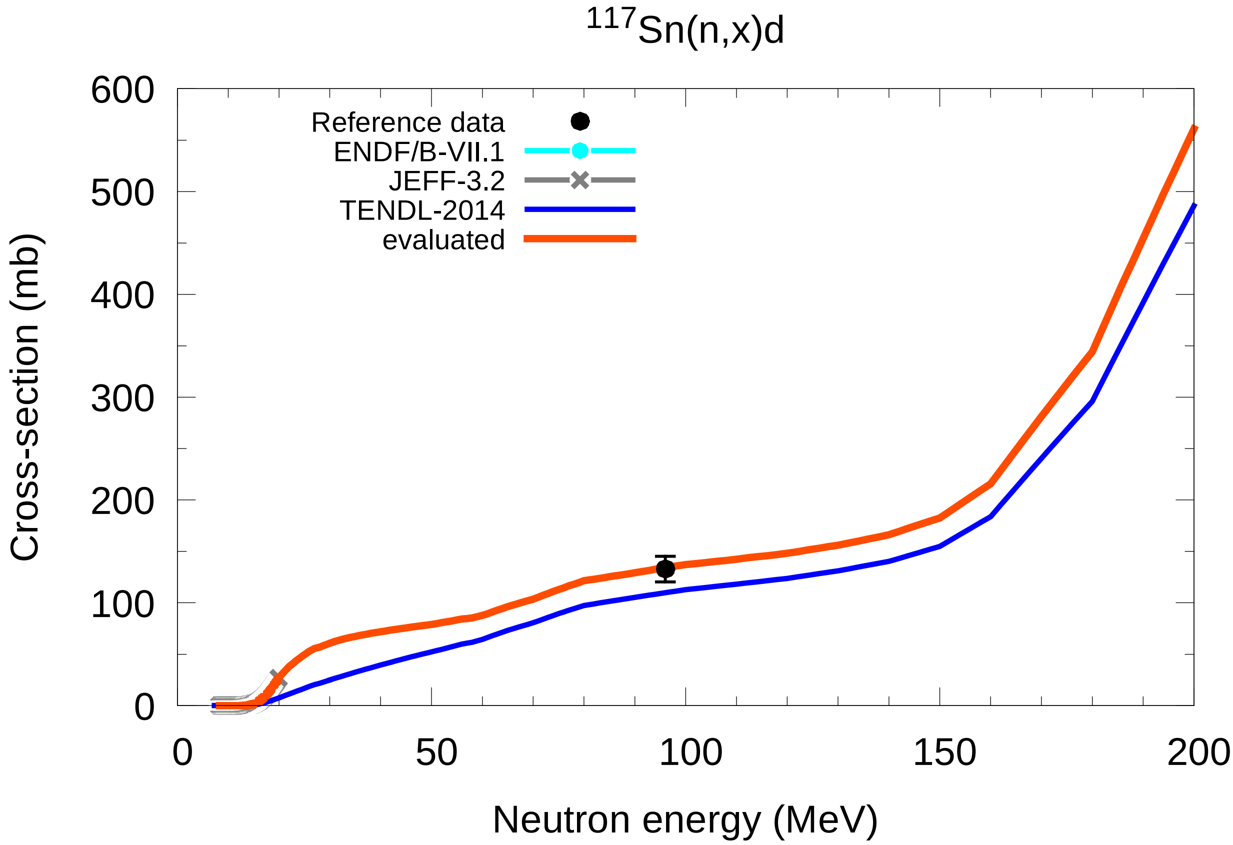
$^{114}Sn(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



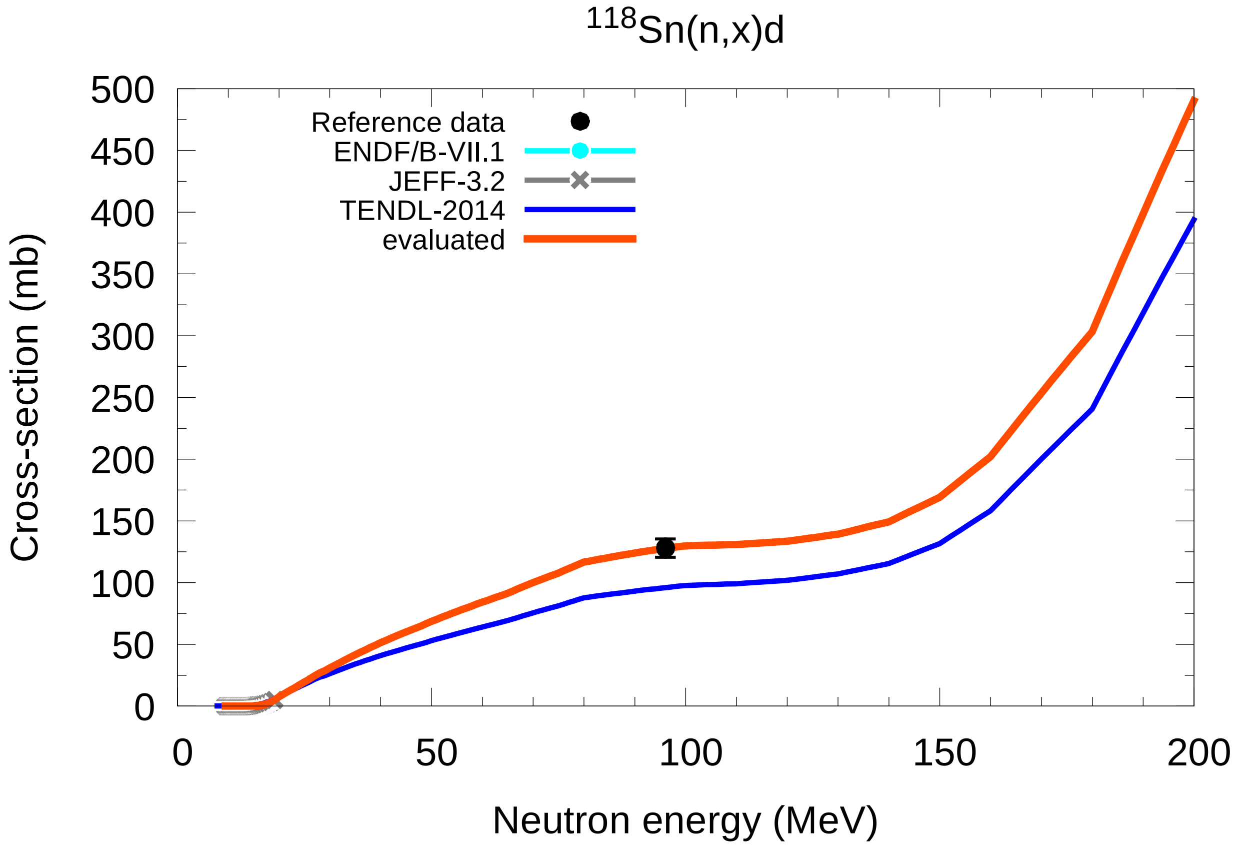
$^{115}Sn(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
50
150



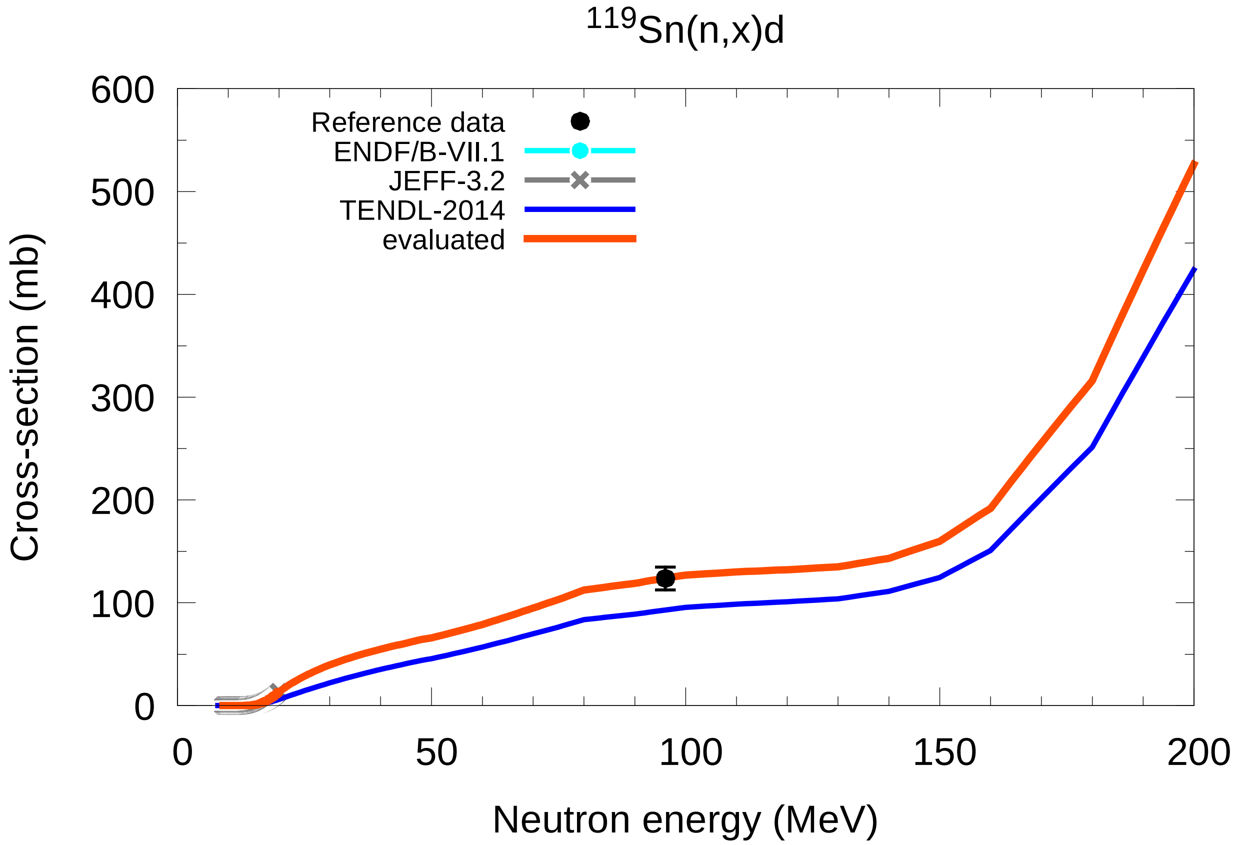
$^{116}Sn(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
50
150



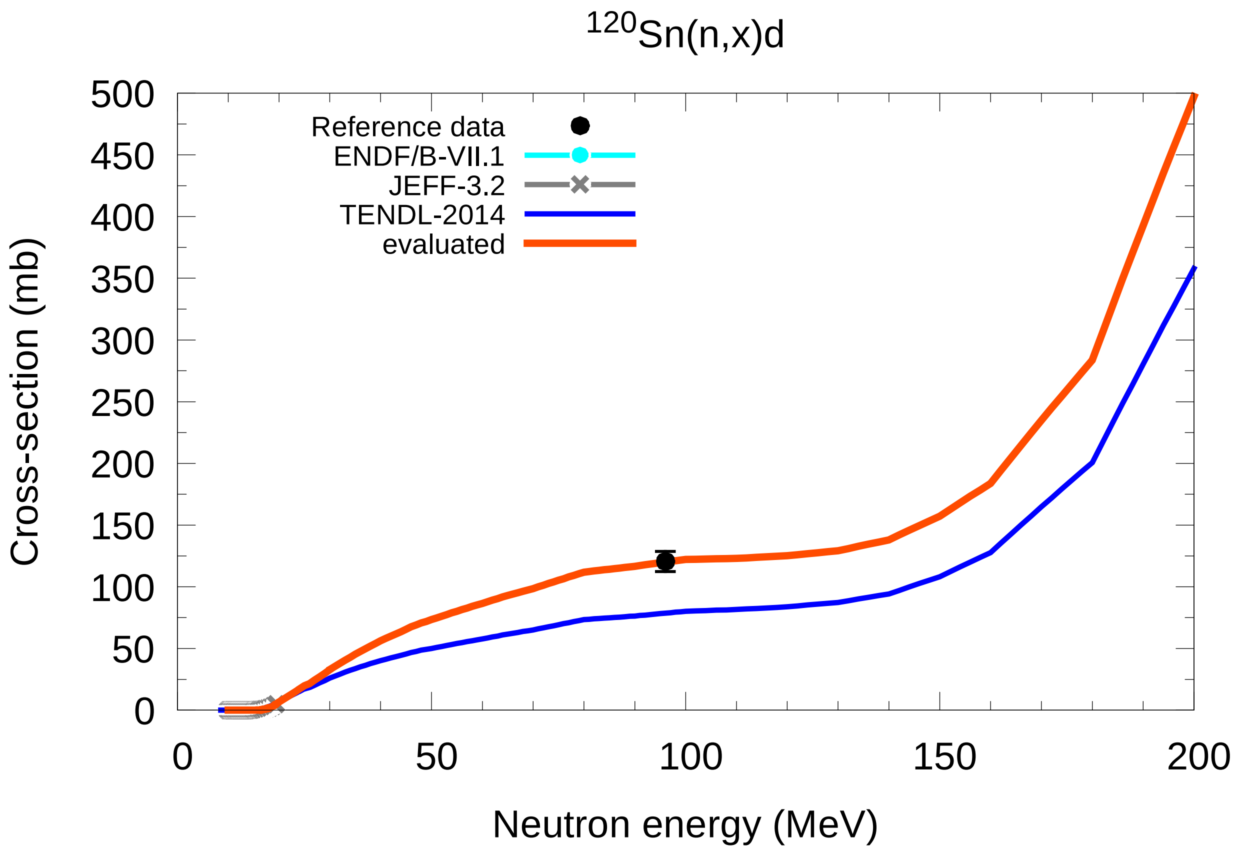
^{117}Sn(n,x)d
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
100
200
300
400
500
600
0
50
100
150
200



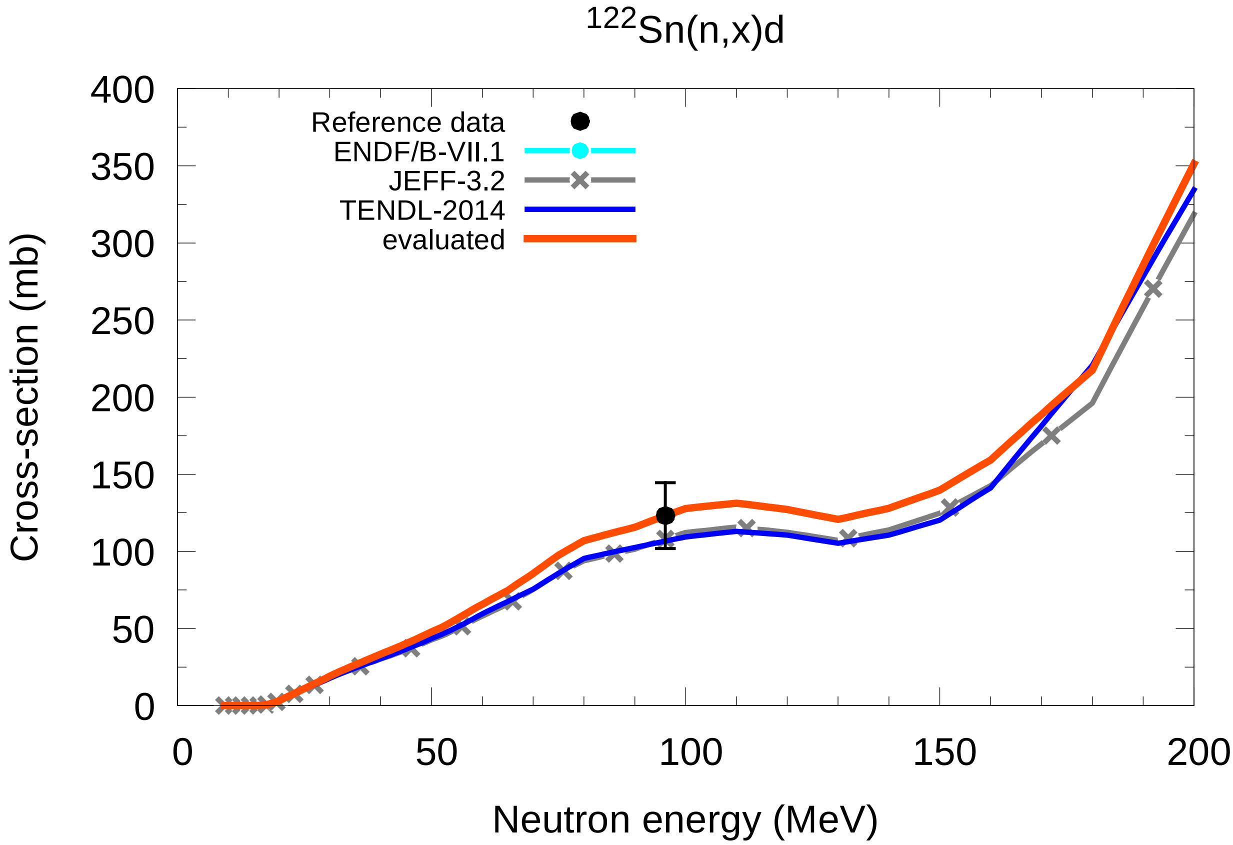
^{118}Sn(n,x)d
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300
350
400
450
500
0
50
100
150
200



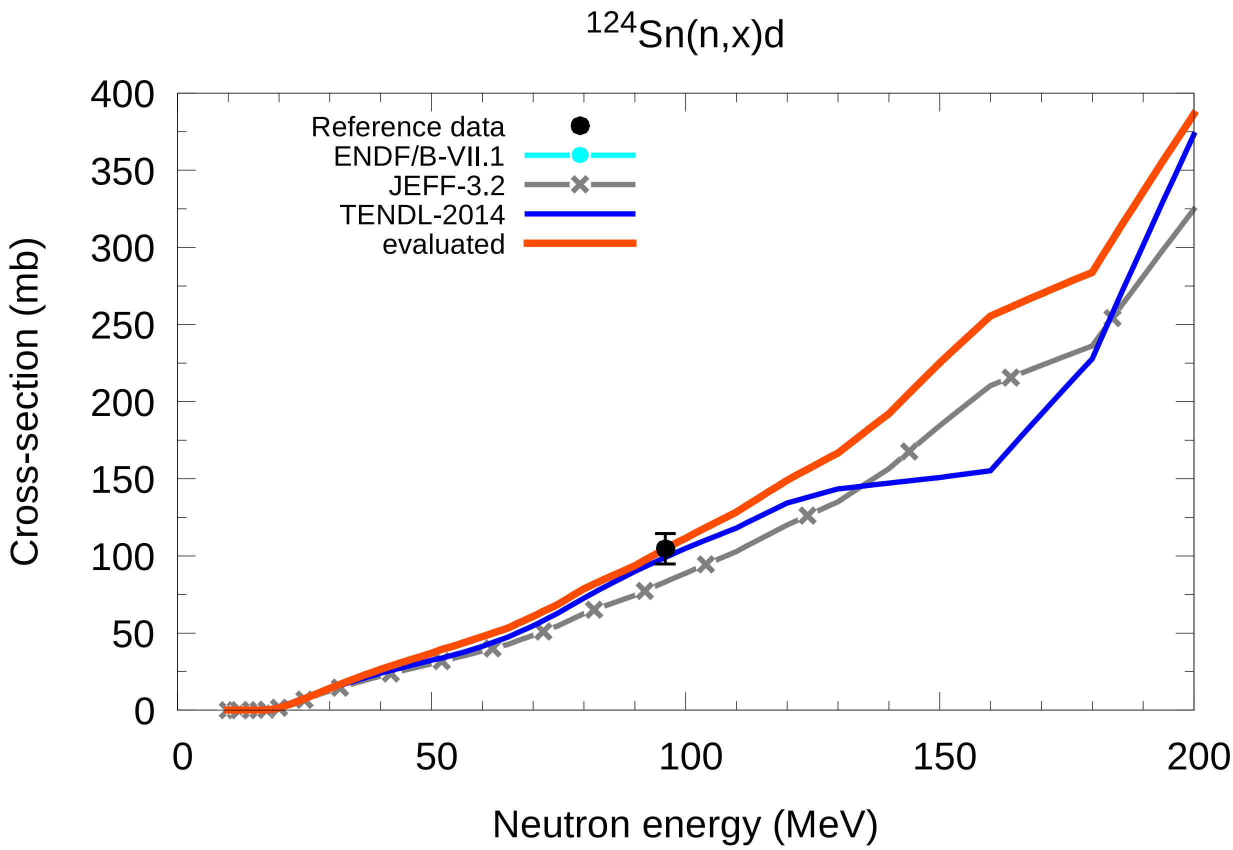
^{119}Sn(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
50
150



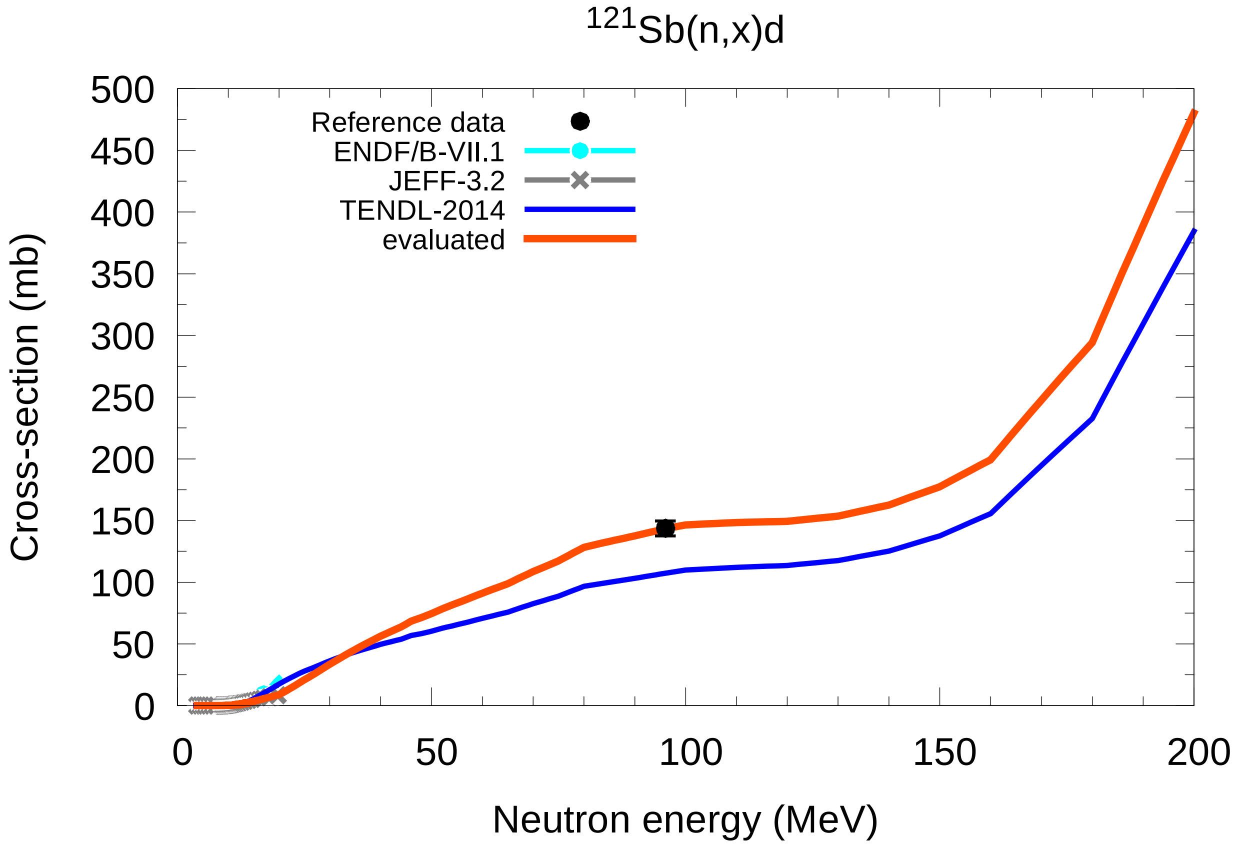
^{120}Sn(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



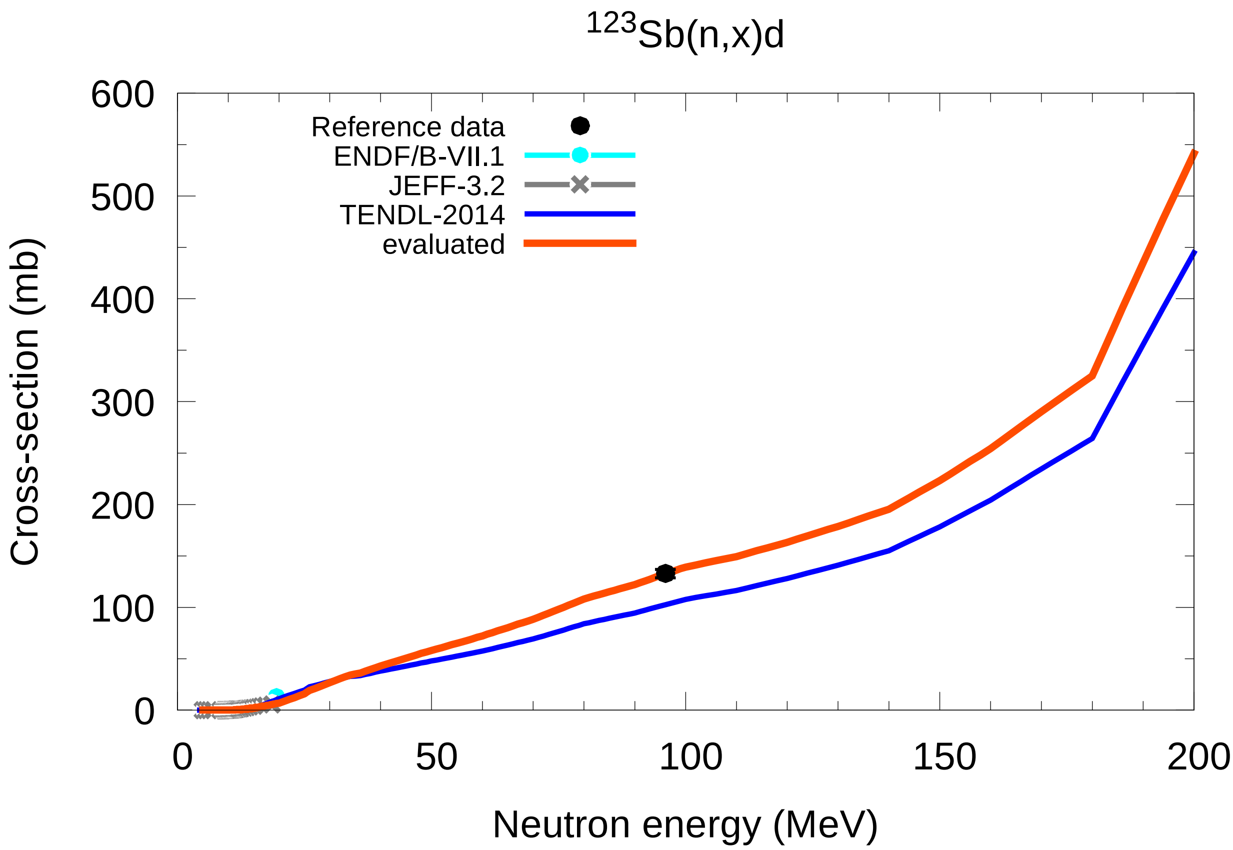
^{122}Sn(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



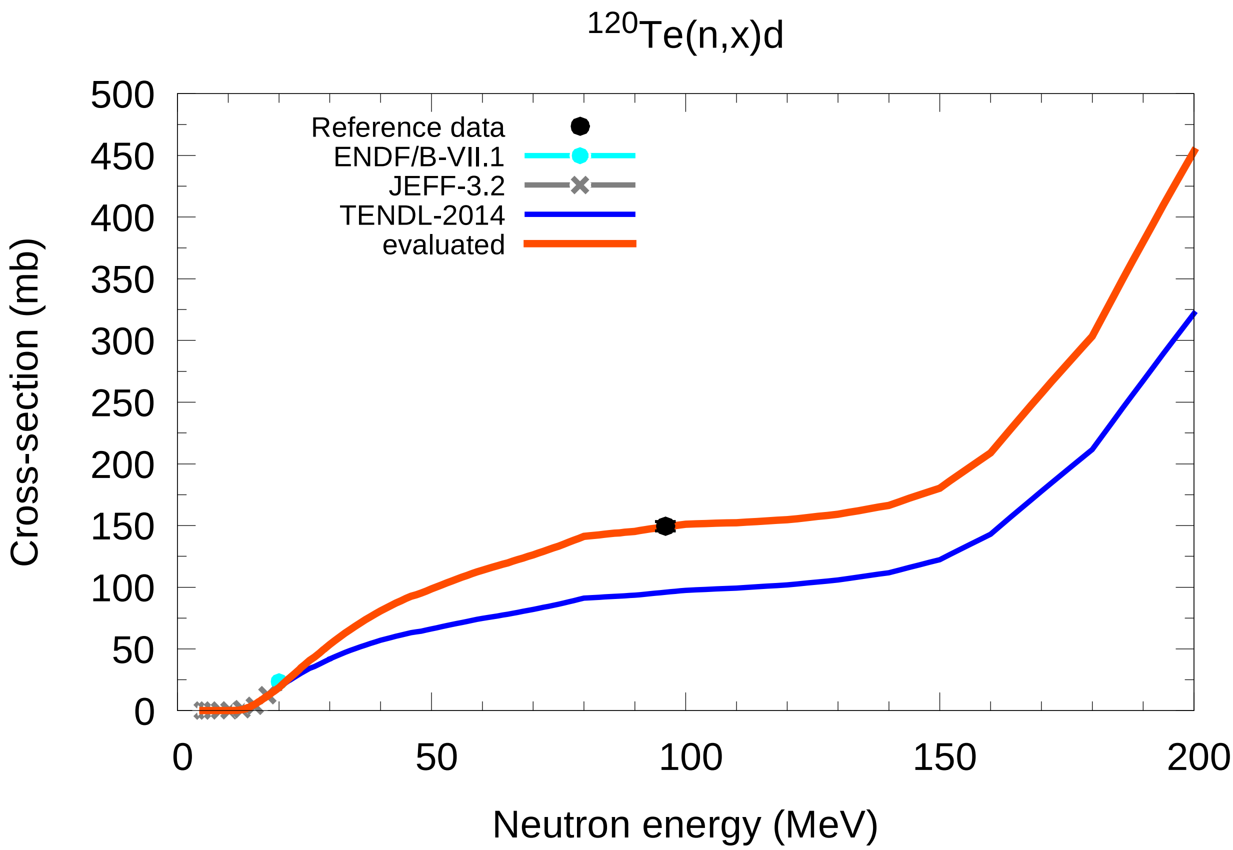
^{124}Sn(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



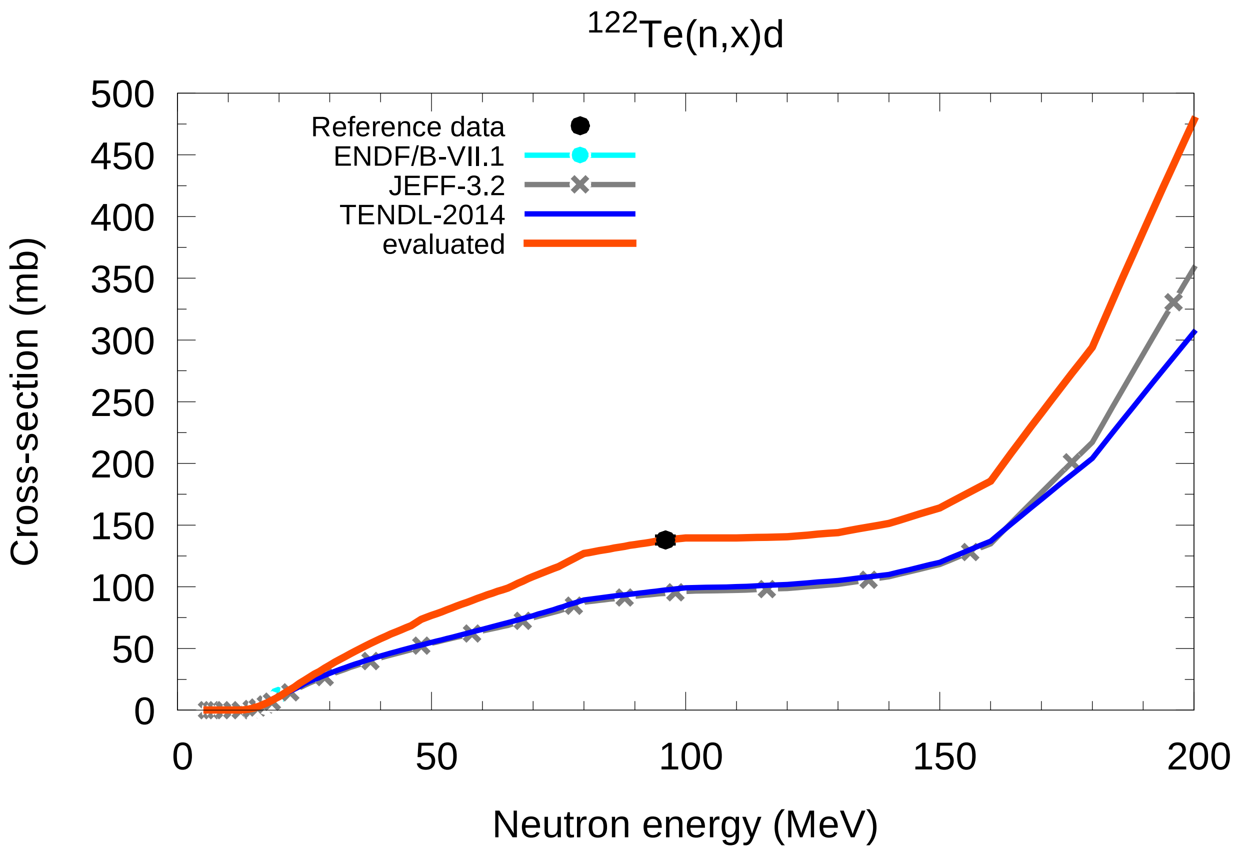
^{121}Sb(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



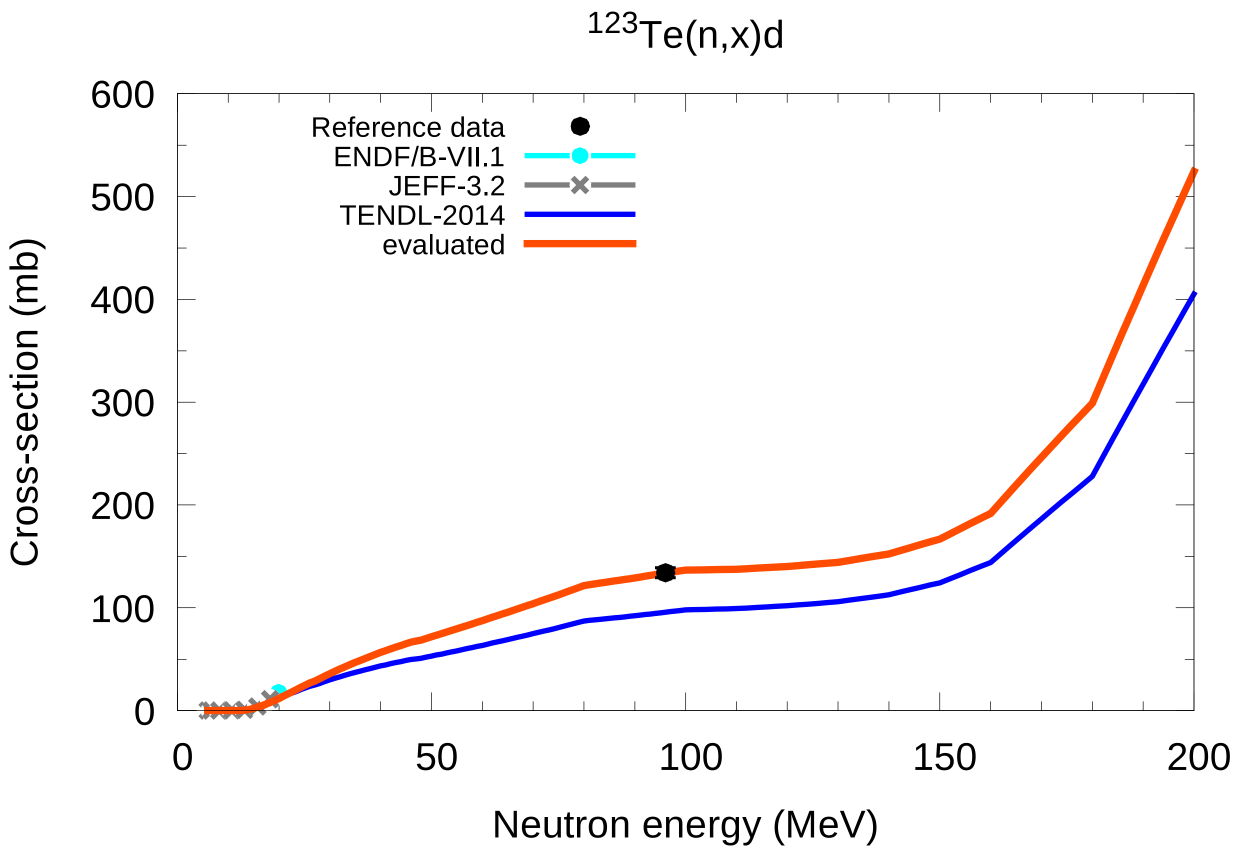
^{123}Sb(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600



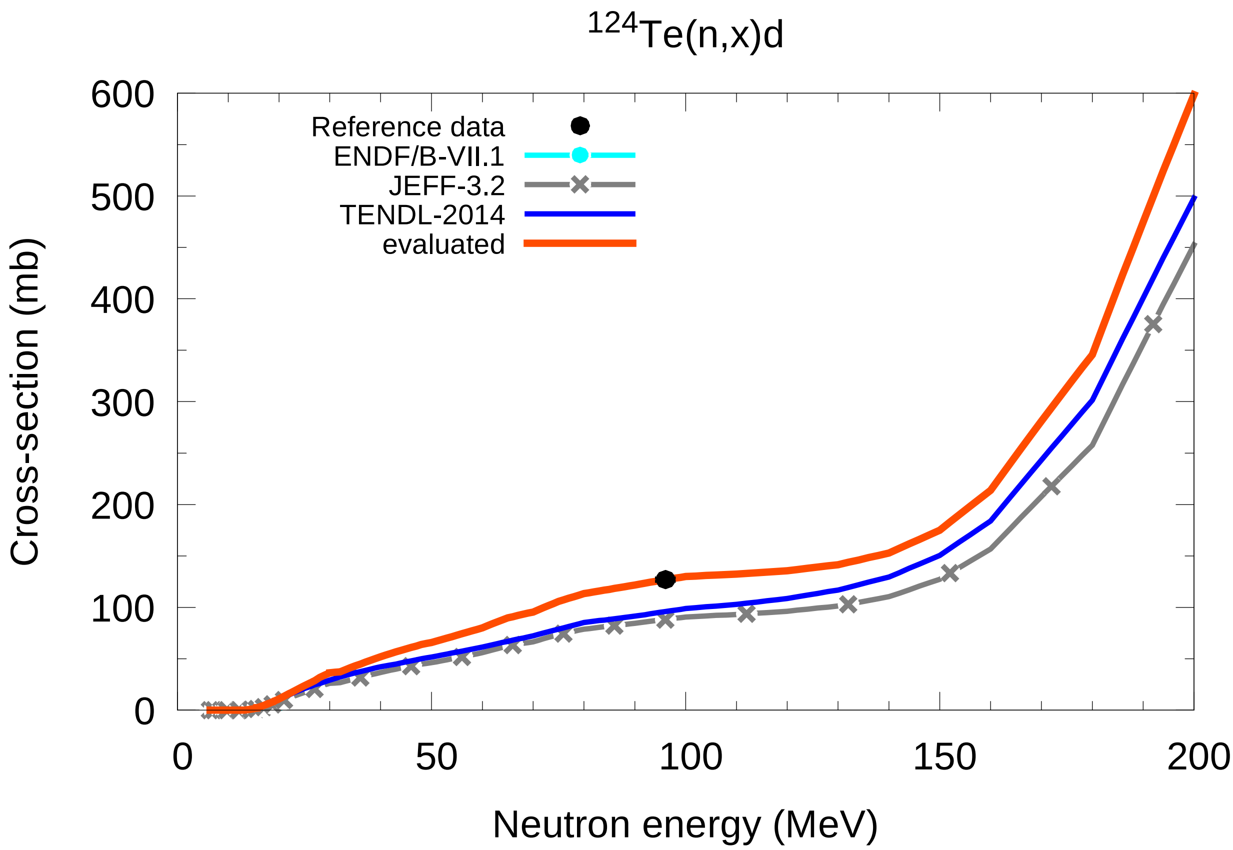
$^{120}Te(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



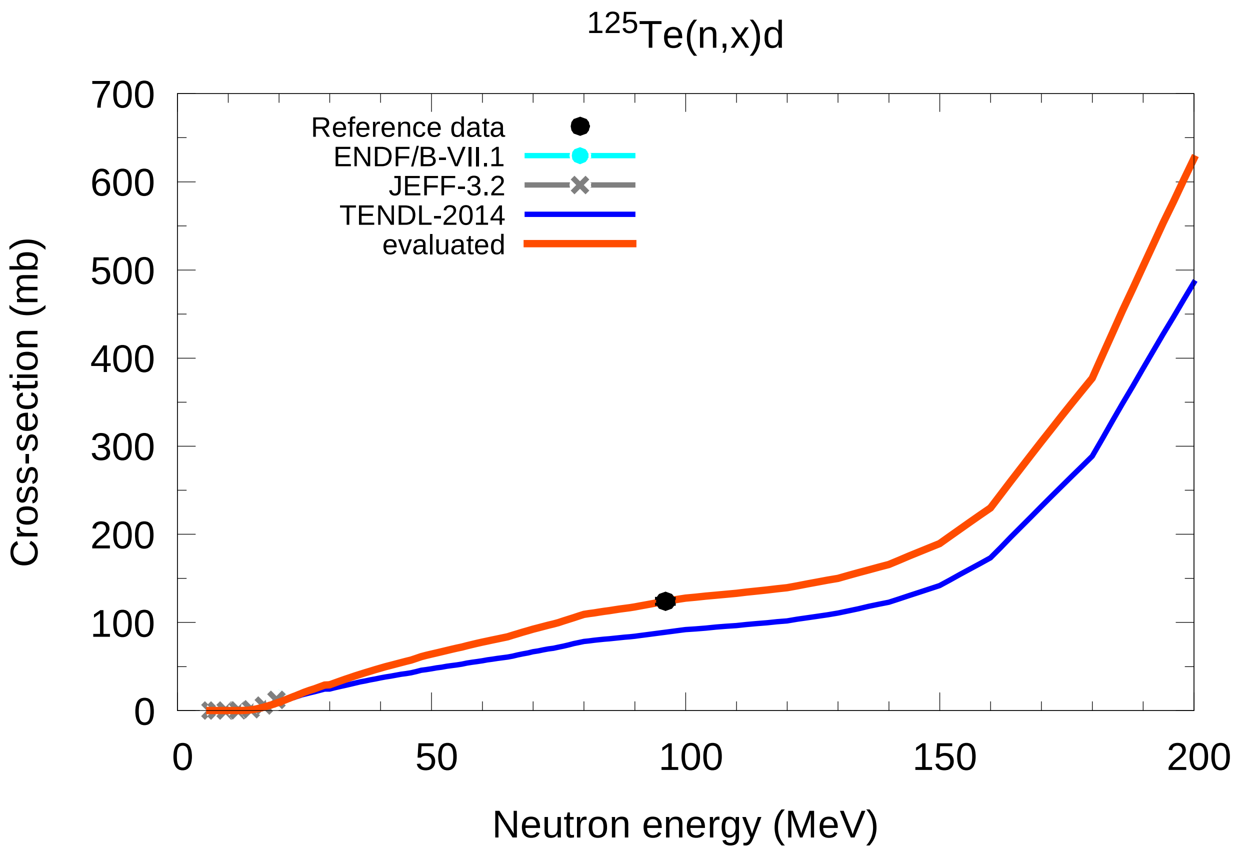
$^{122}Te(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500

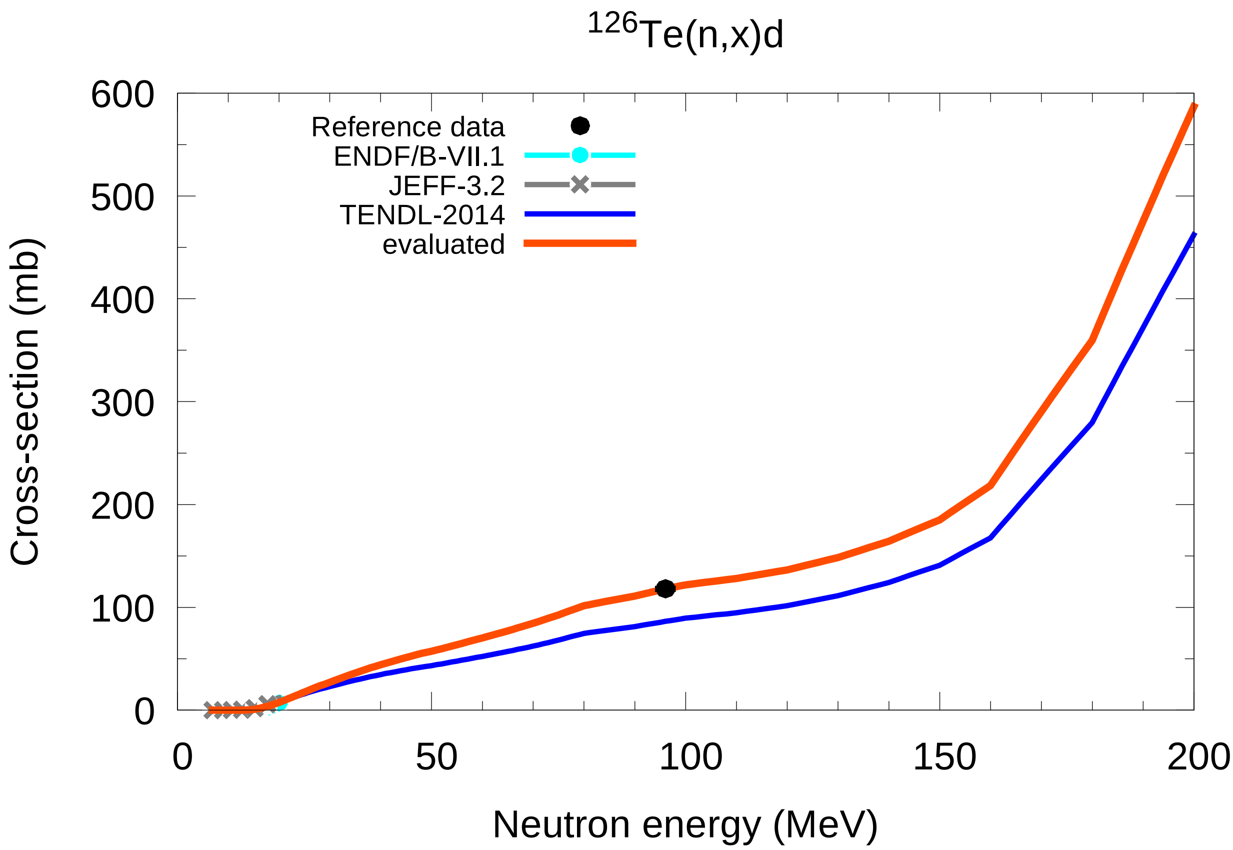


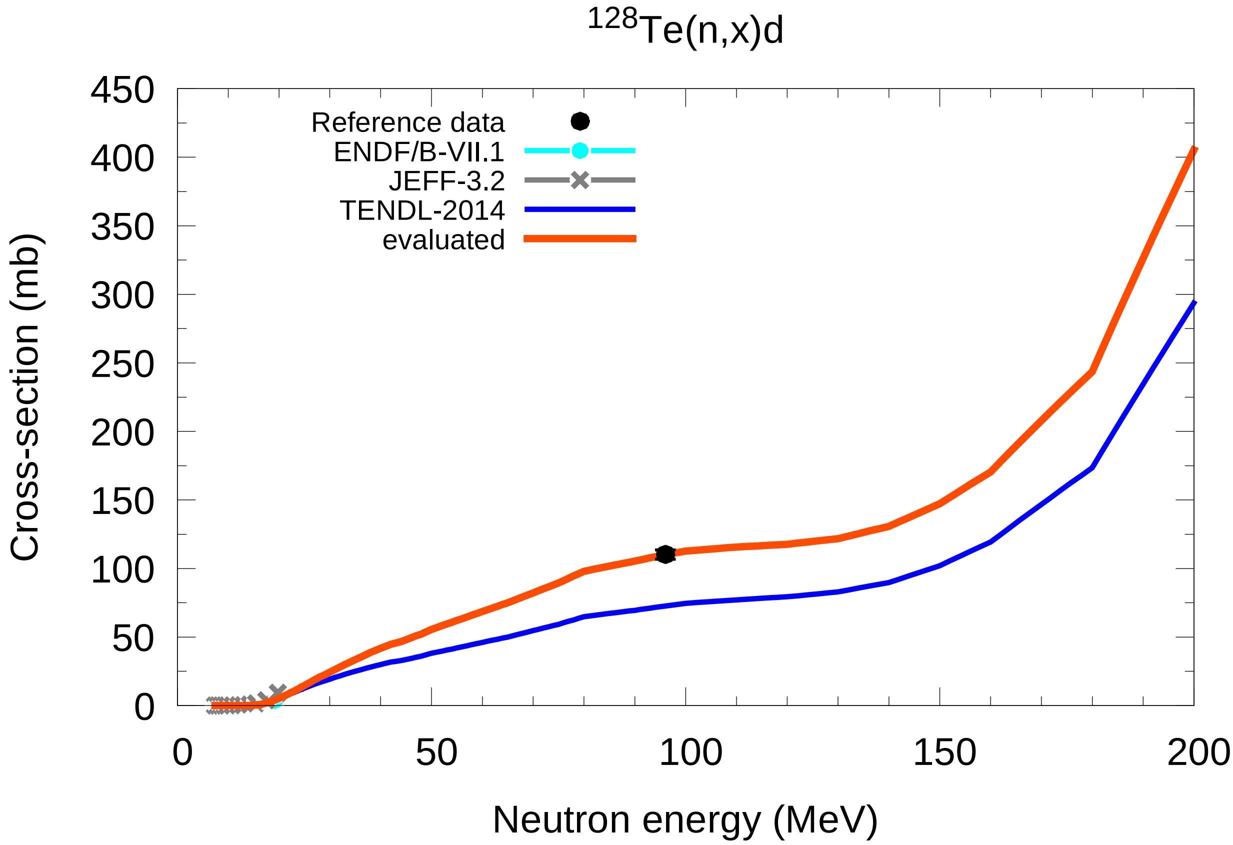
$^{123}Te(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



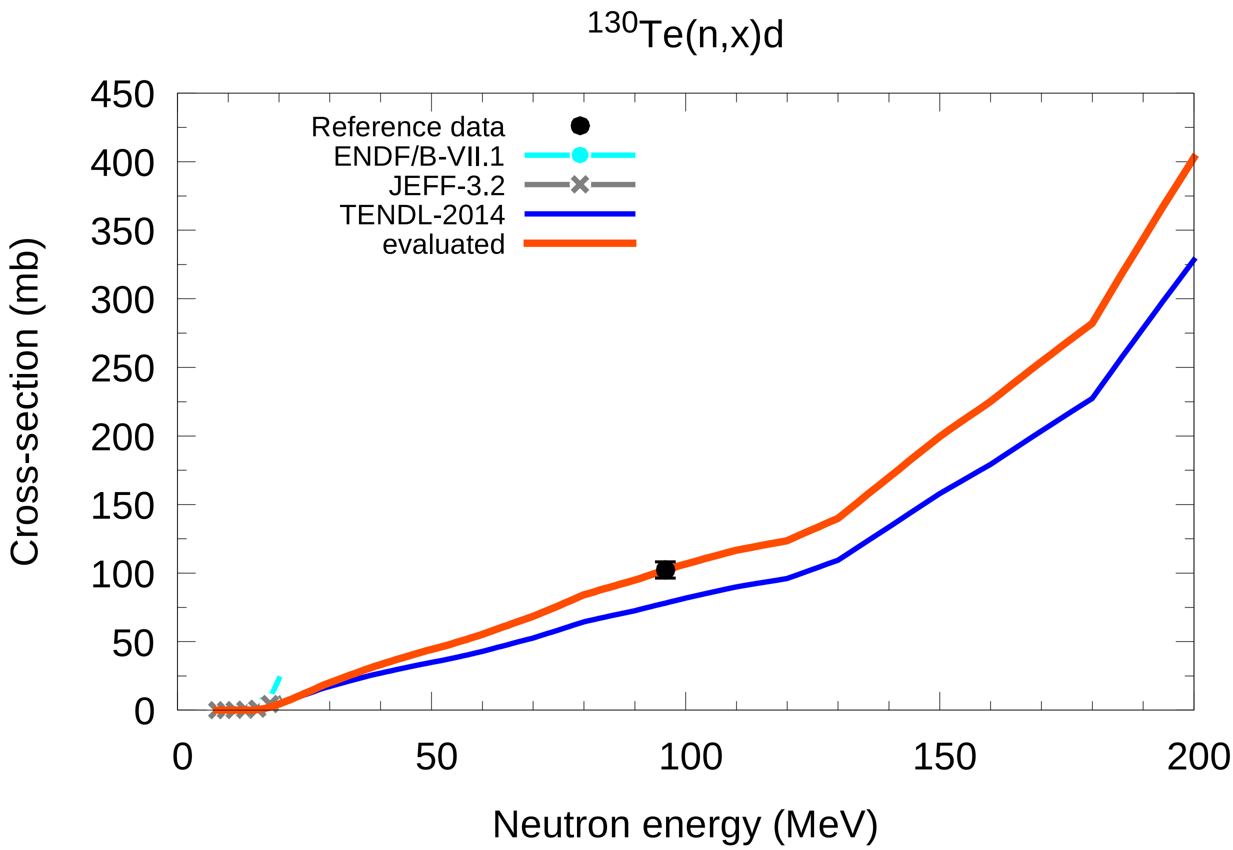
$^{124}Te(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200


$^{125}Te(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200

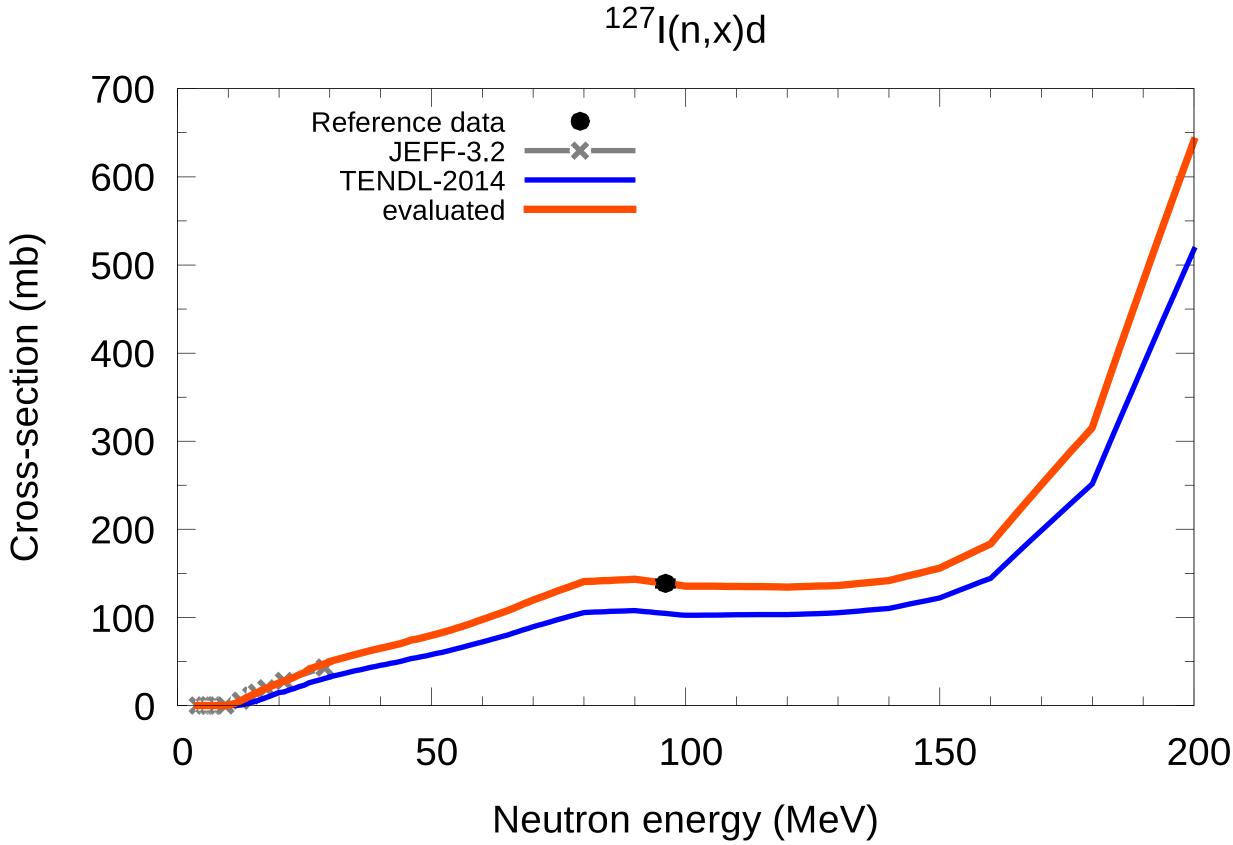

$^{126}Te(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



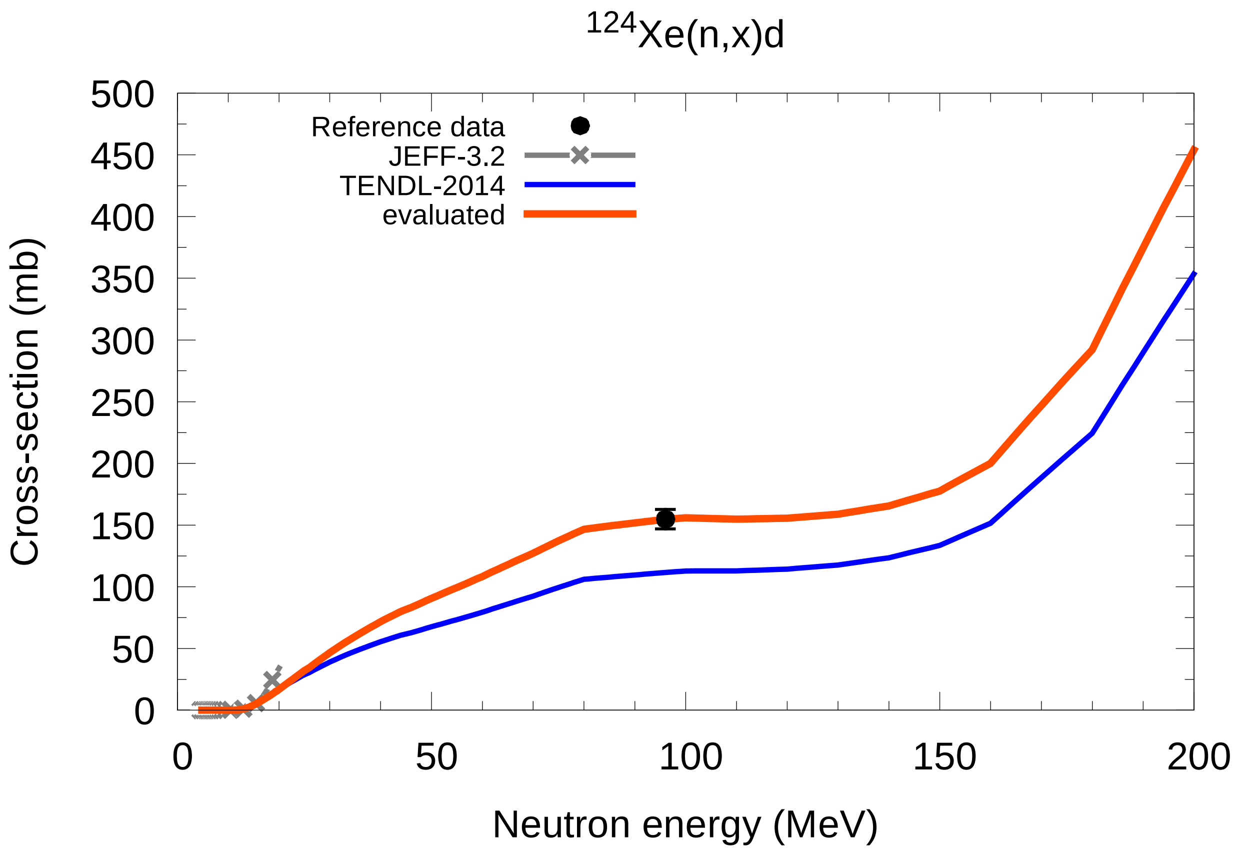
^{128}Te(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



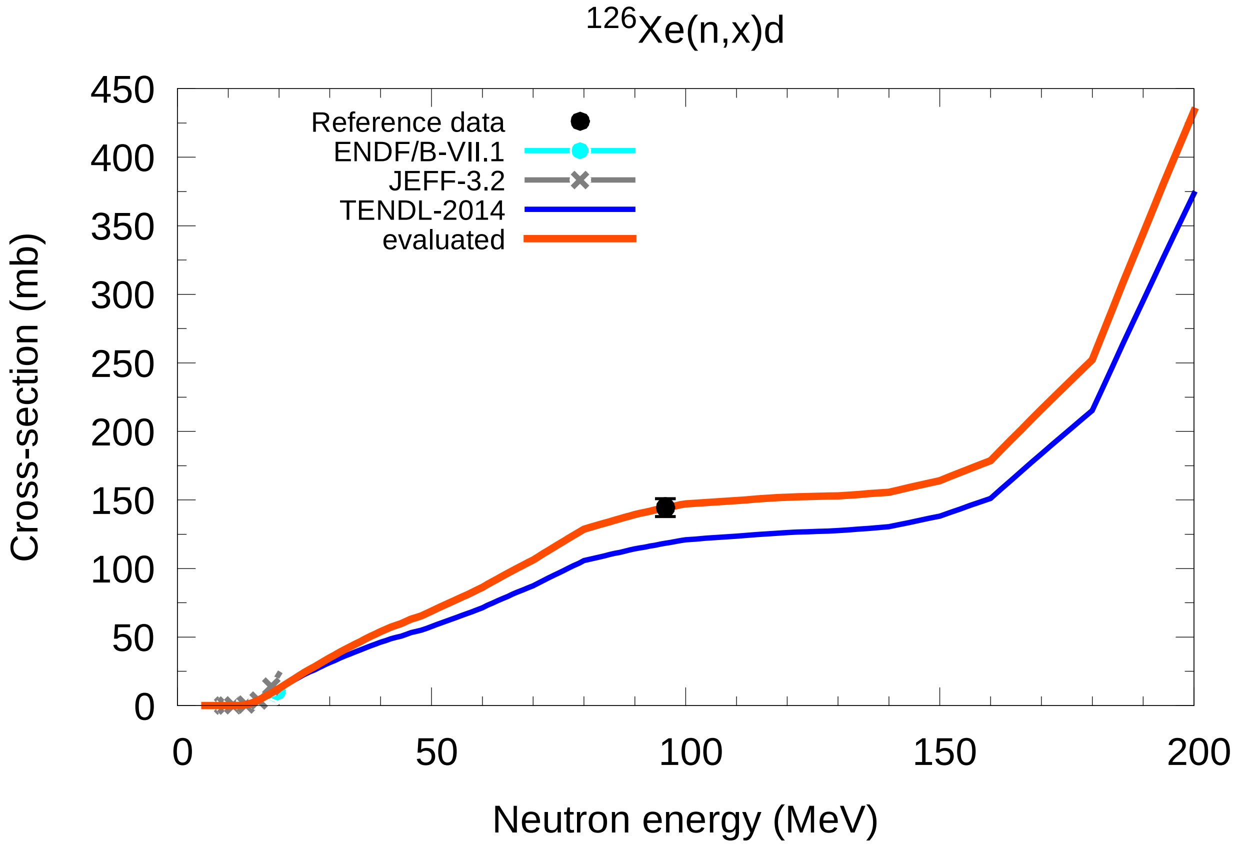
^{130}Te(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



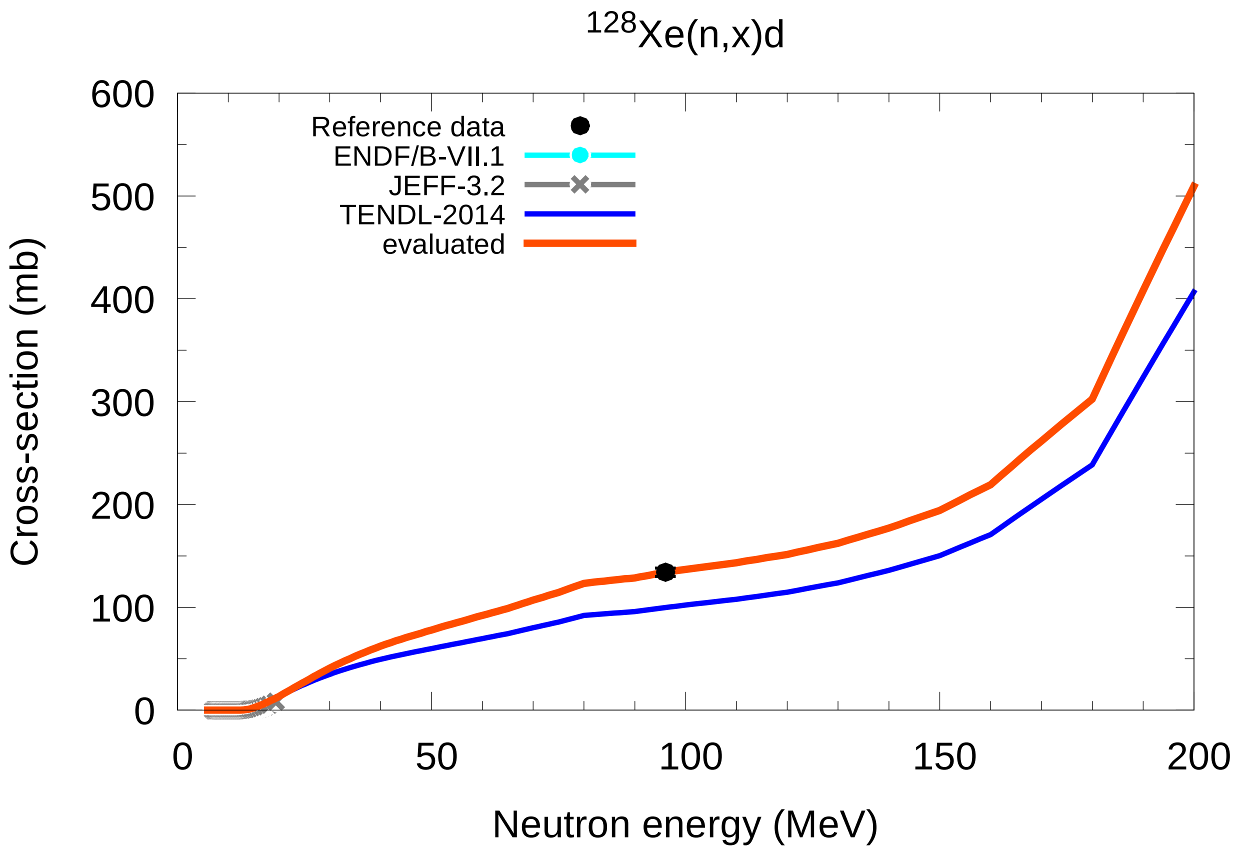
127I(n,x)d
Cross-section (mb)
Neutron energy (MeV)
Reference data
JEFF-3.2
TENDL-2014
evaluated
0
100
200
300
400
500
600
700
0
50
100
150
200



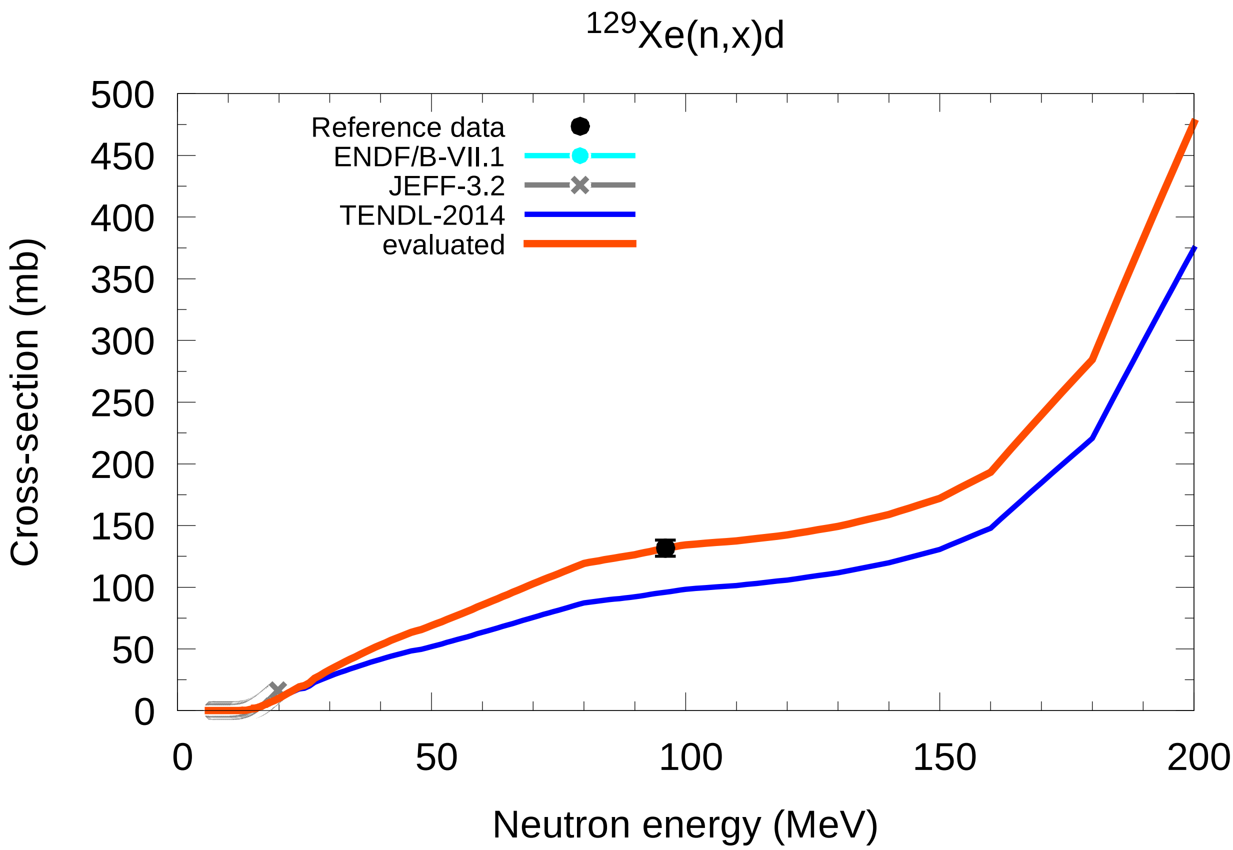
124Xe(n,x)d
Cross-section (mb)
Neutron energy (MeV)
Reference data
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300
350
400
450
500
0
50
100
150
200



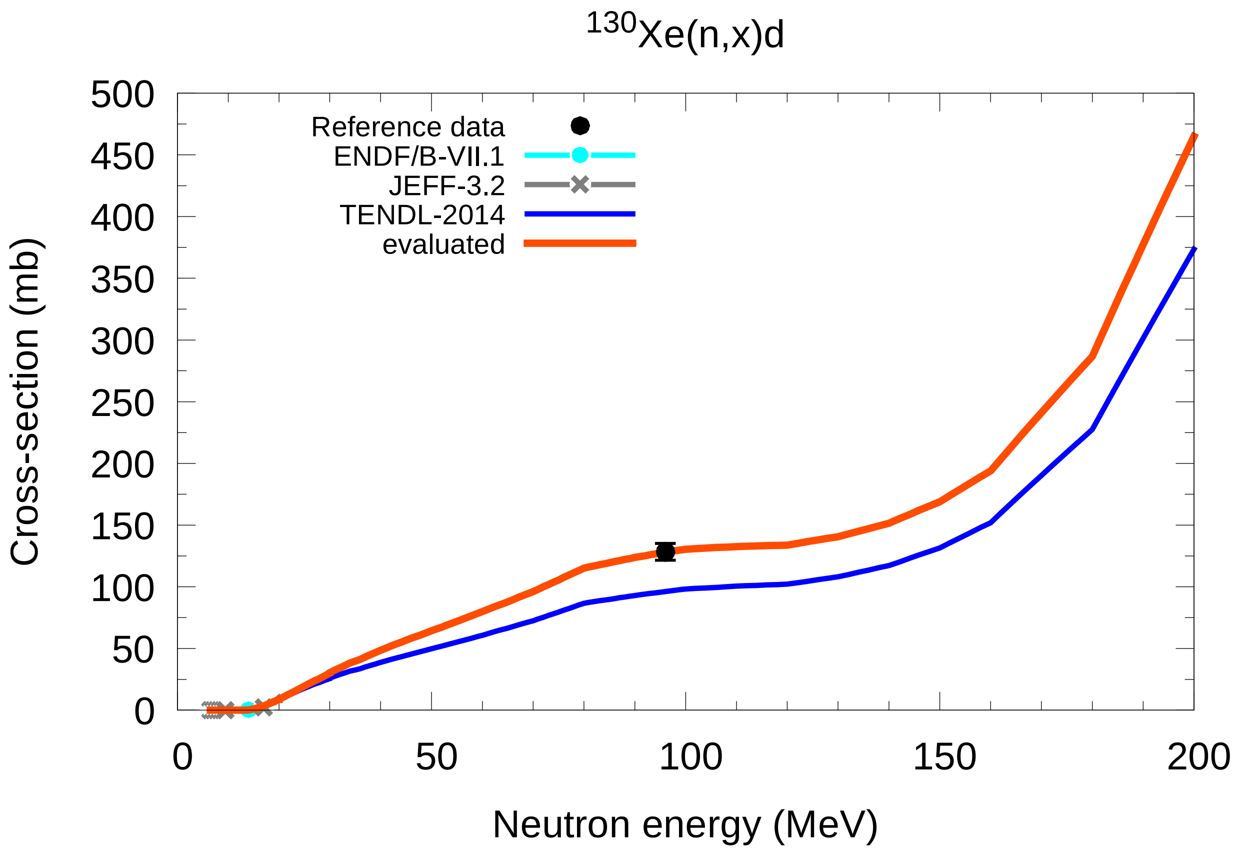
^{126}Xe(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



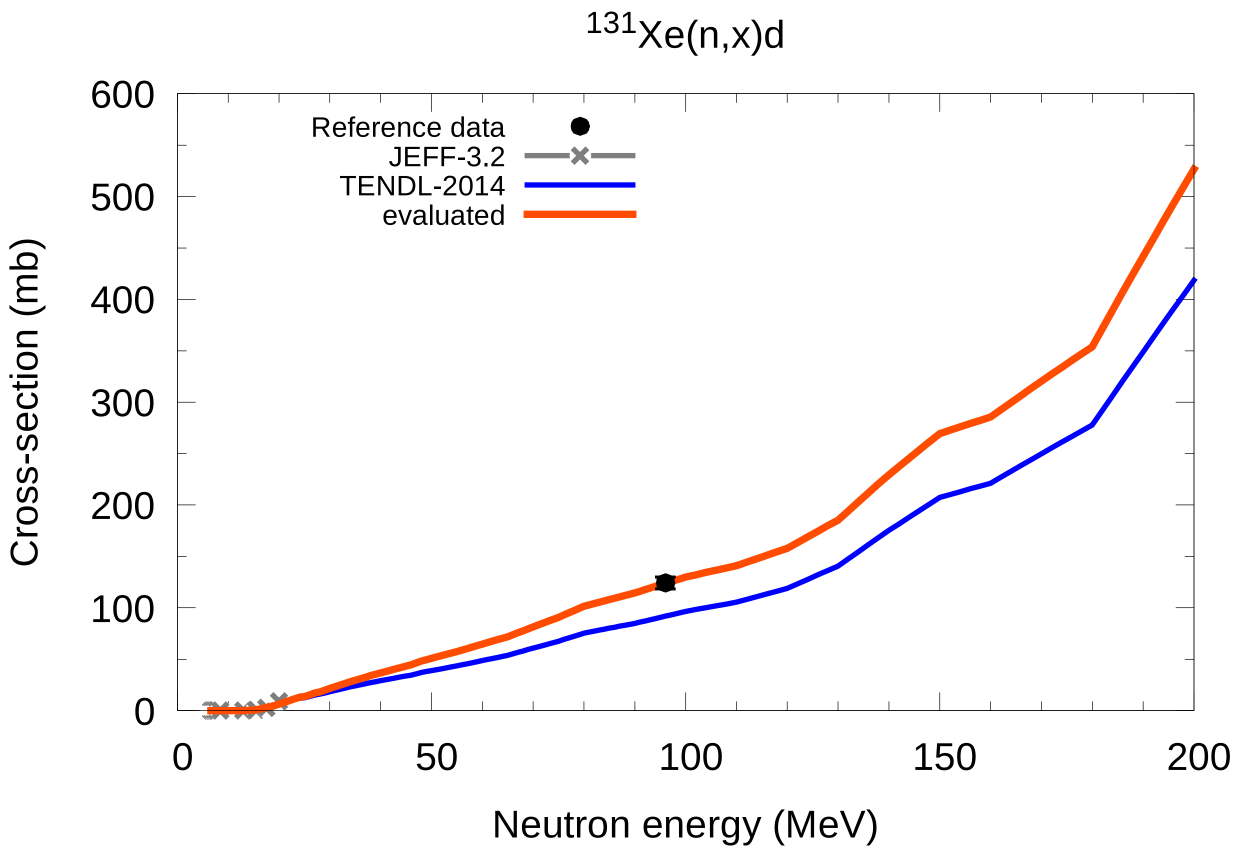
^{128}Xe(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600

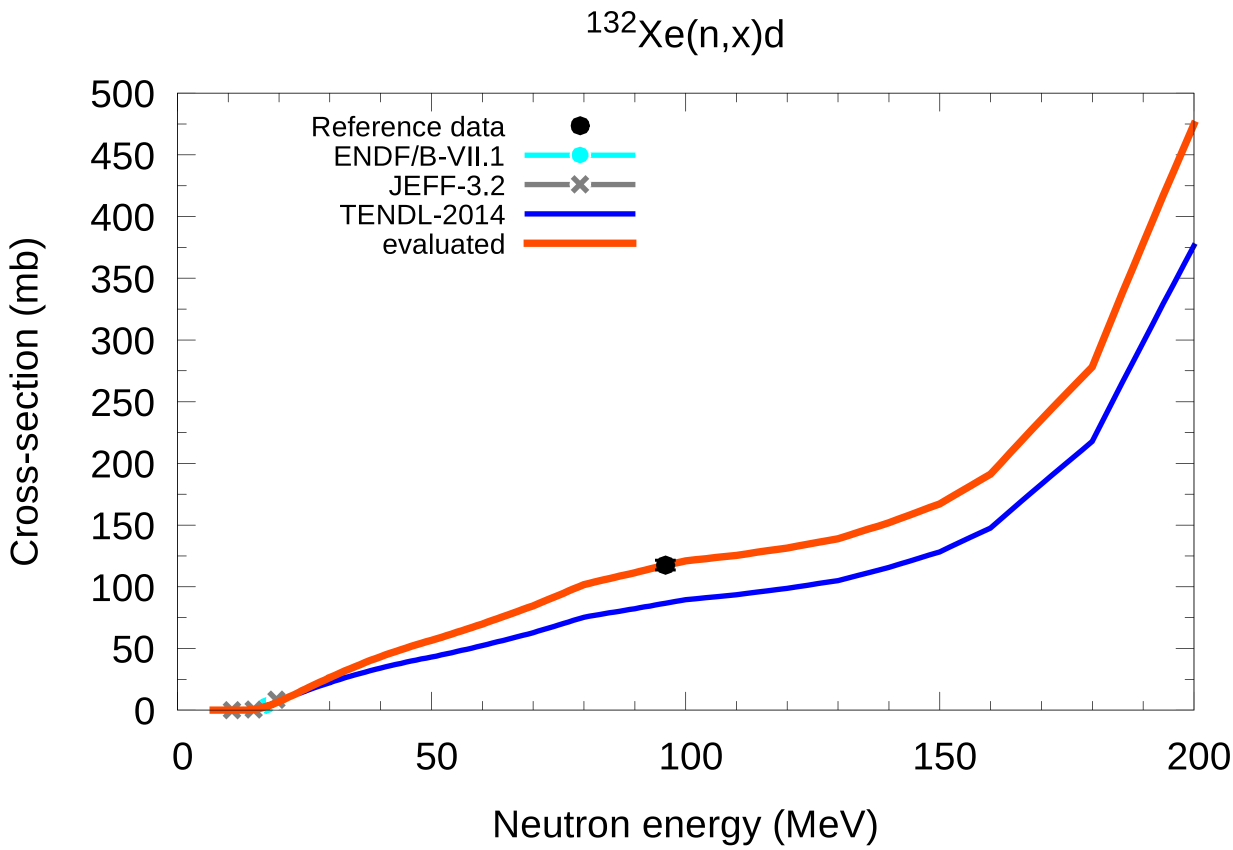


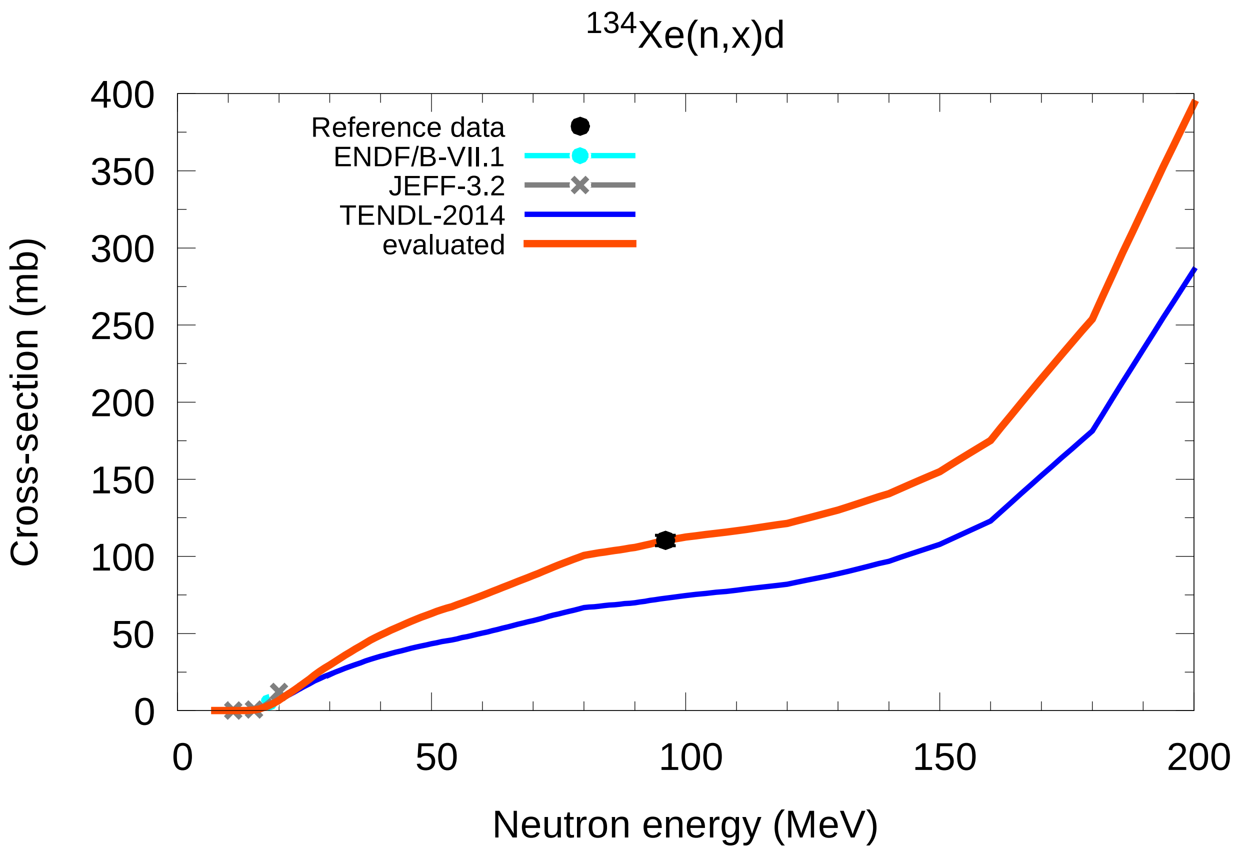
^{129}Xe(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



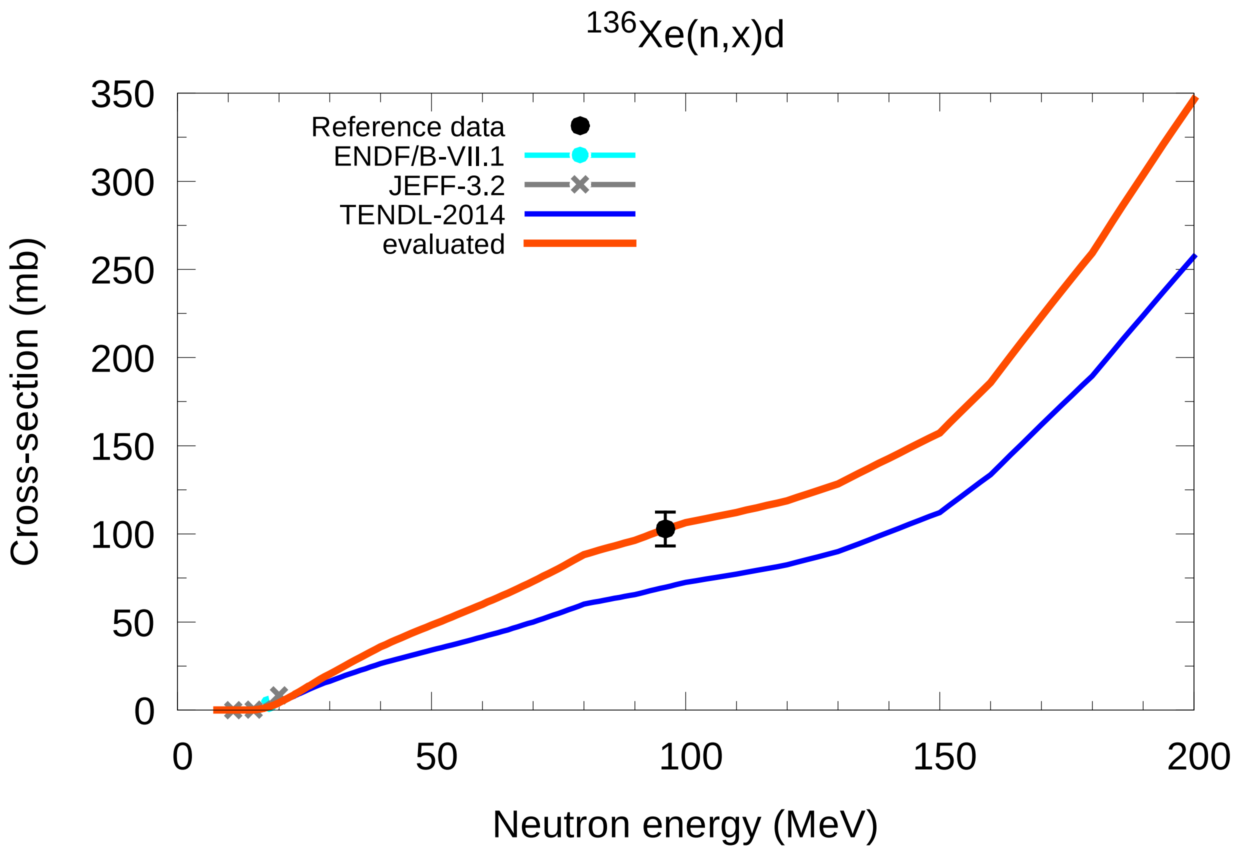
^{130}Xe(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500


131Xe(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200

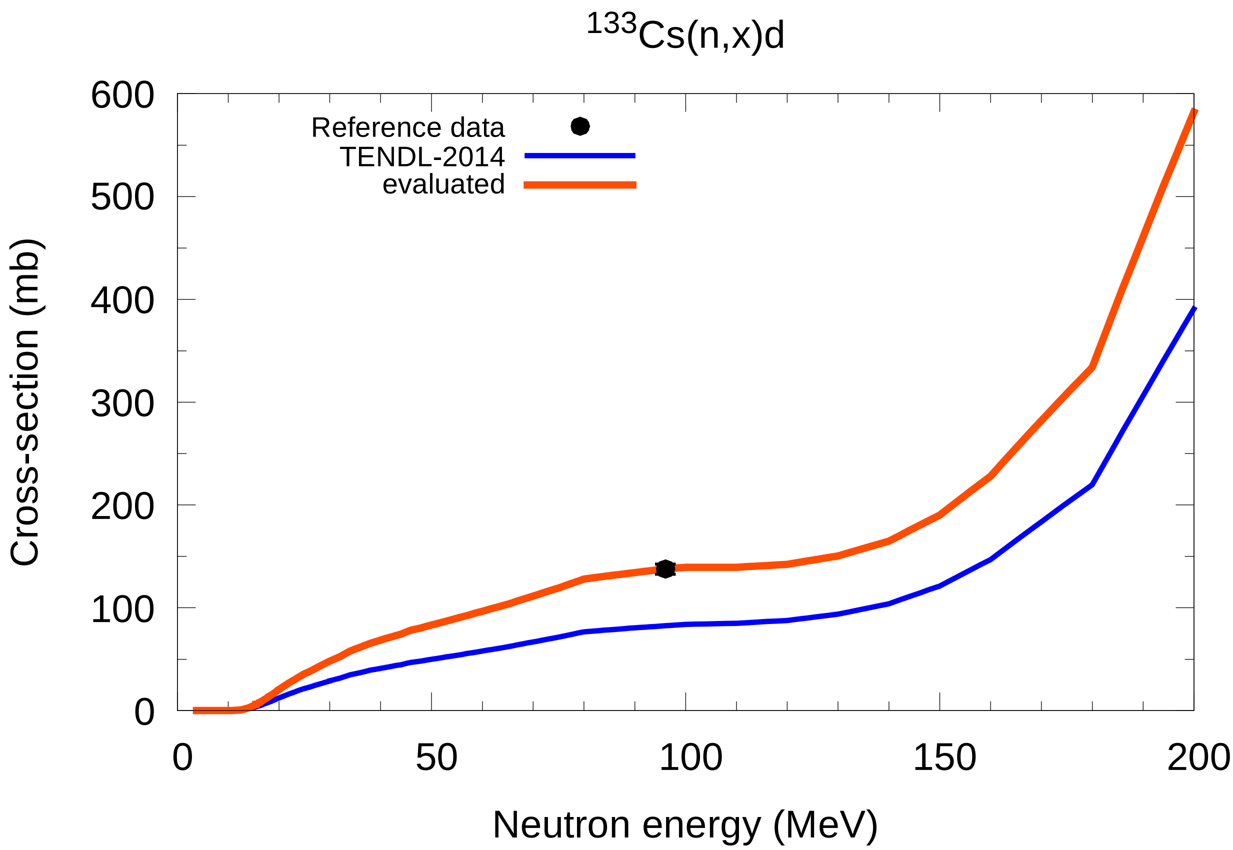

132Xe(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500
0
50
100
150
200



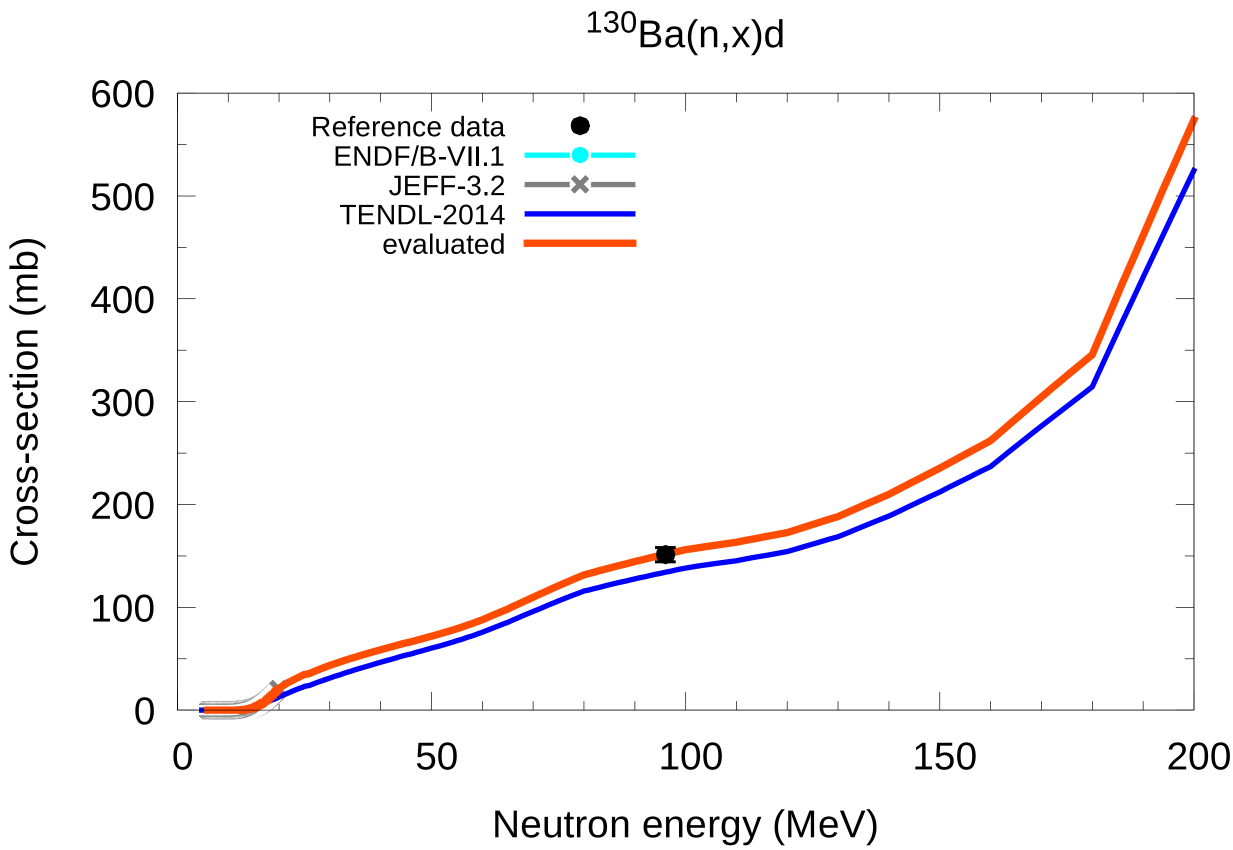
$^{134}Xe(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



$^{136}Xe(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



^{133}Cs(n,x)d
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



^{130}Ba(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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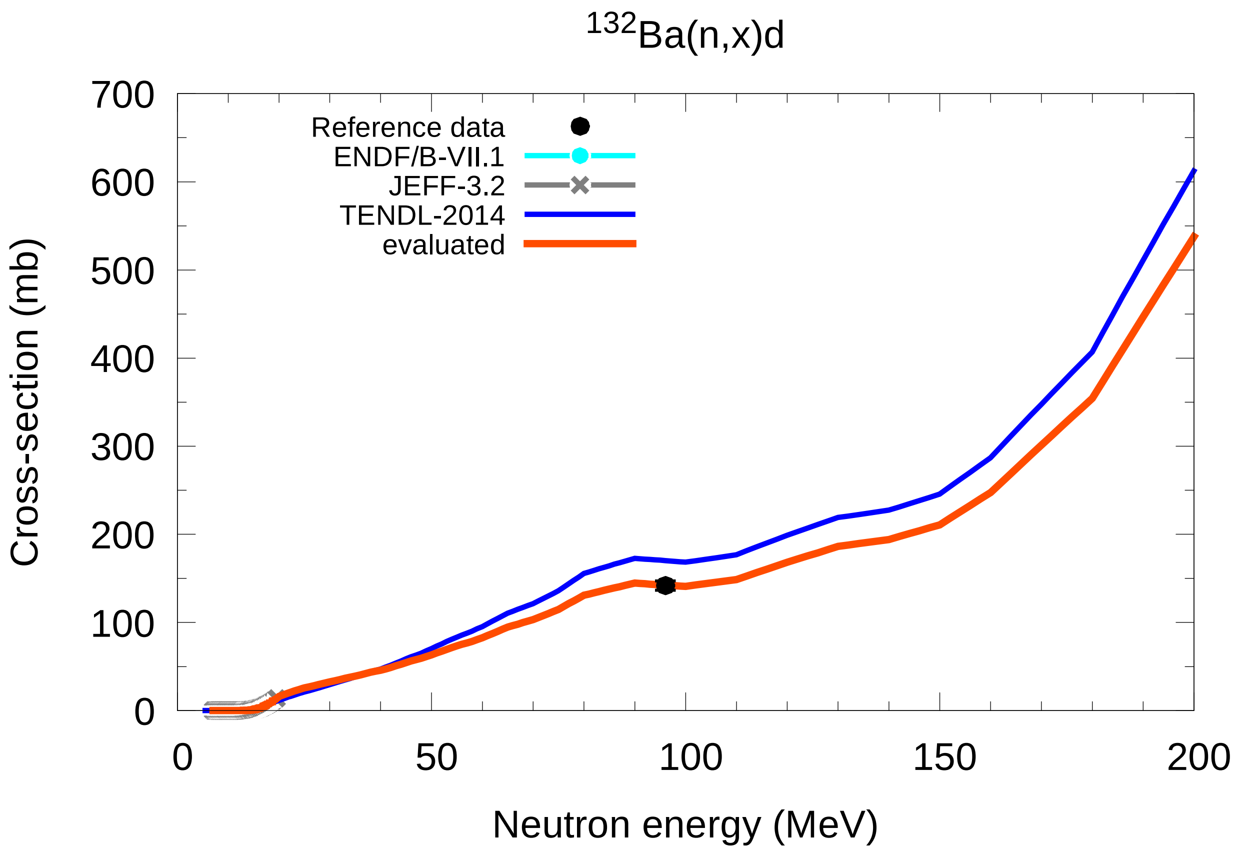
200
300
400
500
600
0
50
100
150
200



^{132}Ba(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
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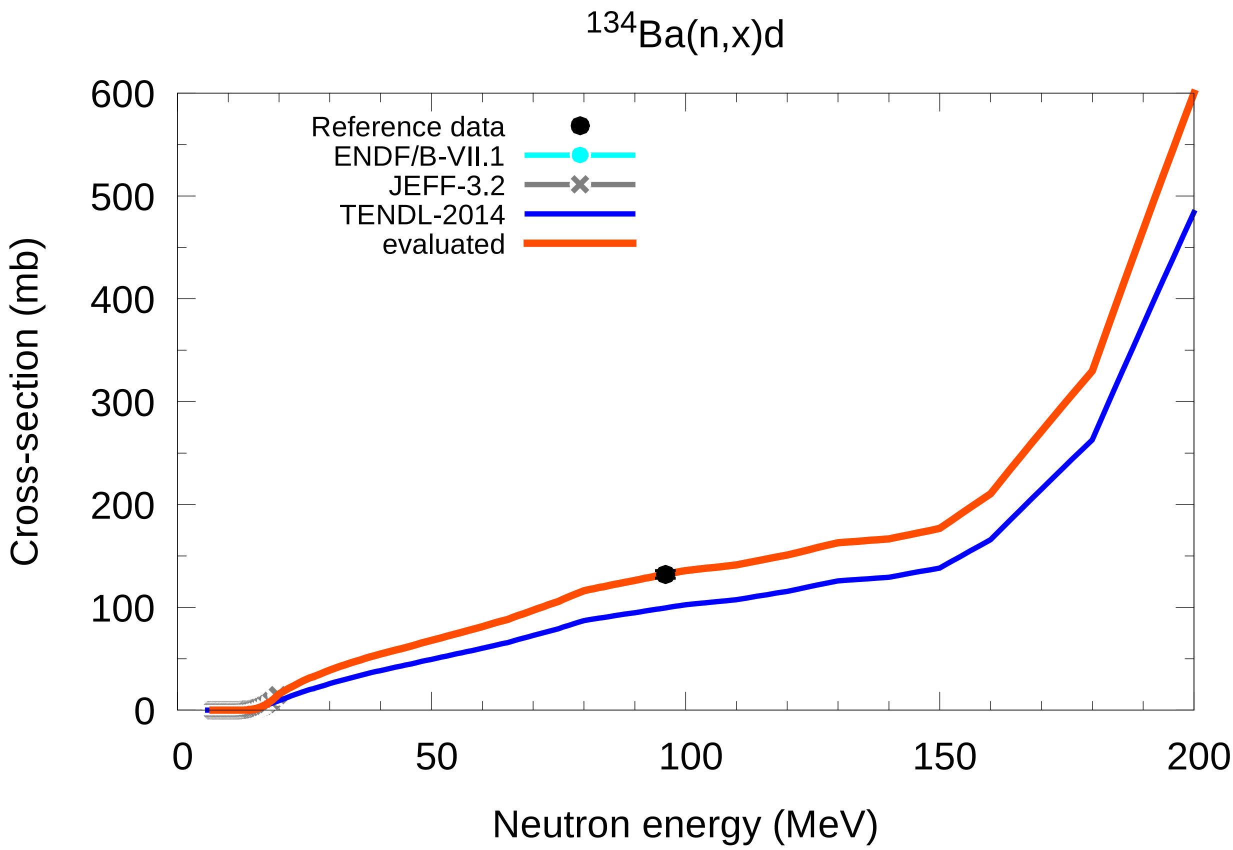
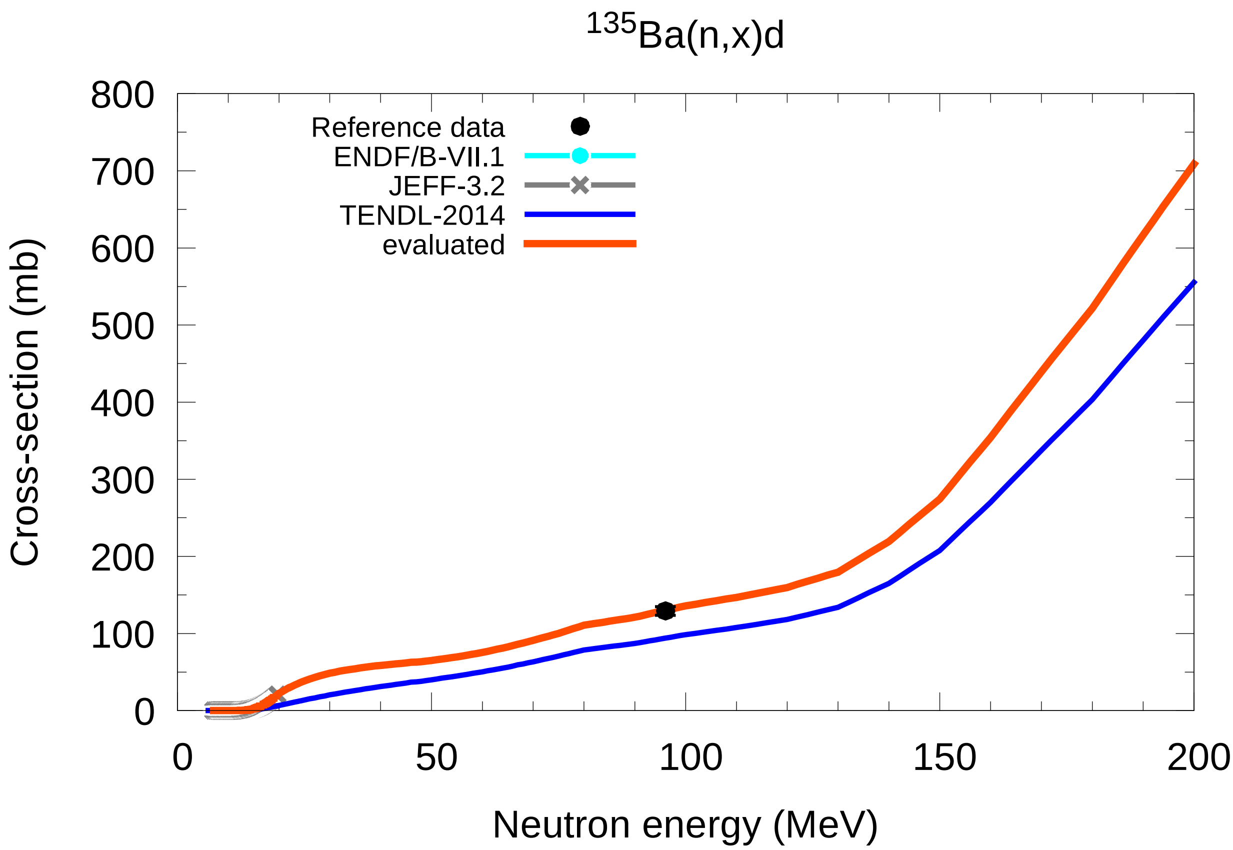
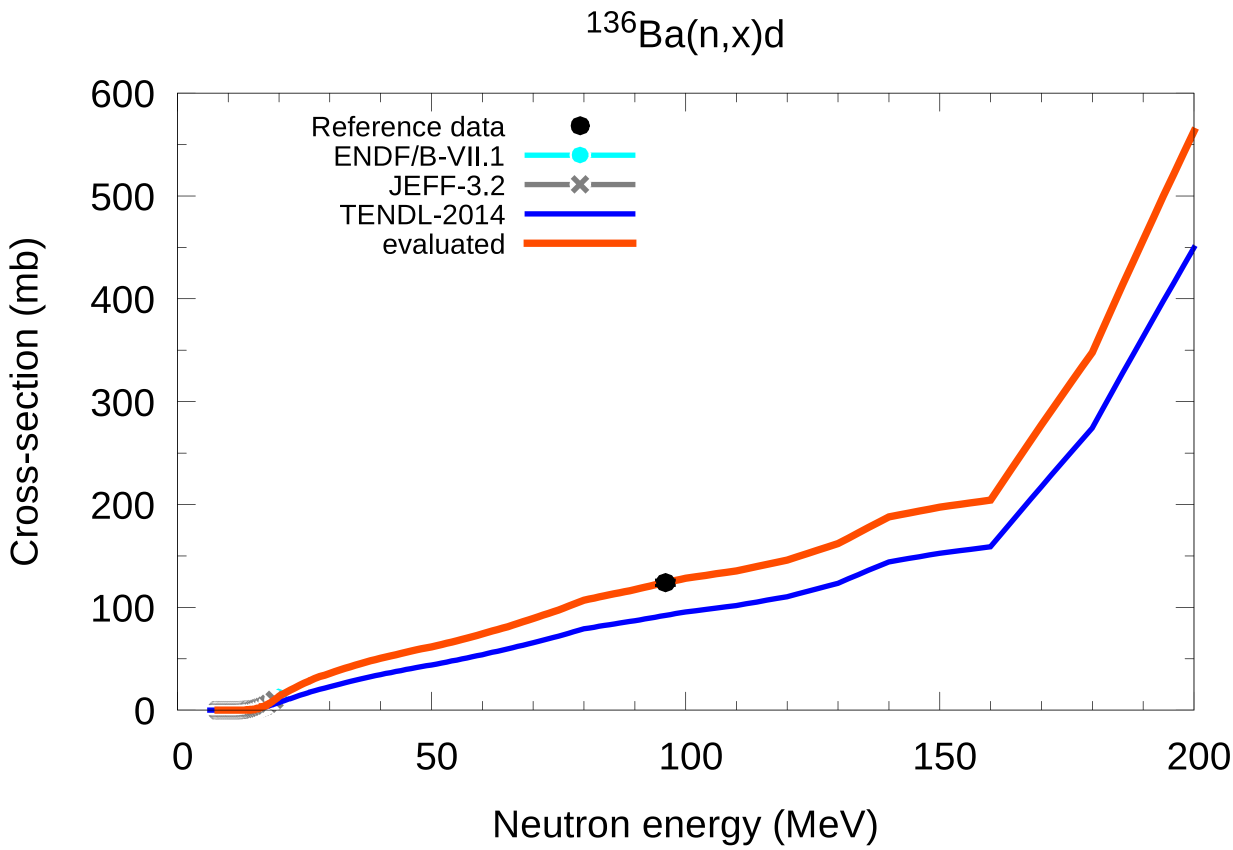
150
200



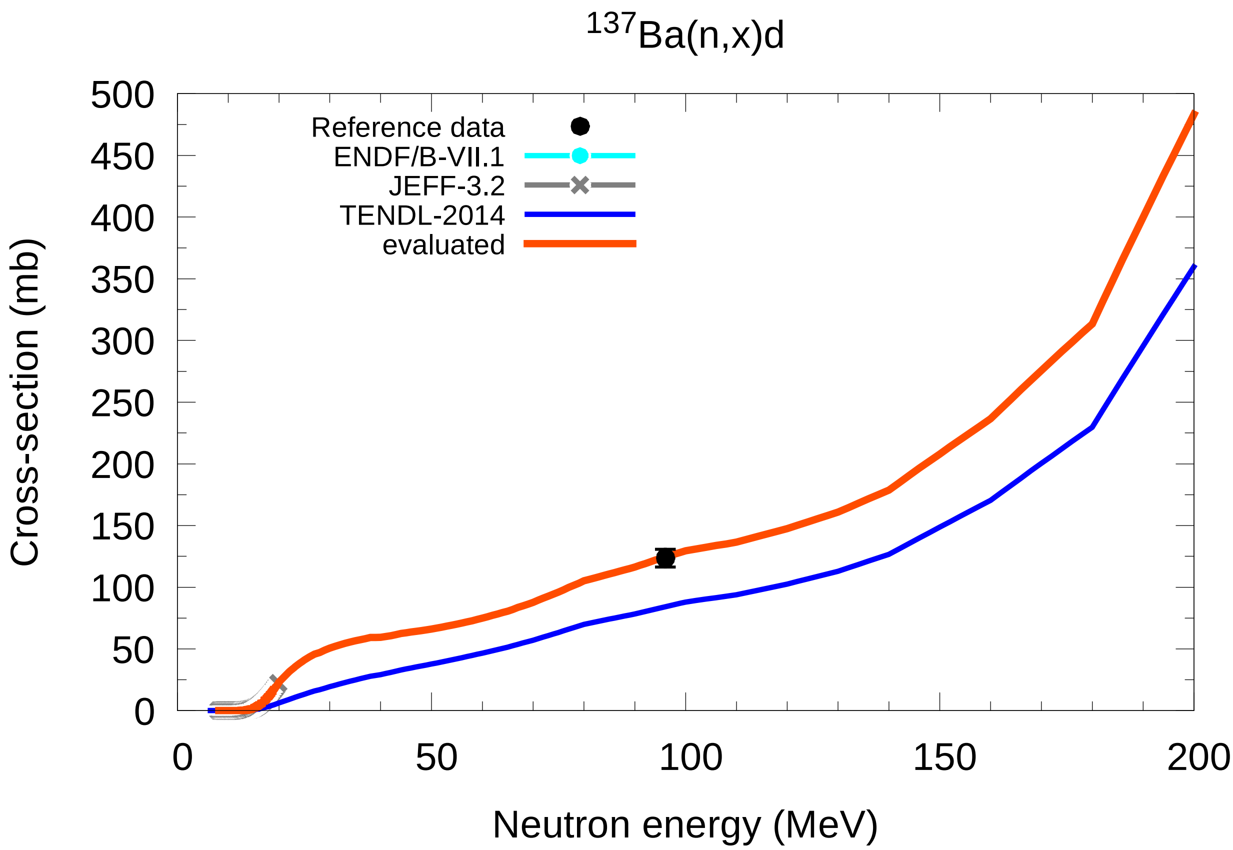
^{134}Ba(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200

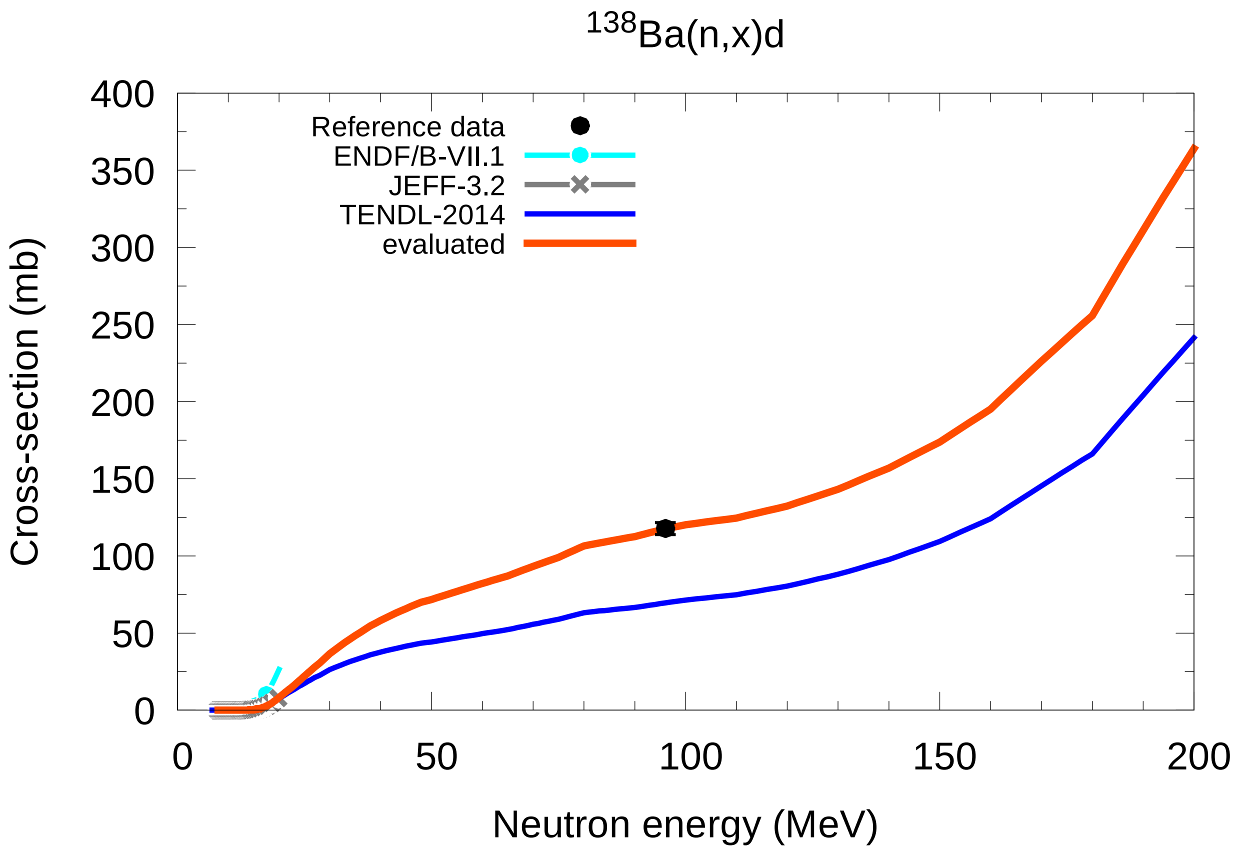


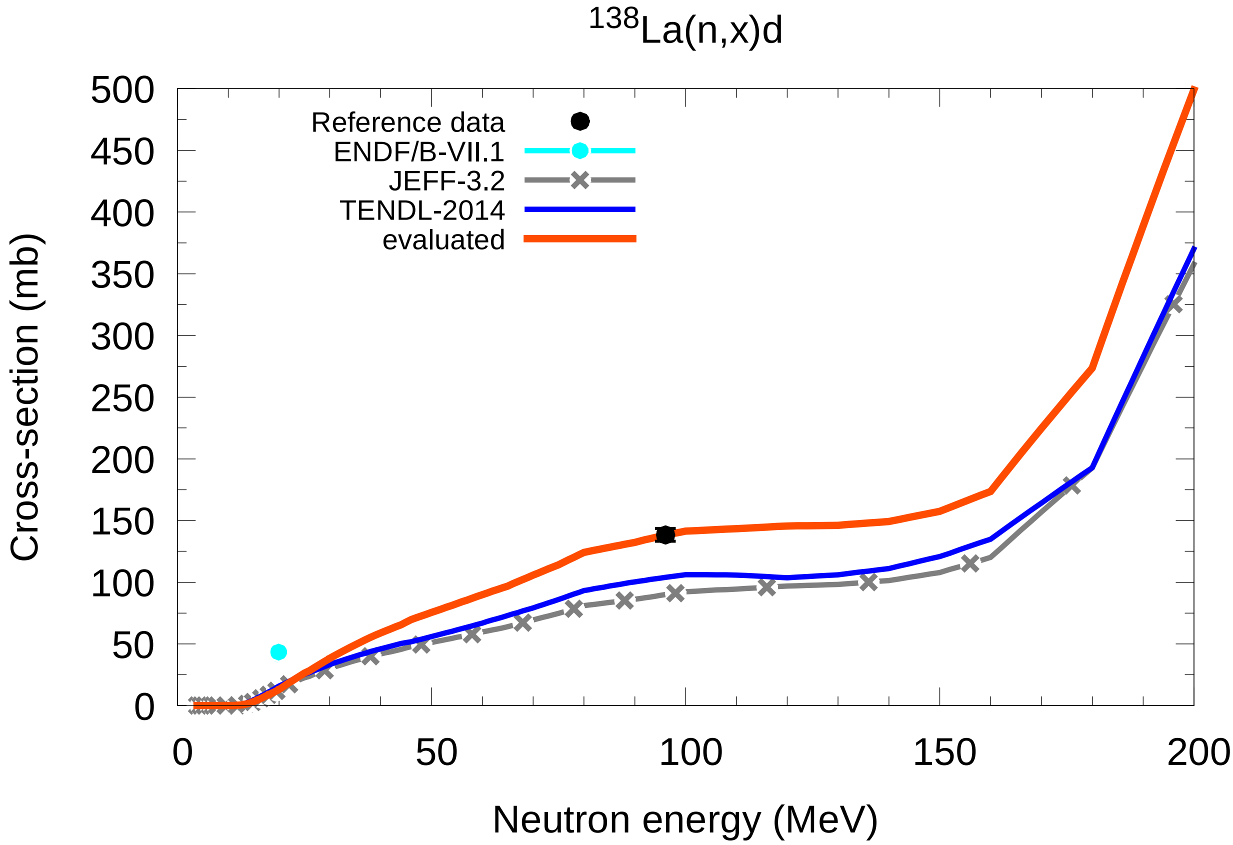
^{135}Ba(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
0
50
100
150
200



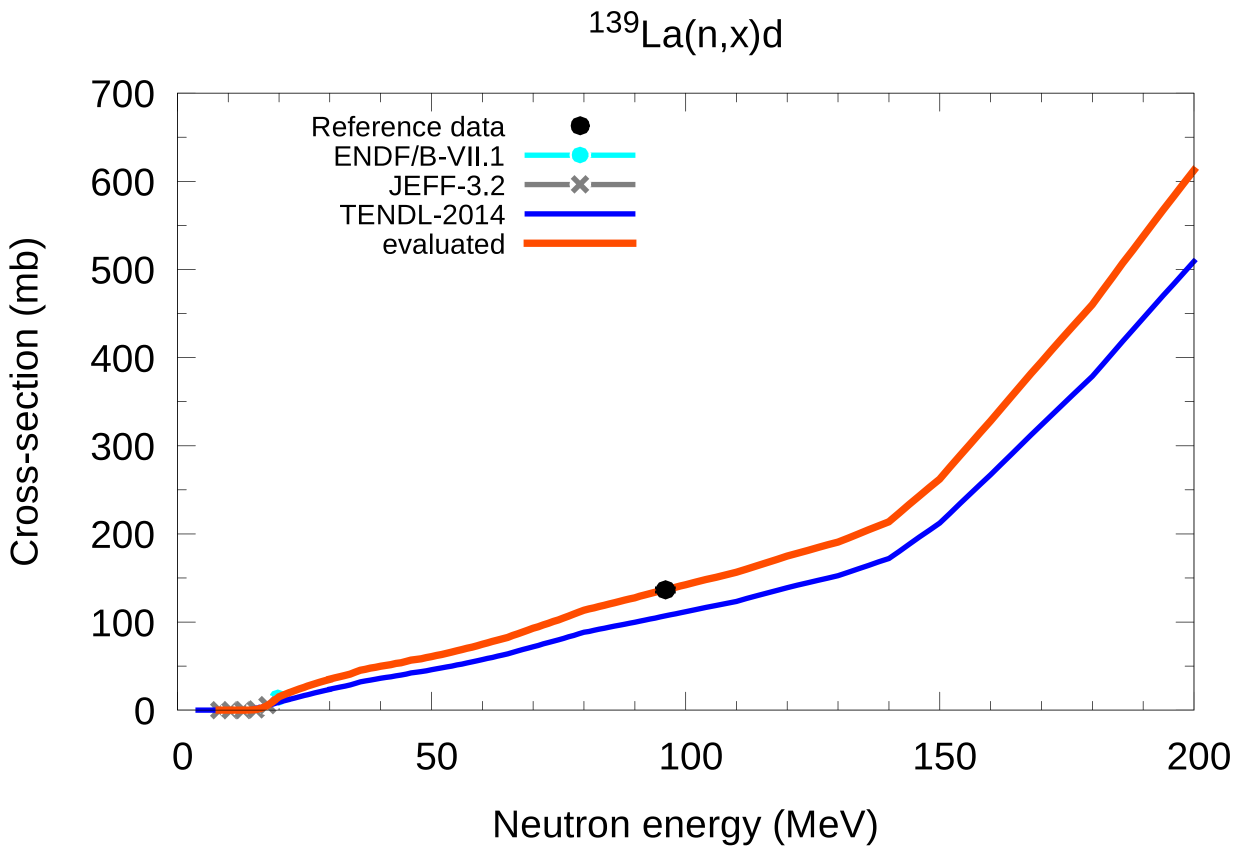
^{136}Ba(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200


^{137}Ba(n,x)d
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300
350
400
450
500

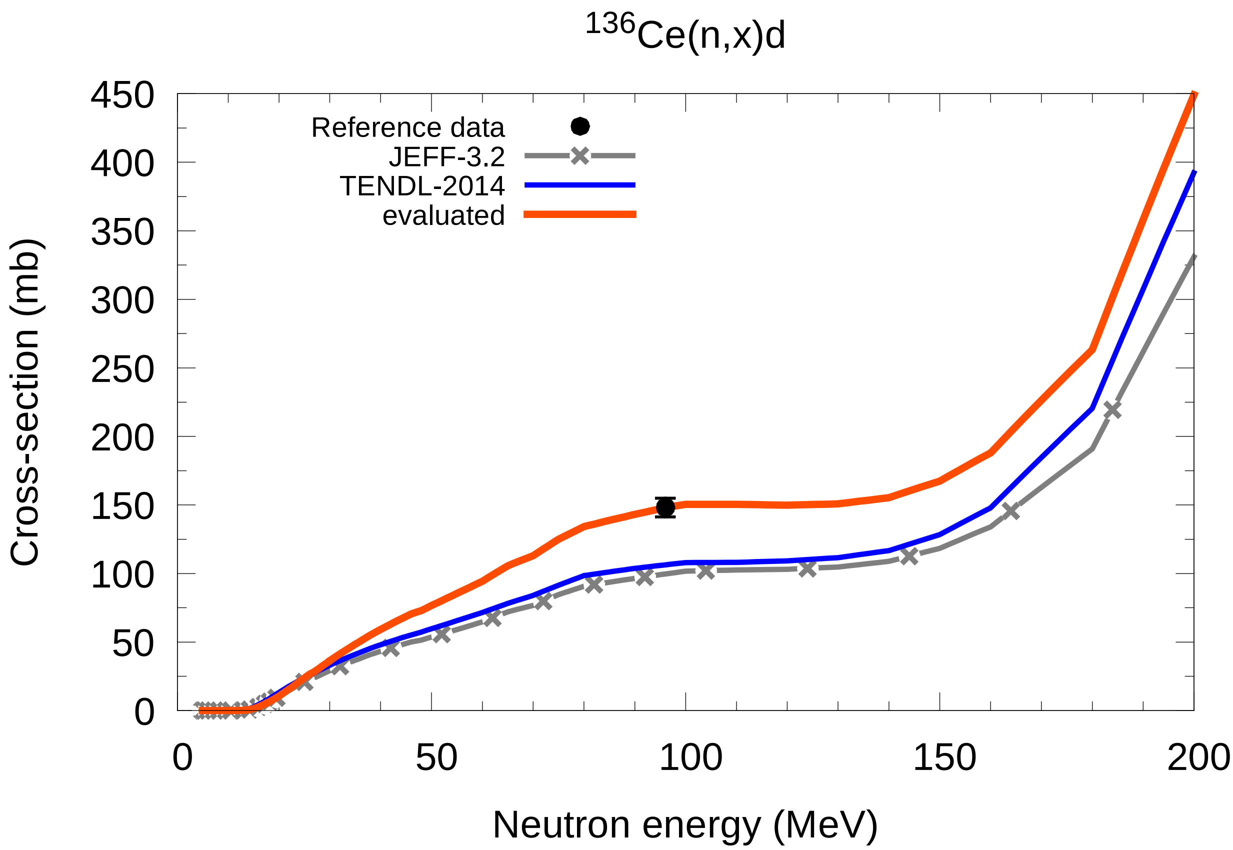

^{138}Ba(n,x)d
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300
350
400



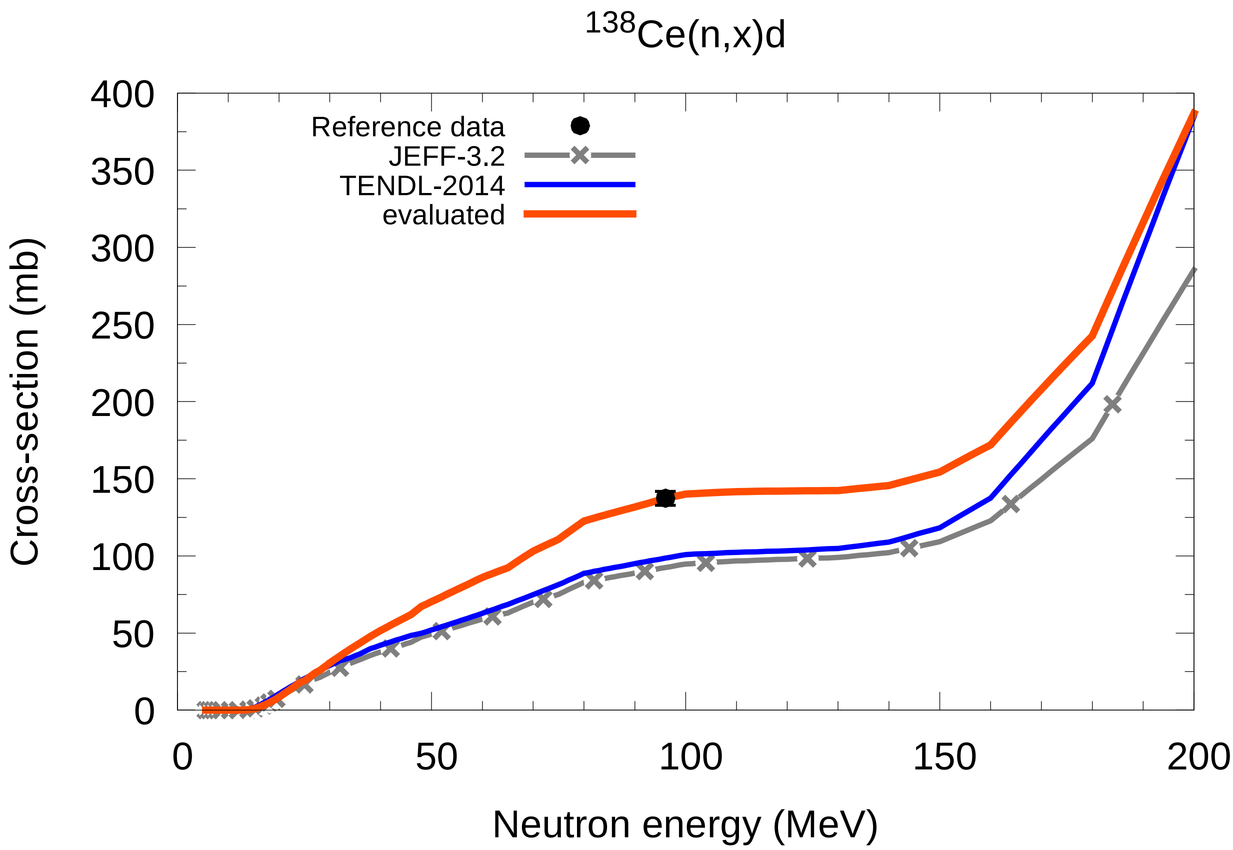
^{138}La(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



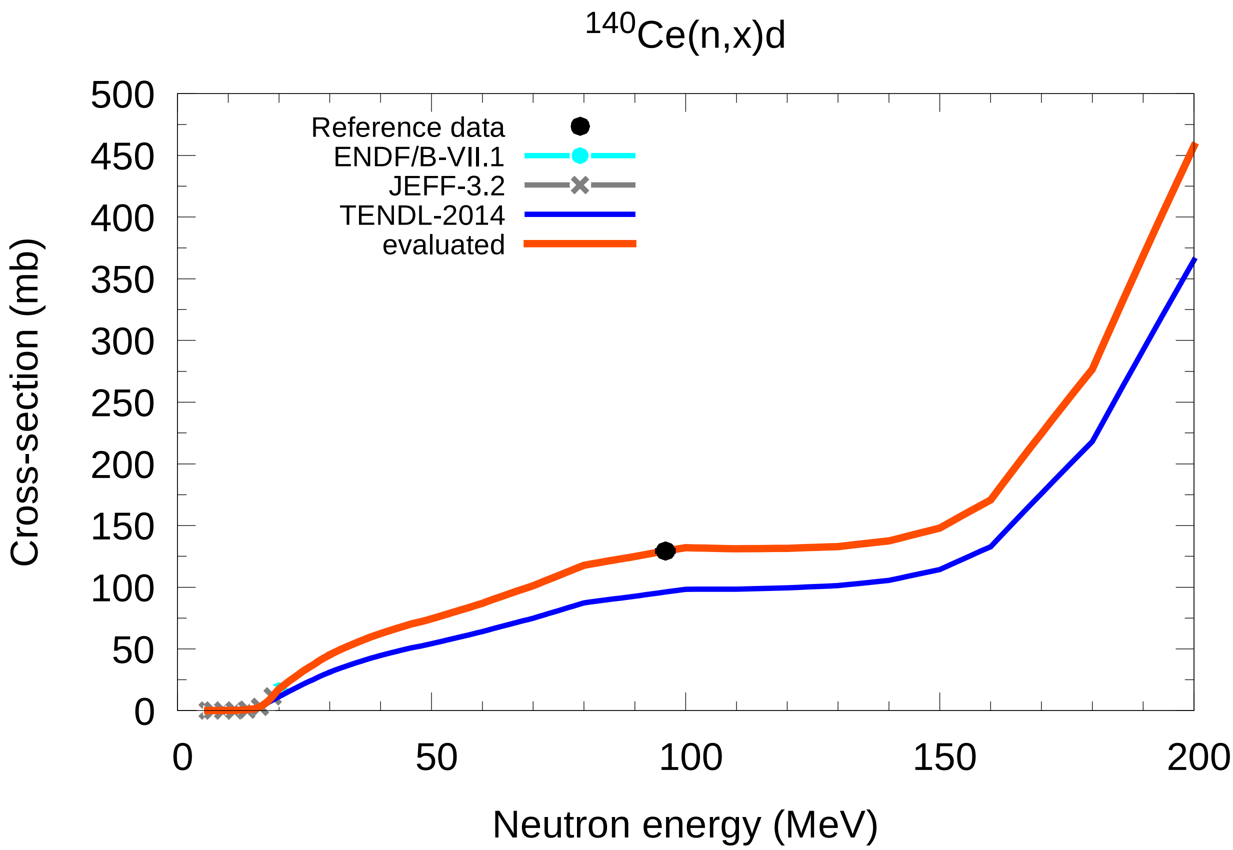
^{139}La(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700



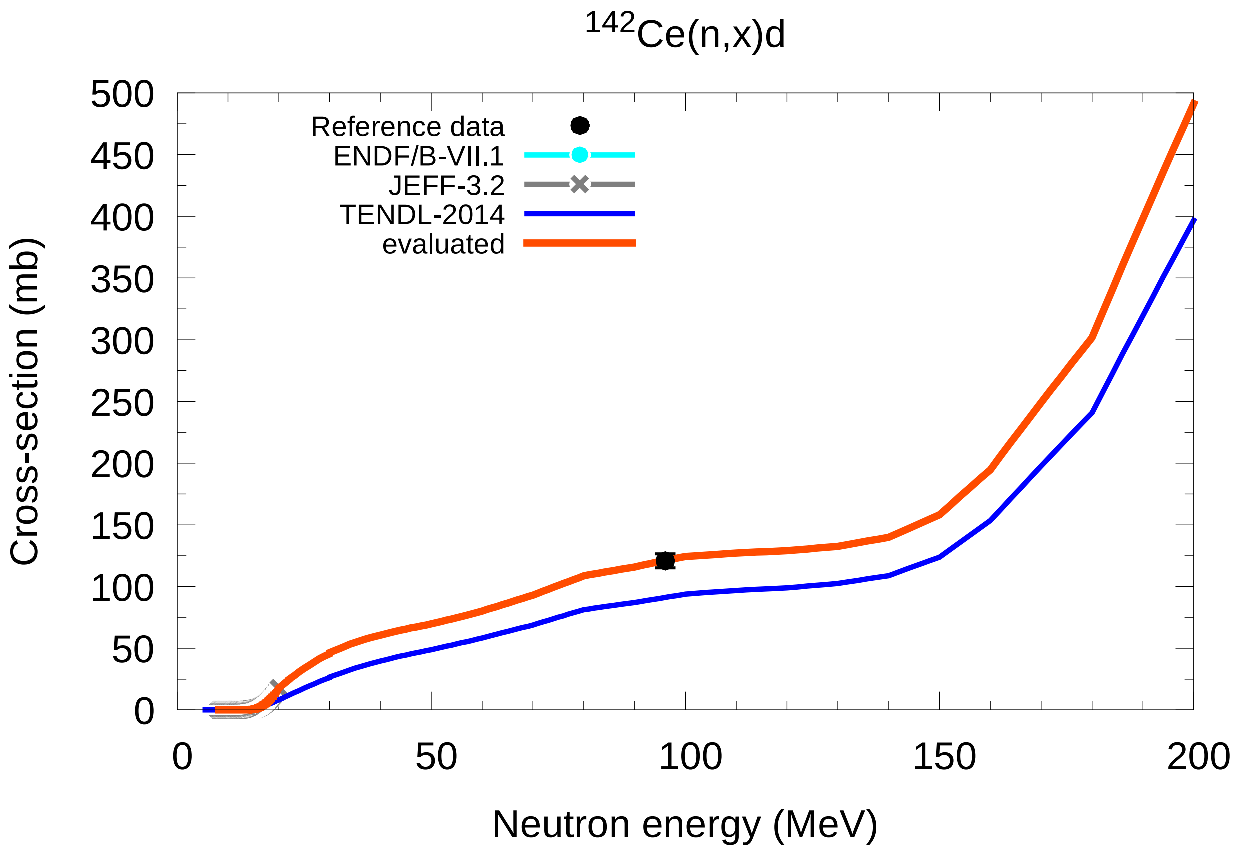
^{136}Ce(n,x)d
Cross-section (mb)
Neutron energy (MeV)
Reference data
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300
350
400
450



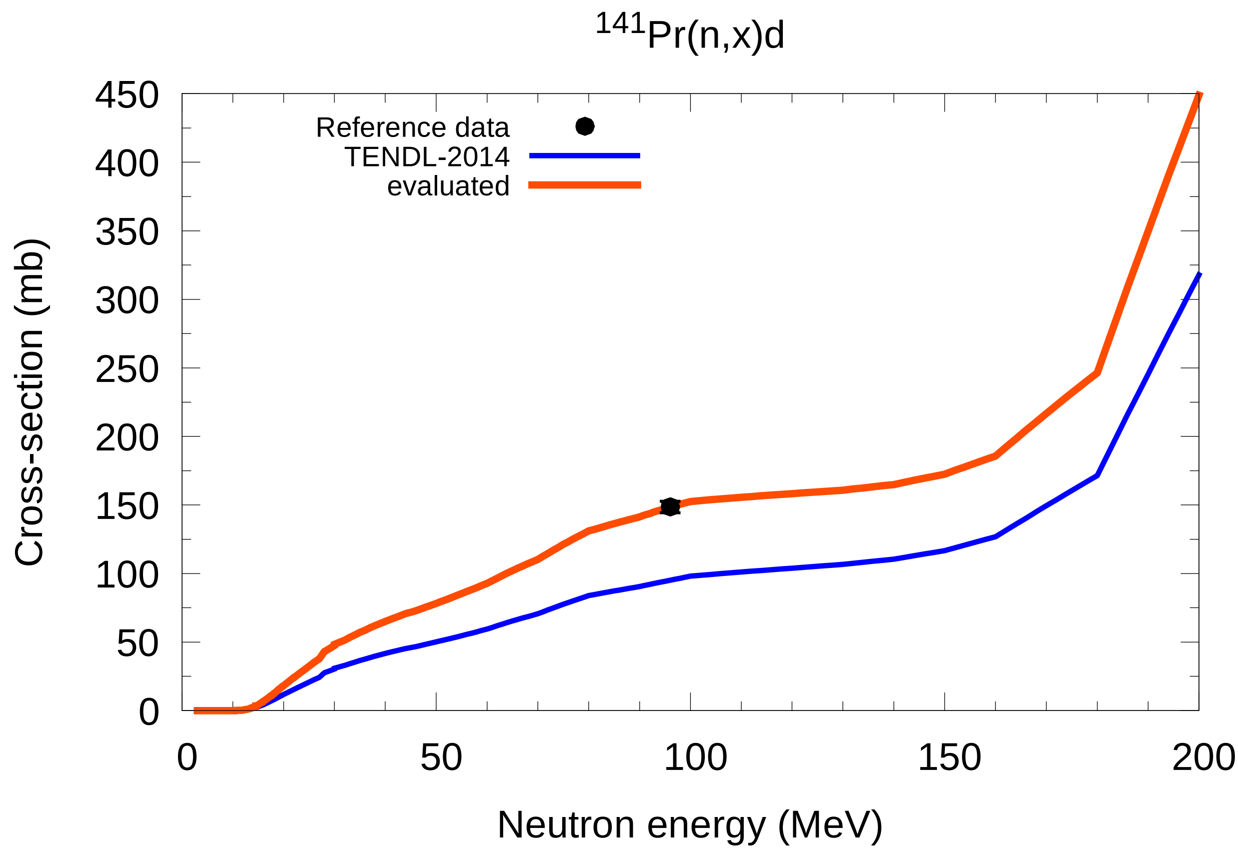
^{138}Ce(n,x)d
Cross-section (mb)
Neutron energy (MeV)
Reference data
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300
350
400

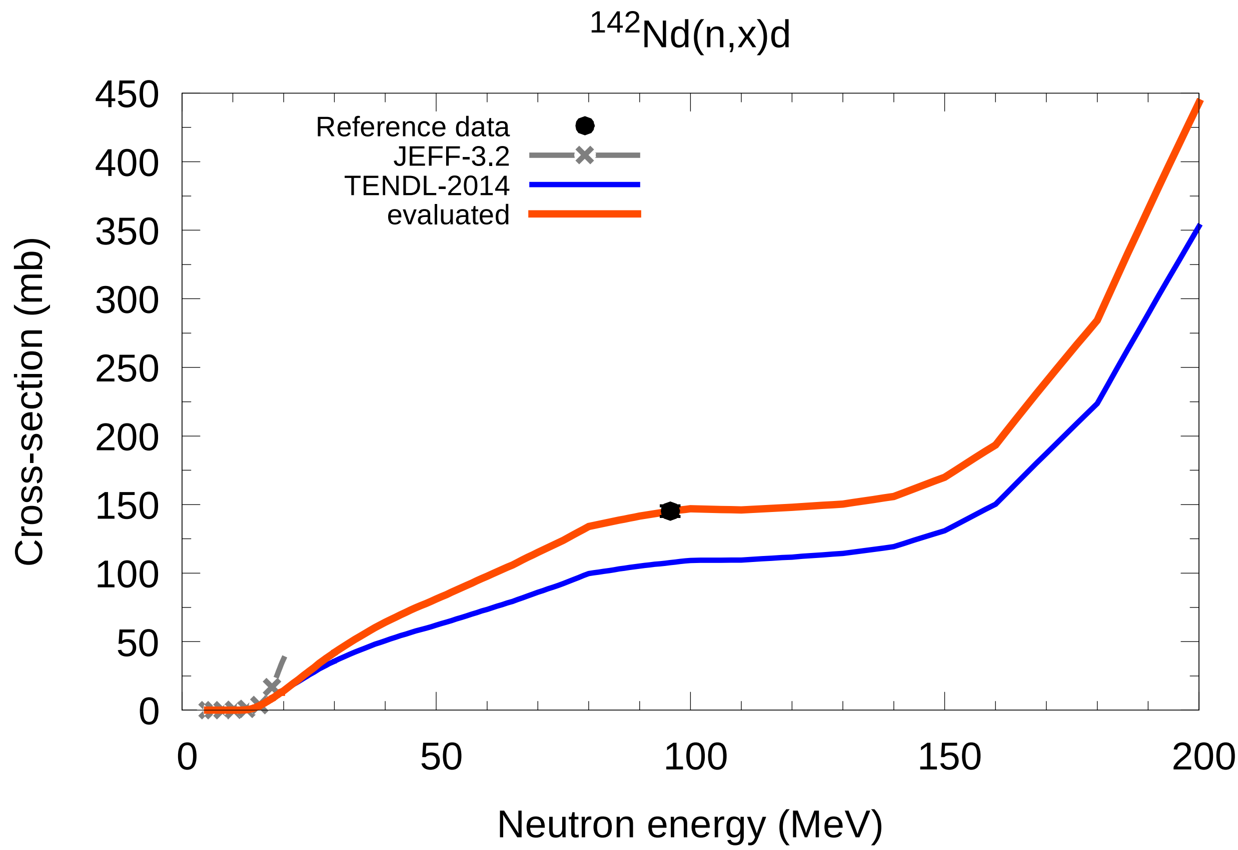


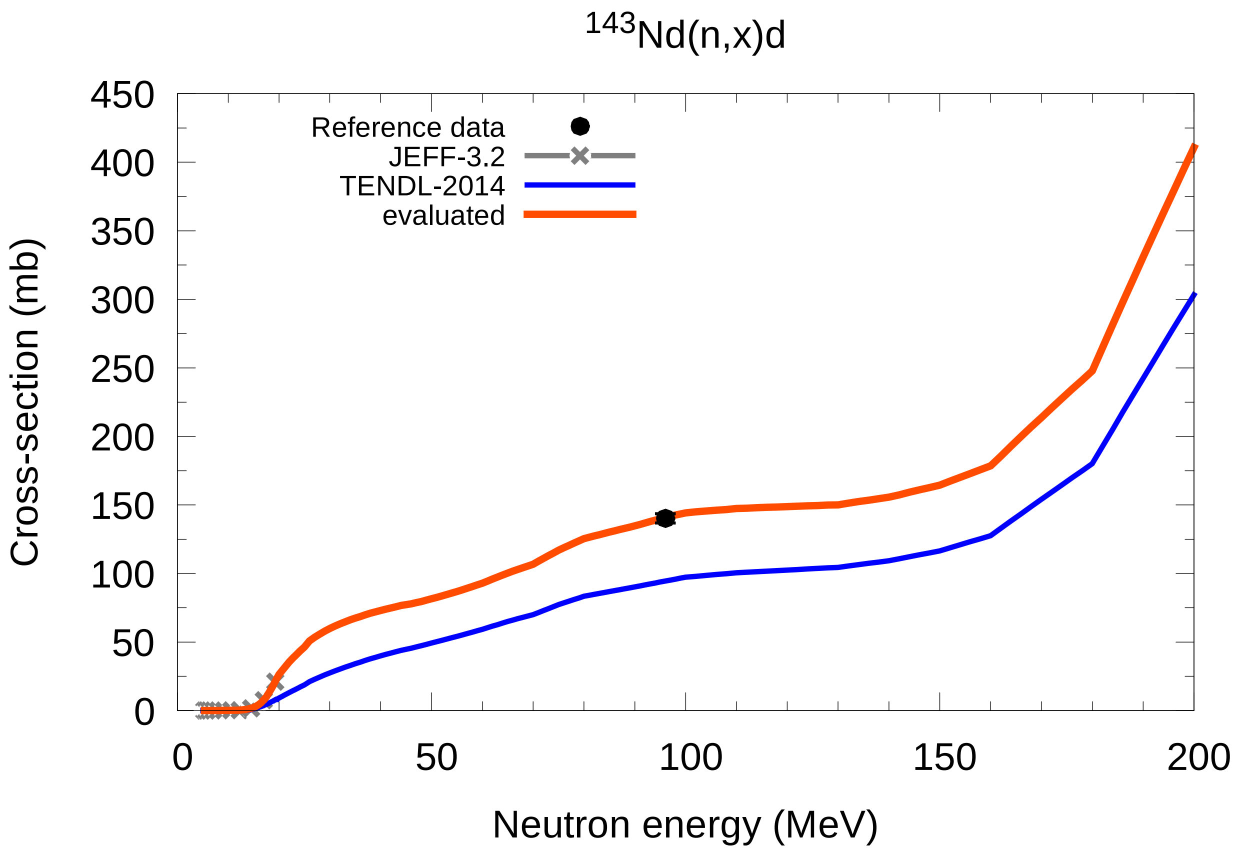
$^{140}Ce(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



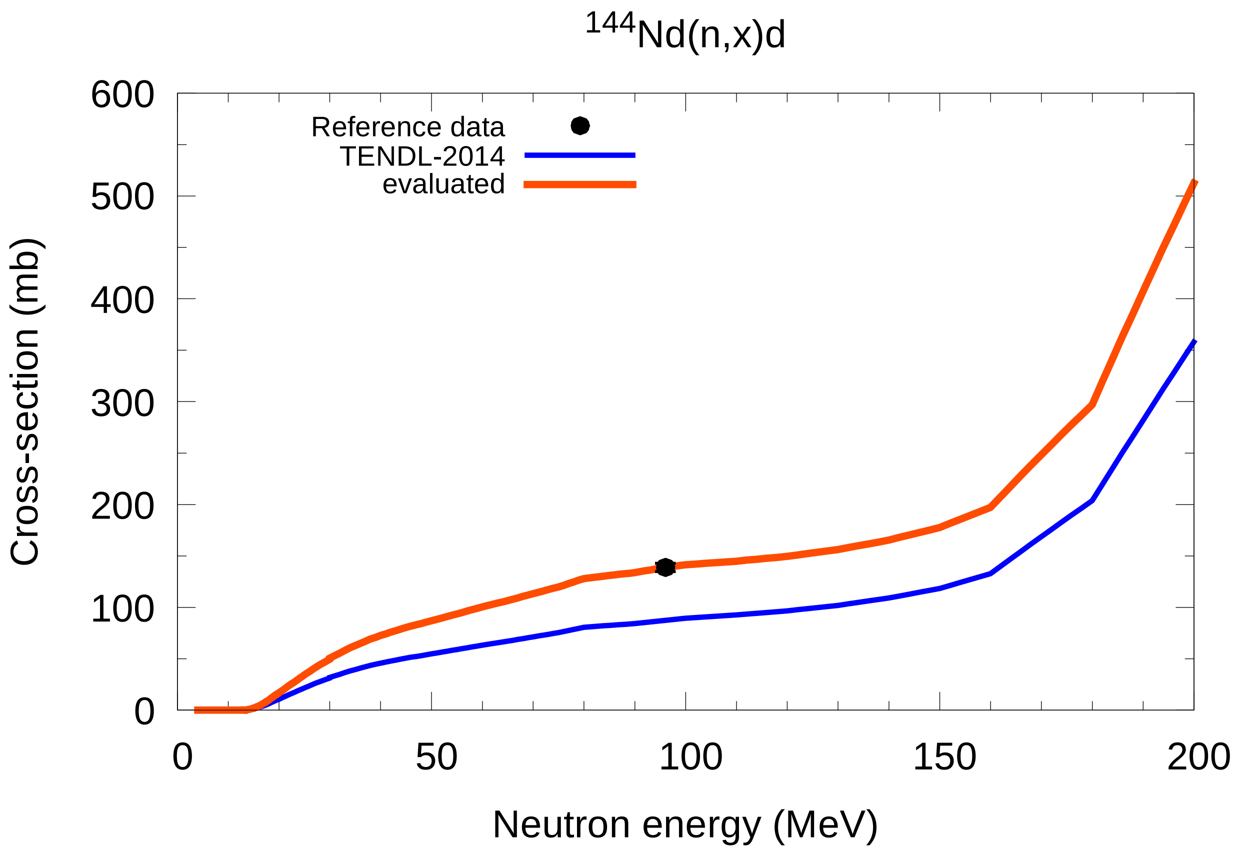
$^{142}Ce(n,x)d$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500


141Pr(n,x)d
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450

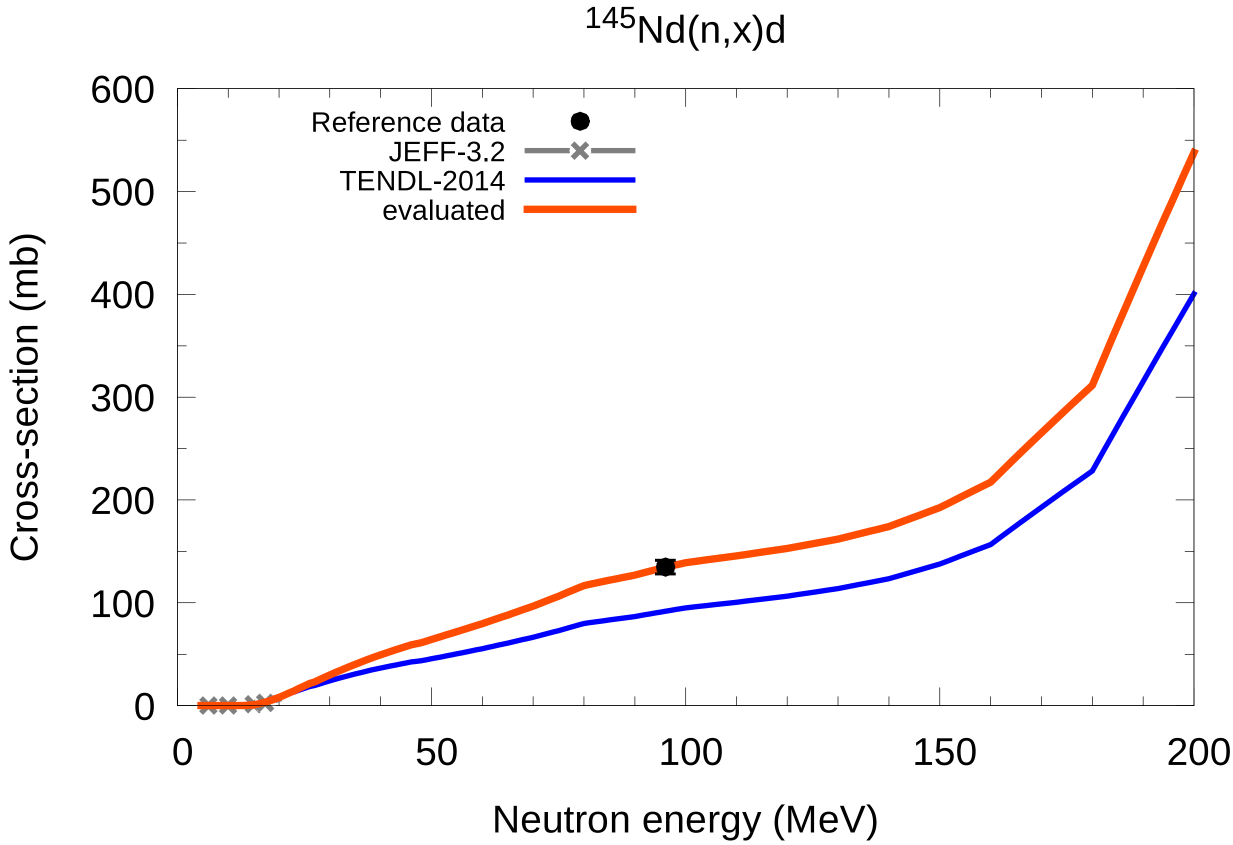

142Nd(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



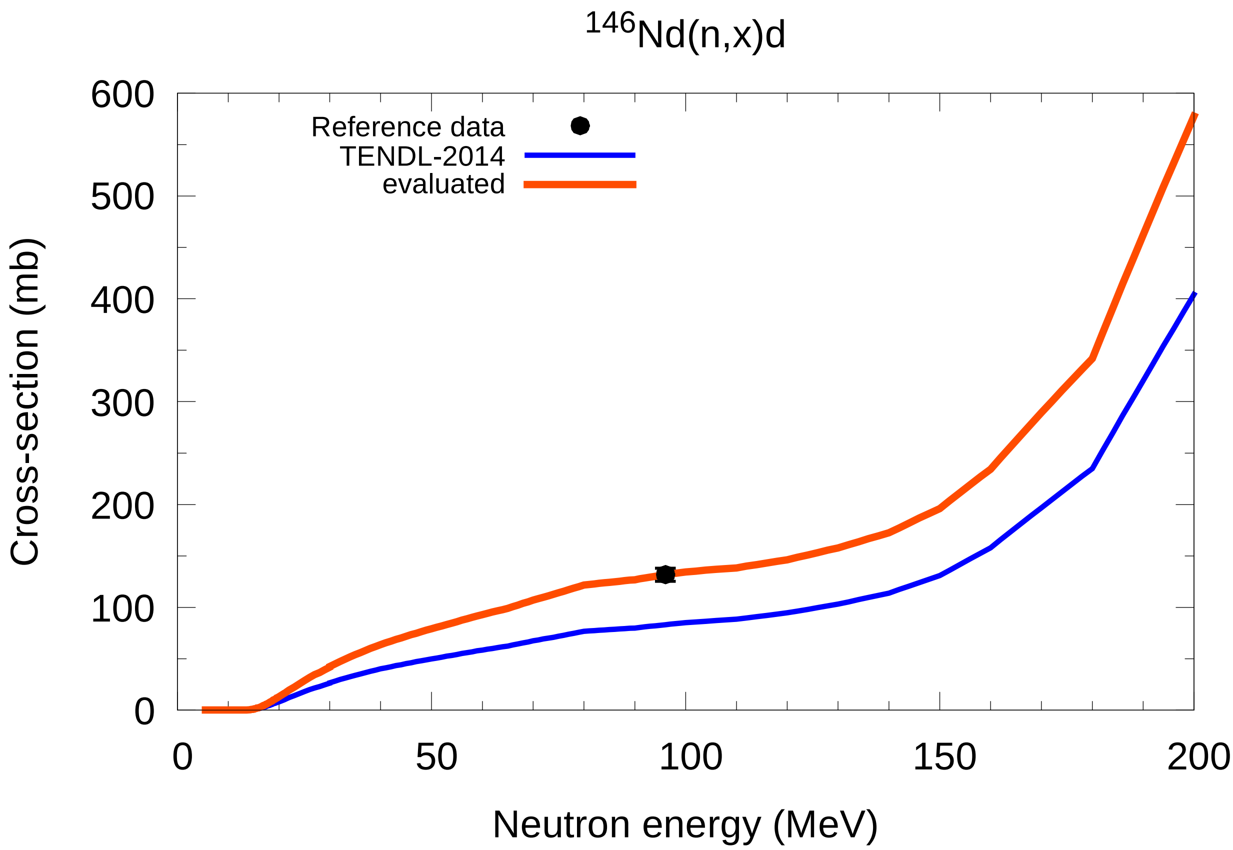
143Nd(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
0
50
100
150
200



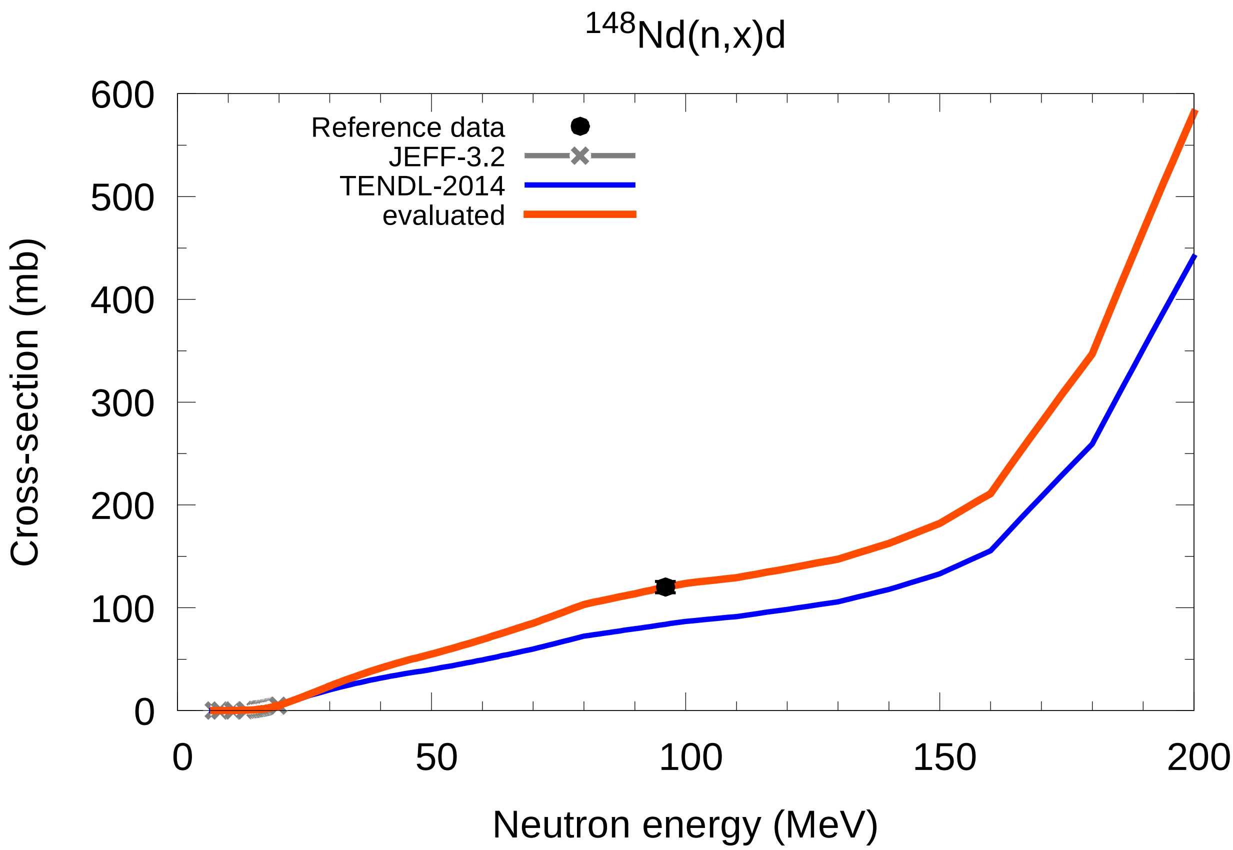
144Nd(n,x)d
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



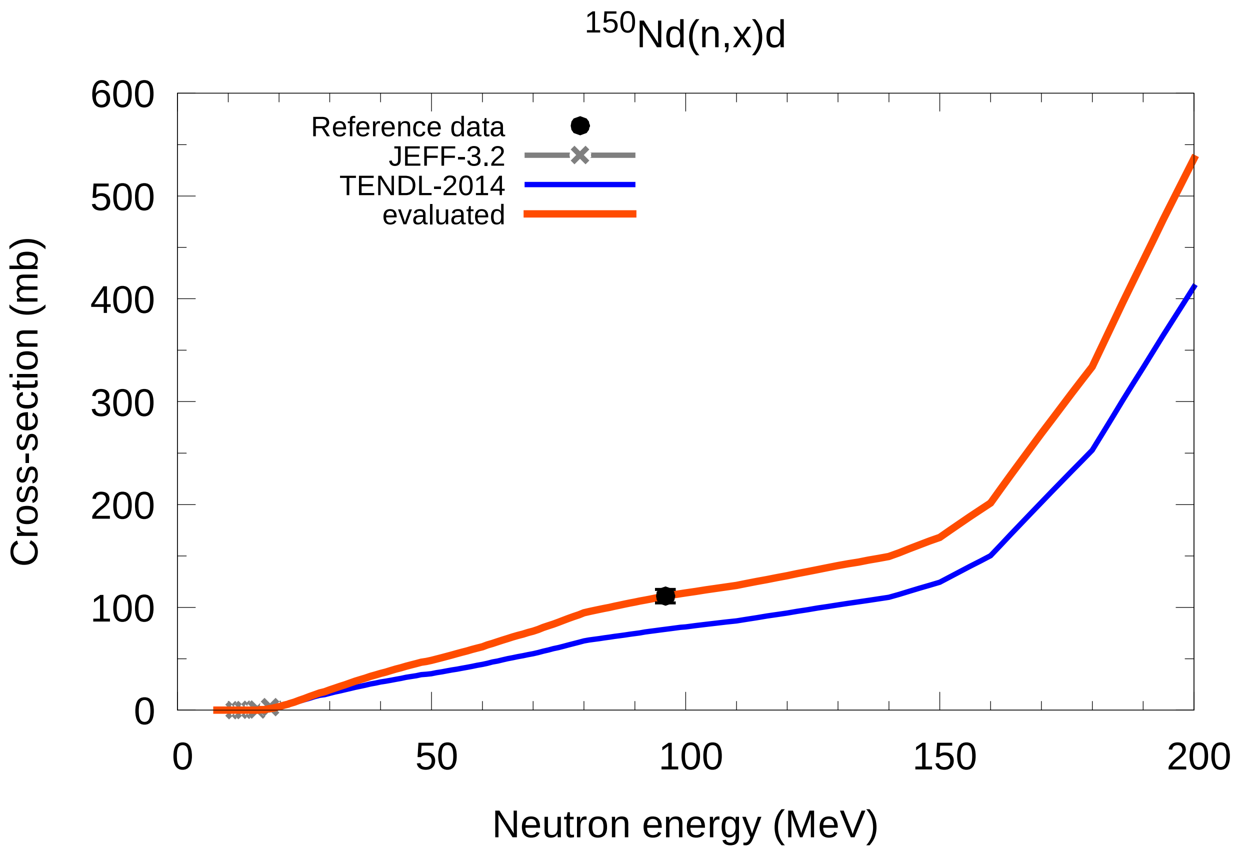
^{145}Nd(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



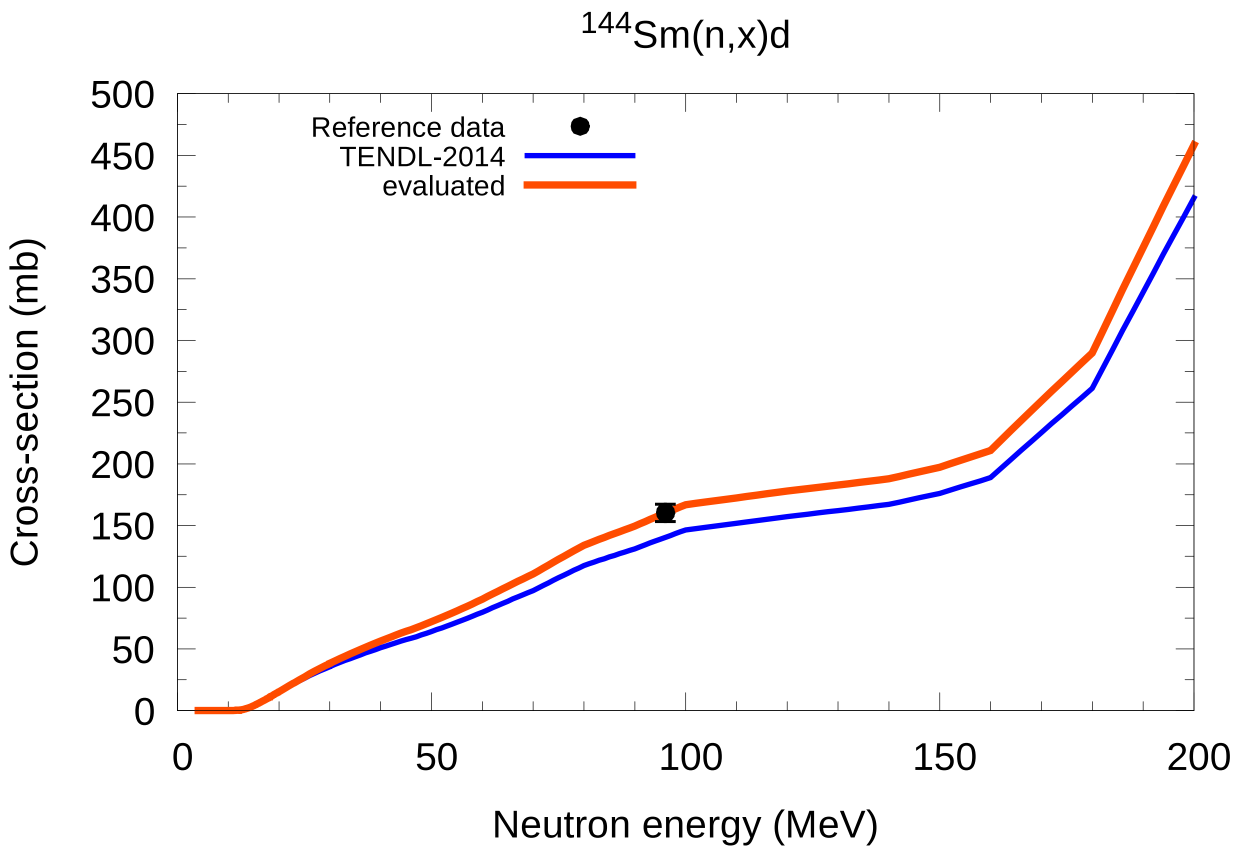
^{146}Nd(n,x)d
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



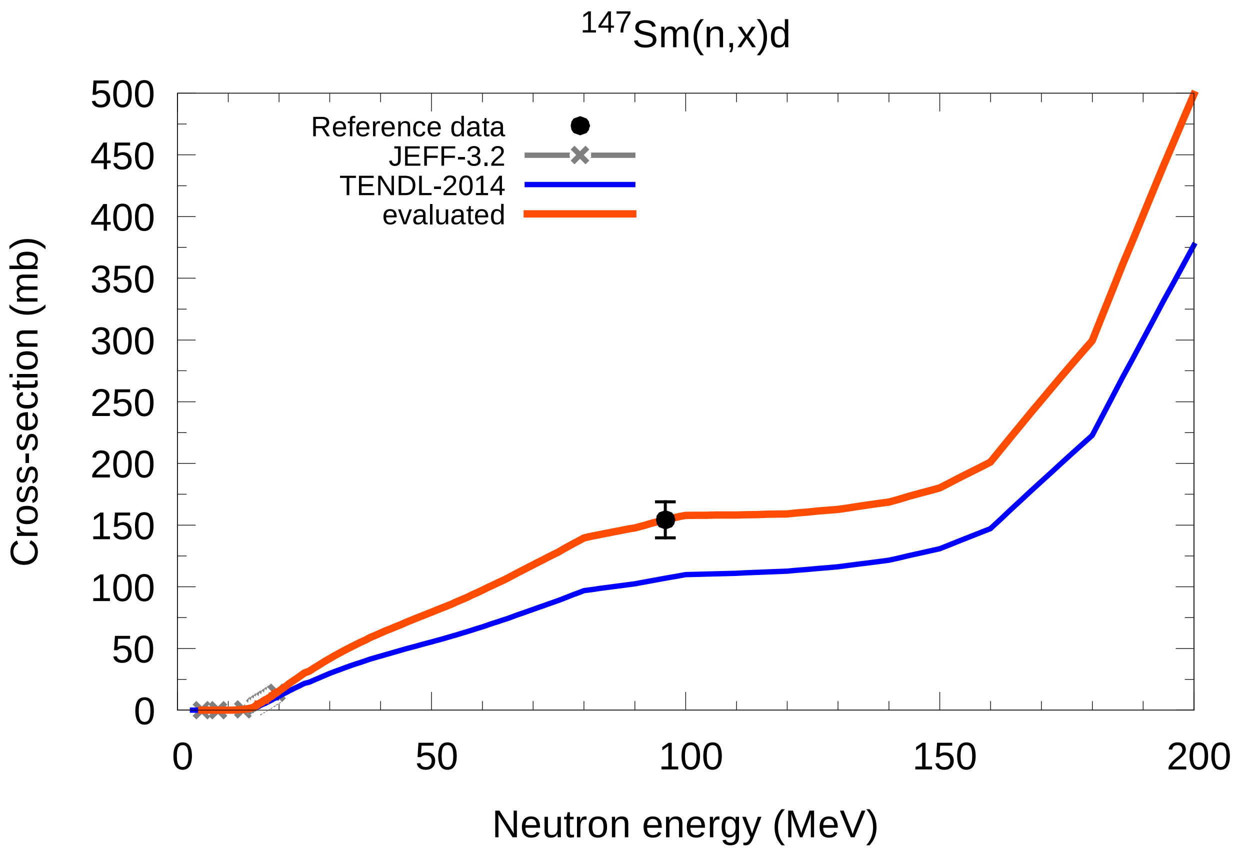
148Nd(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)



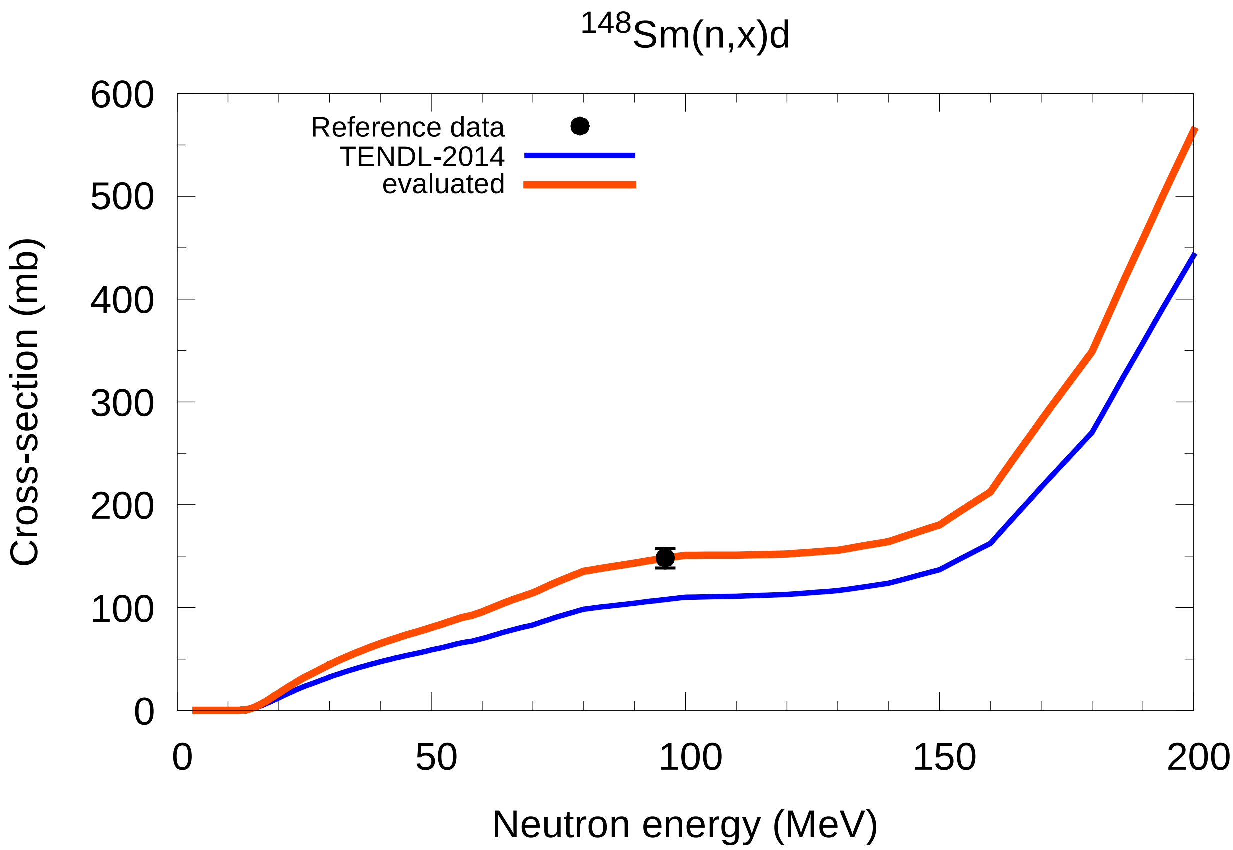
150Nd(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)



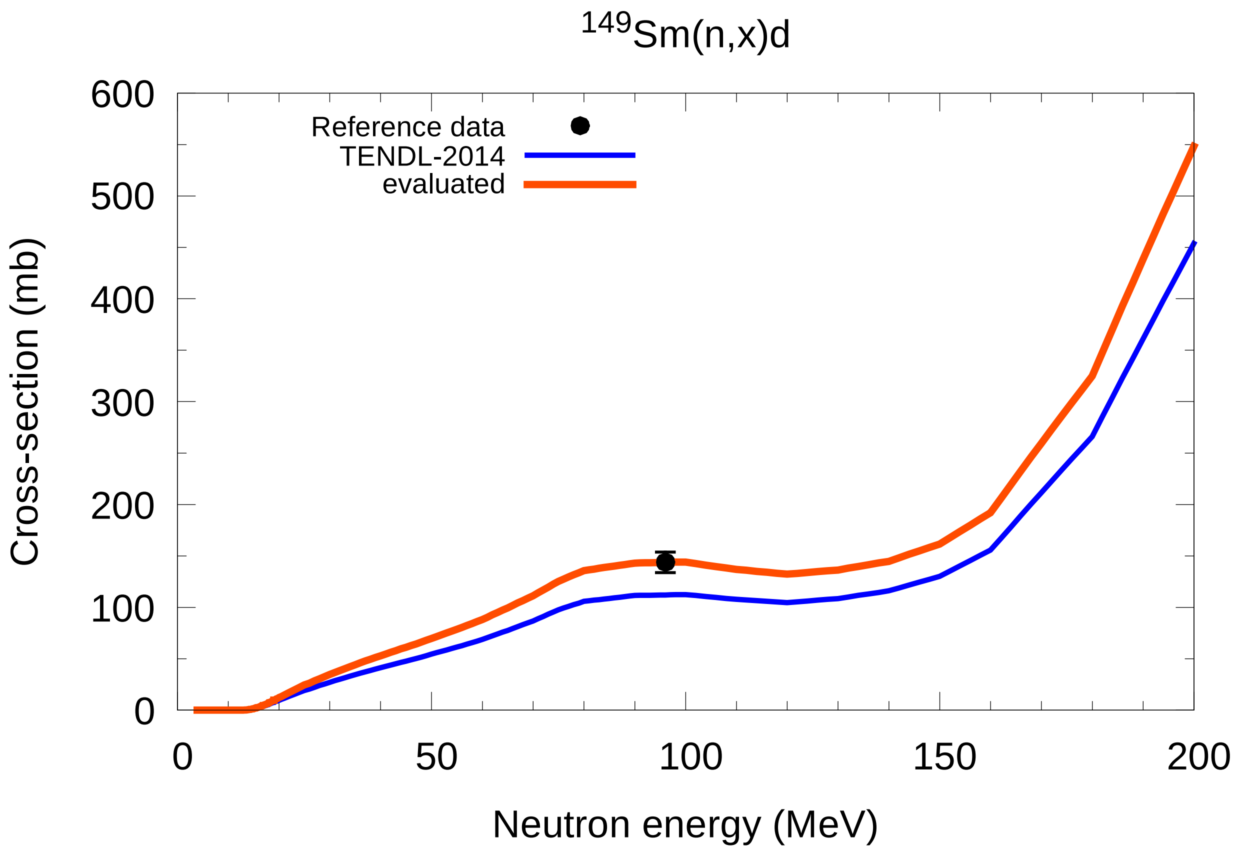
^{144}Sm(n,x)d
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



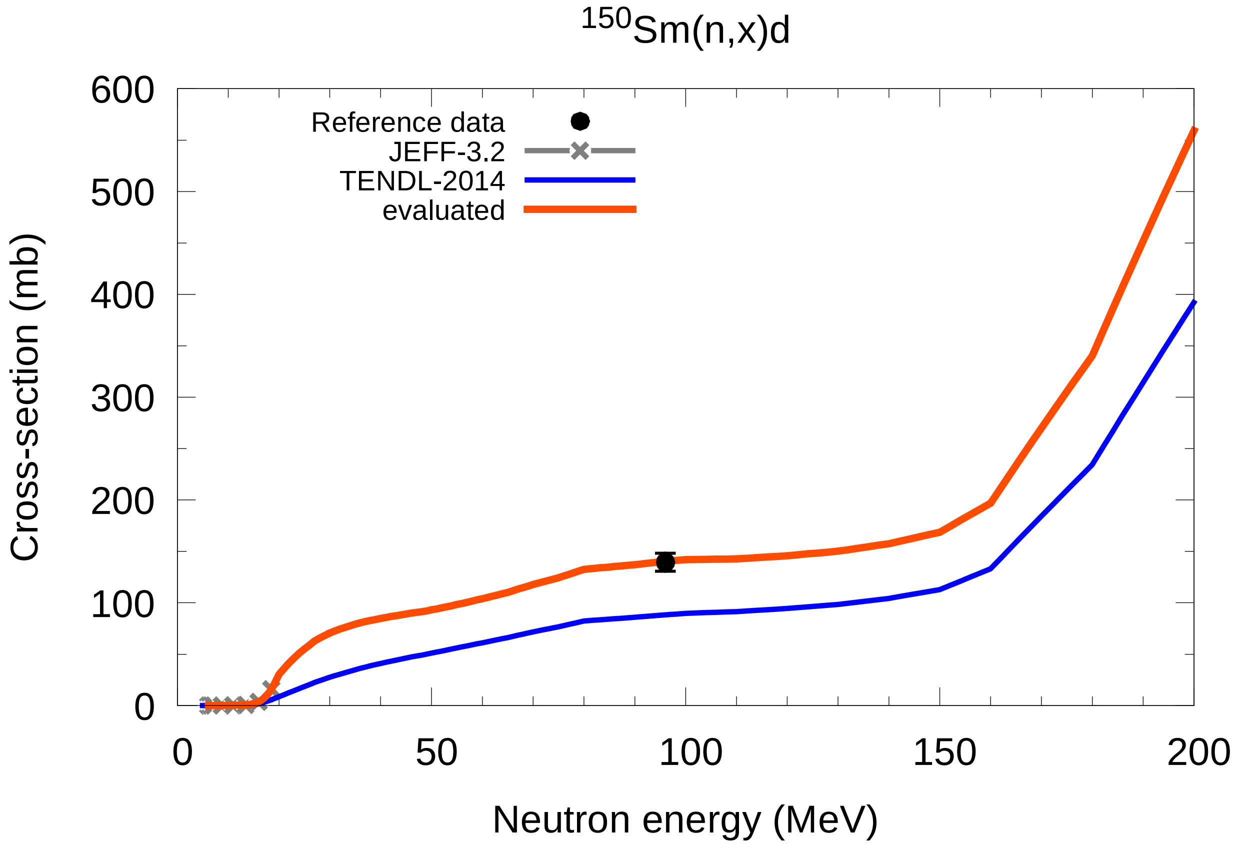
^{147}Sm(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



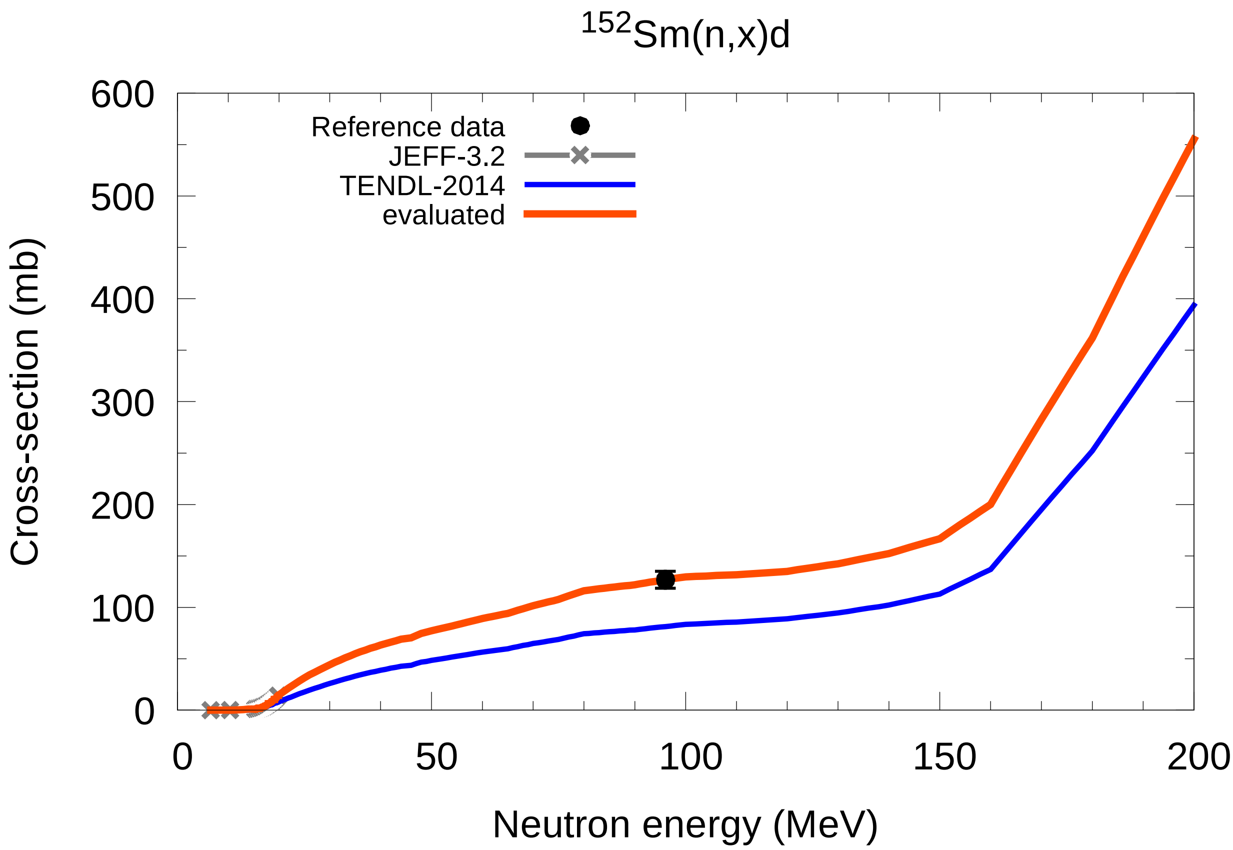
^{148}Sm(n,x)d
Reference data
TENDL-2014
evaluated
600
500
400
300
200
100
0
0
50
100
150
200
Cross-section (mb)
Neutron energy (MeV)



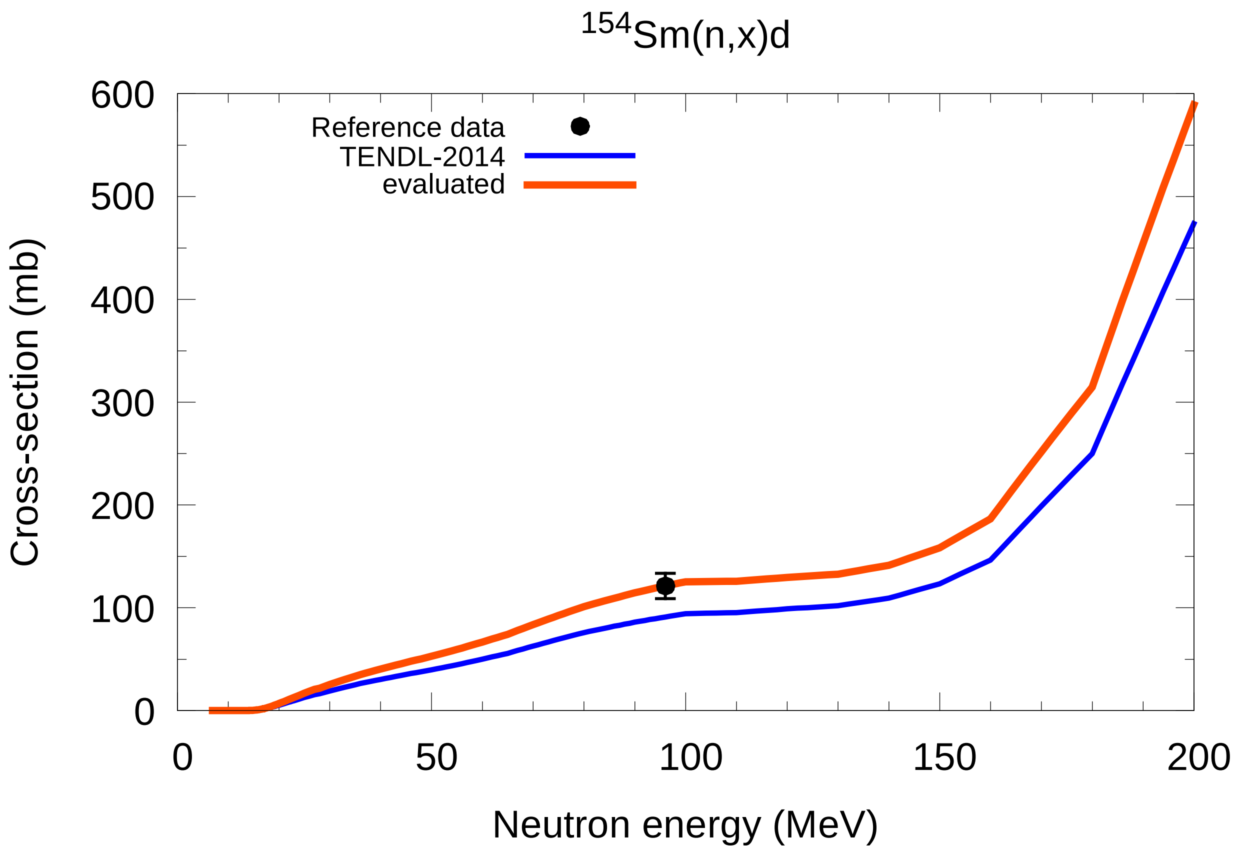
^{149}Sm(n,x)d
Reference data
TENDL-2014
evaluated
600
500
400
300
200
100
0
0
50
100
150
200
Cross-section (mb)
Neutron energy (MeV)



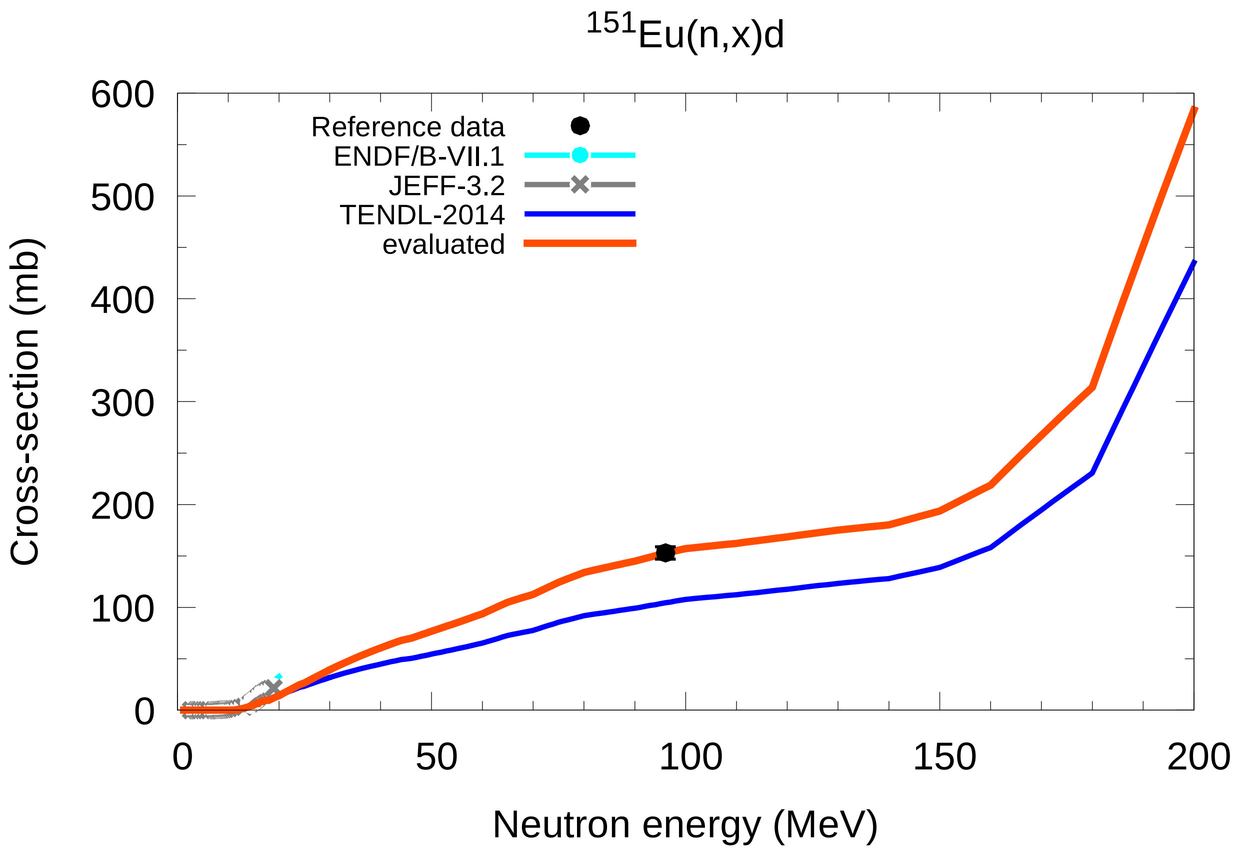
^{150}Sm(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



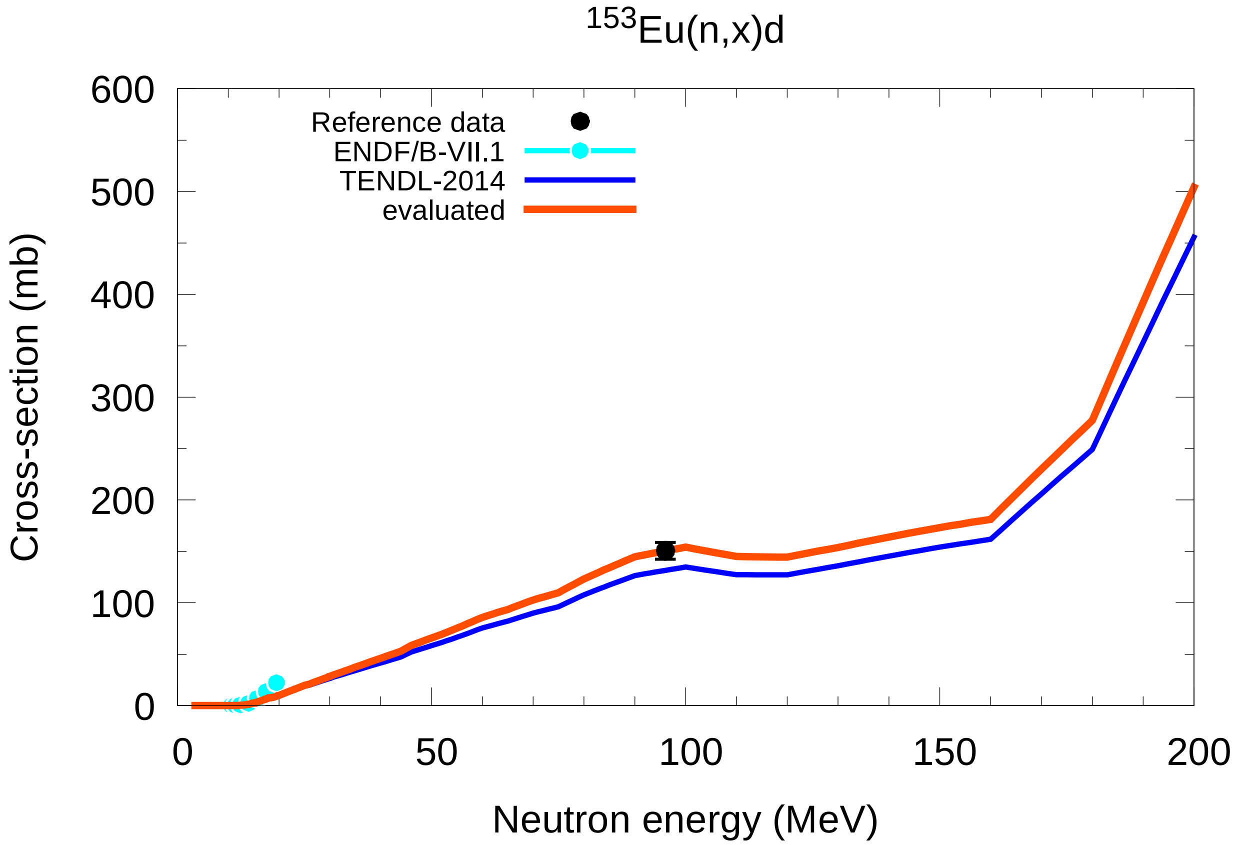
^{152}Sm(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



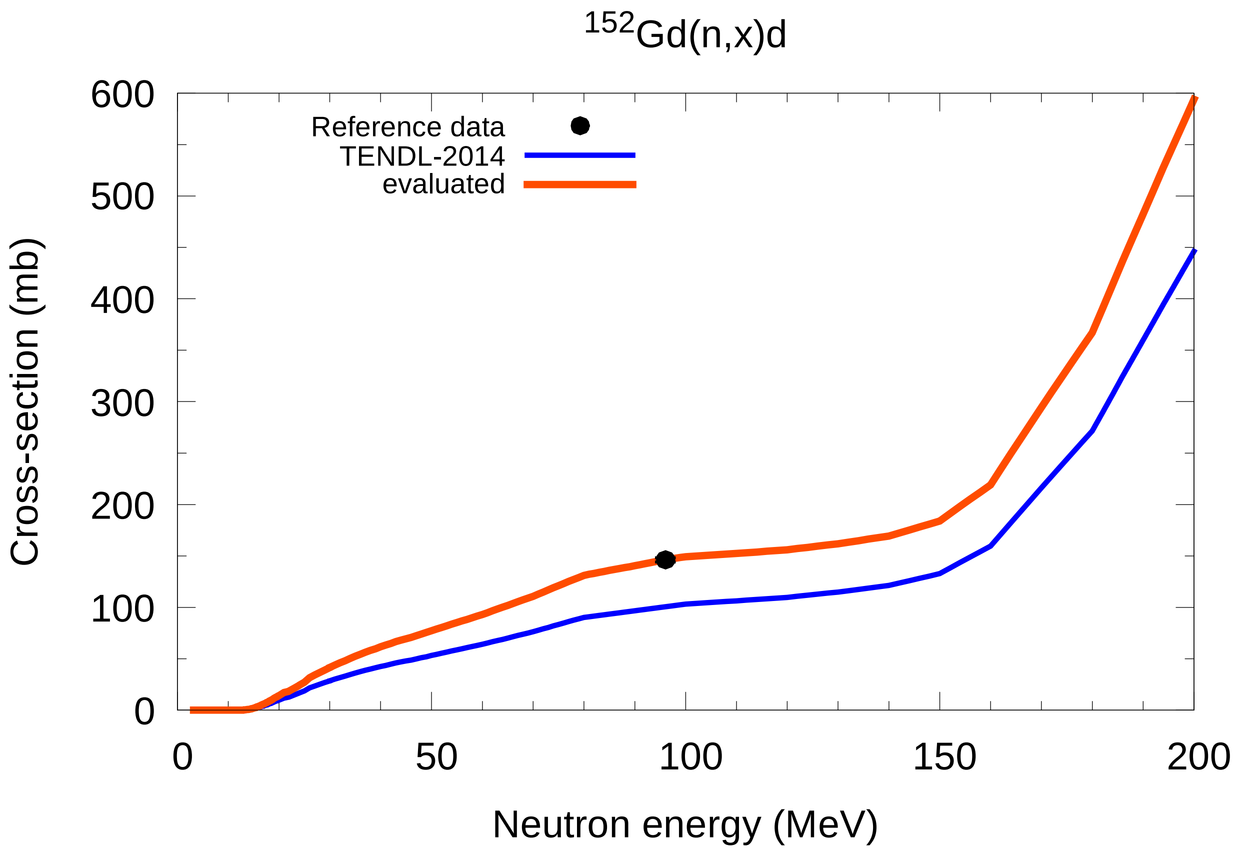
^{154}Sm(n,x)d
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



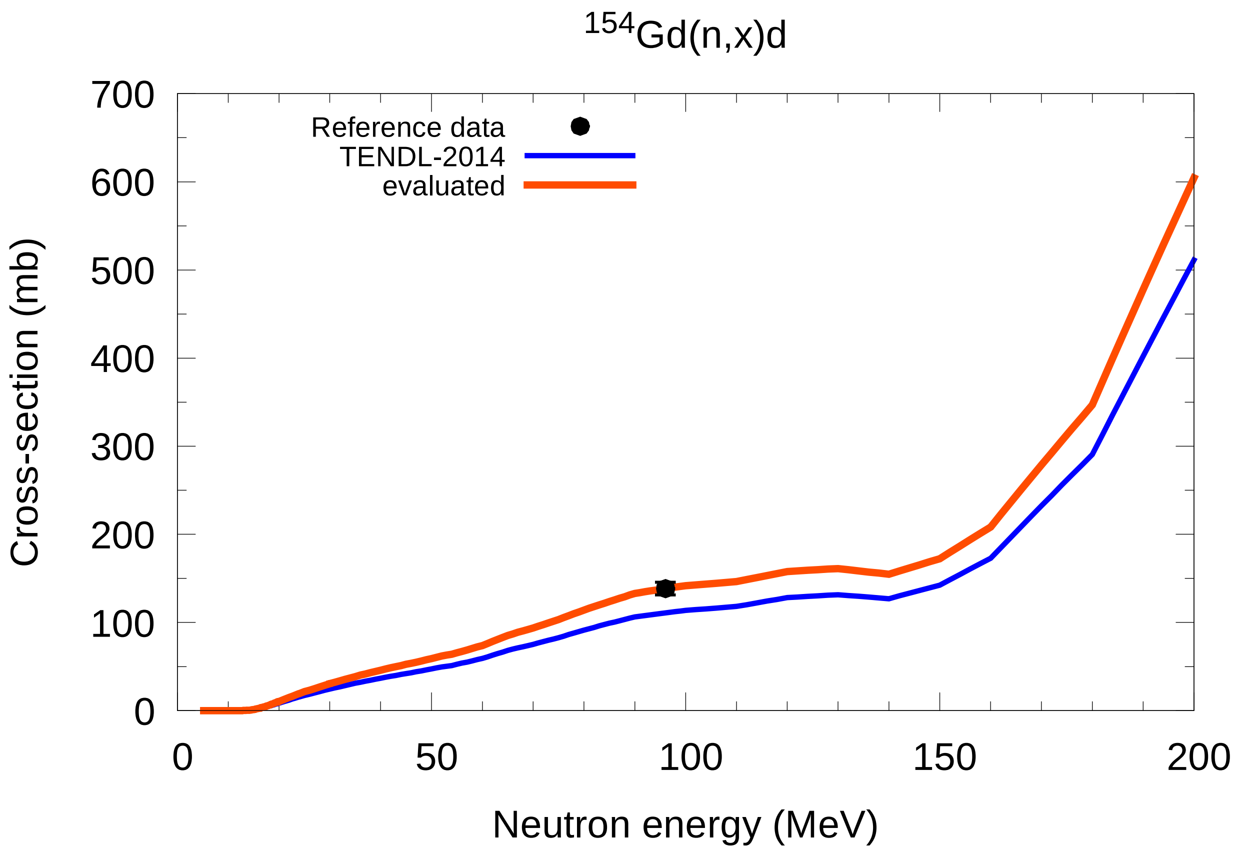
^{151}Eu(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



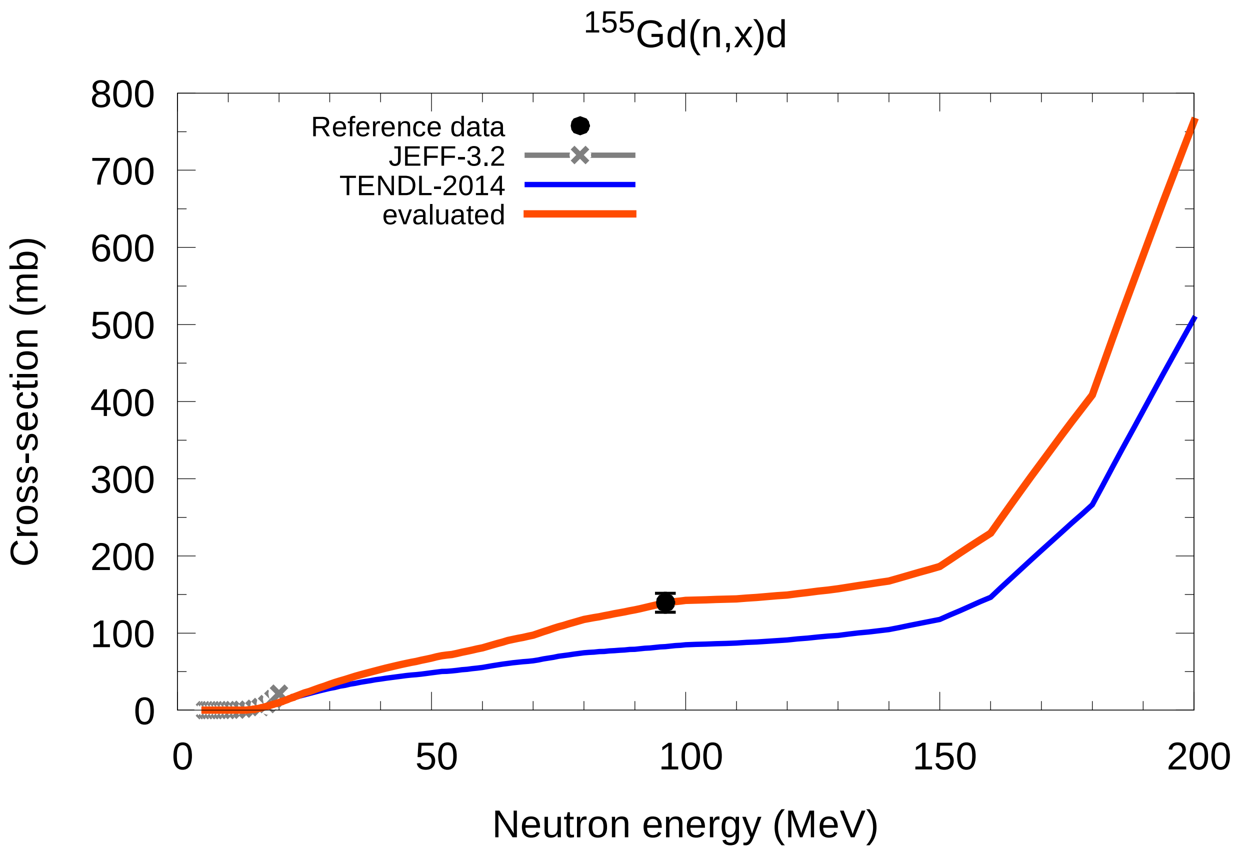
^{153}Eu(n,x)d
Reference data
ENDF/B-VII.1
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



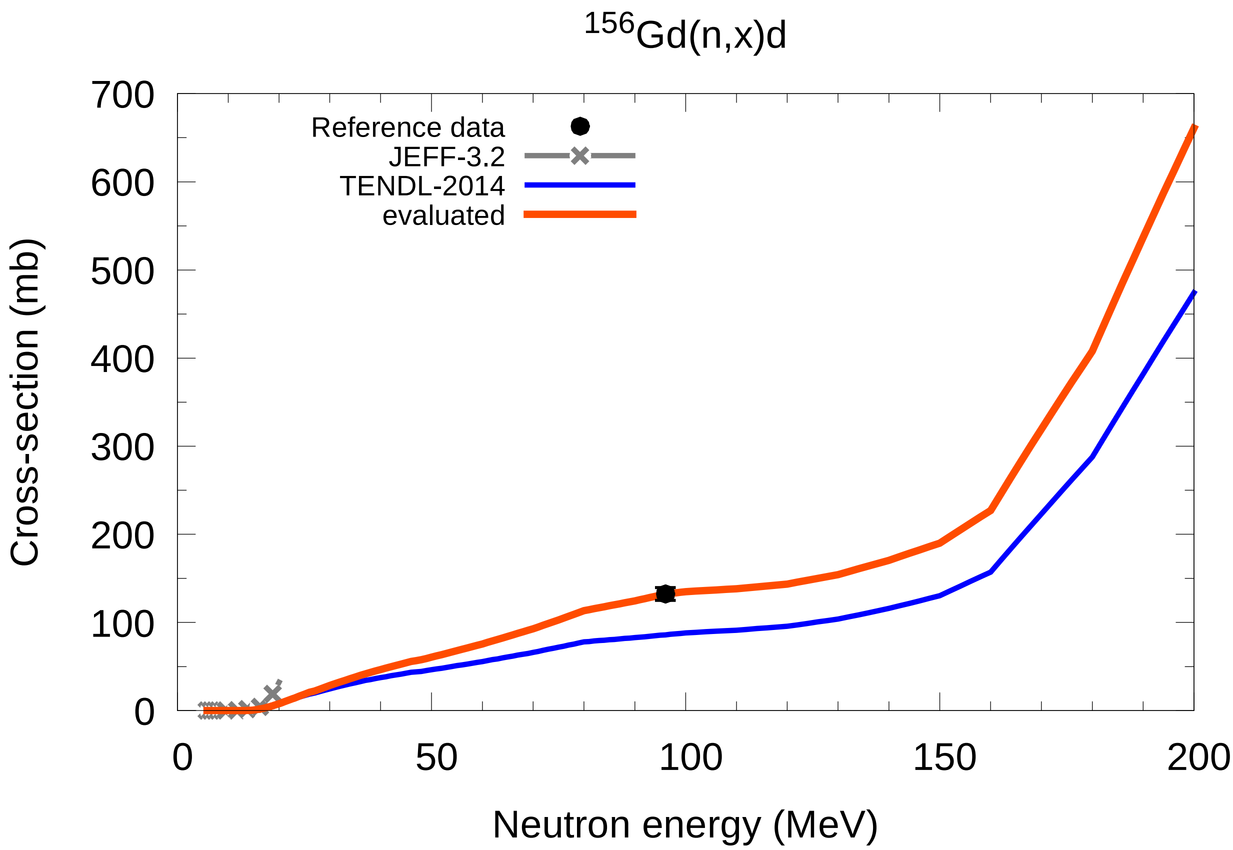
^{152}Gd(n,x)d
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200

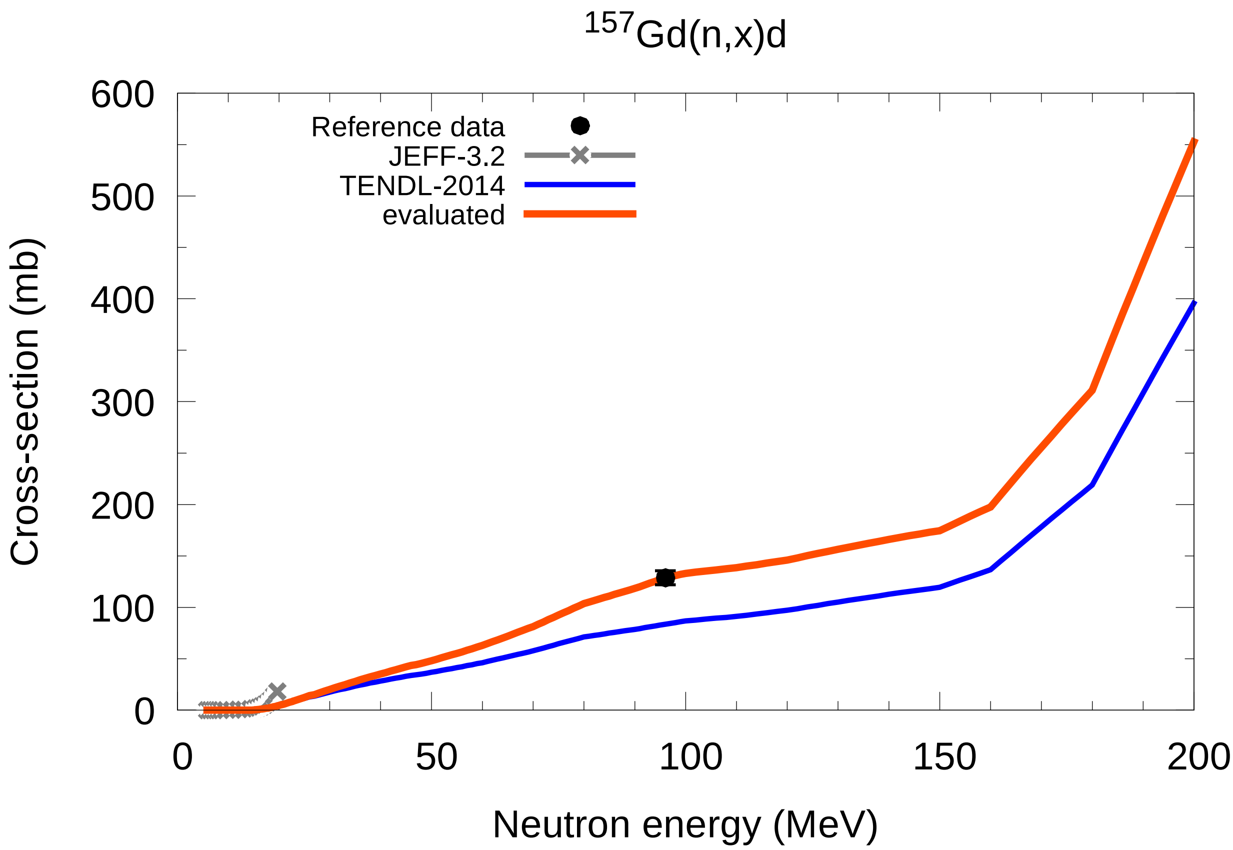


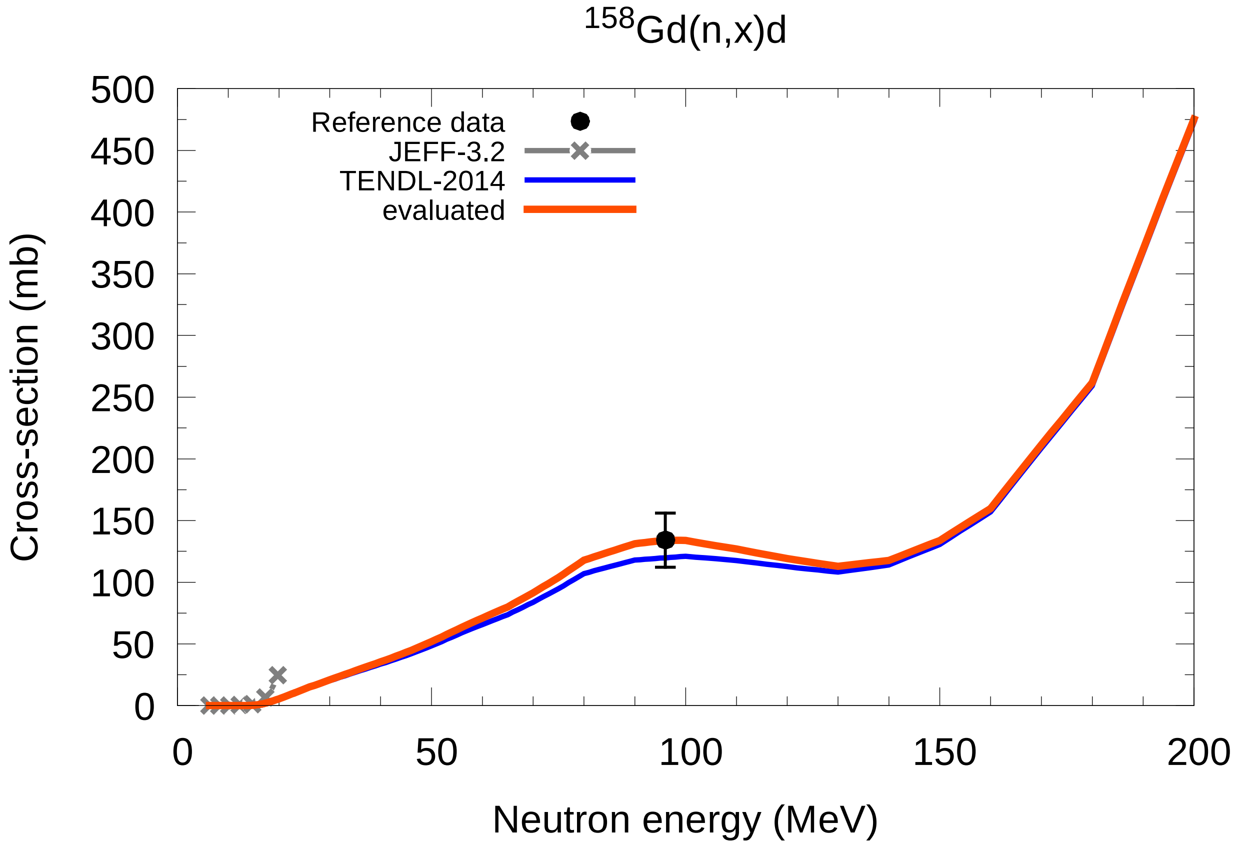
$^{154}Gd(n,x)d$
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200



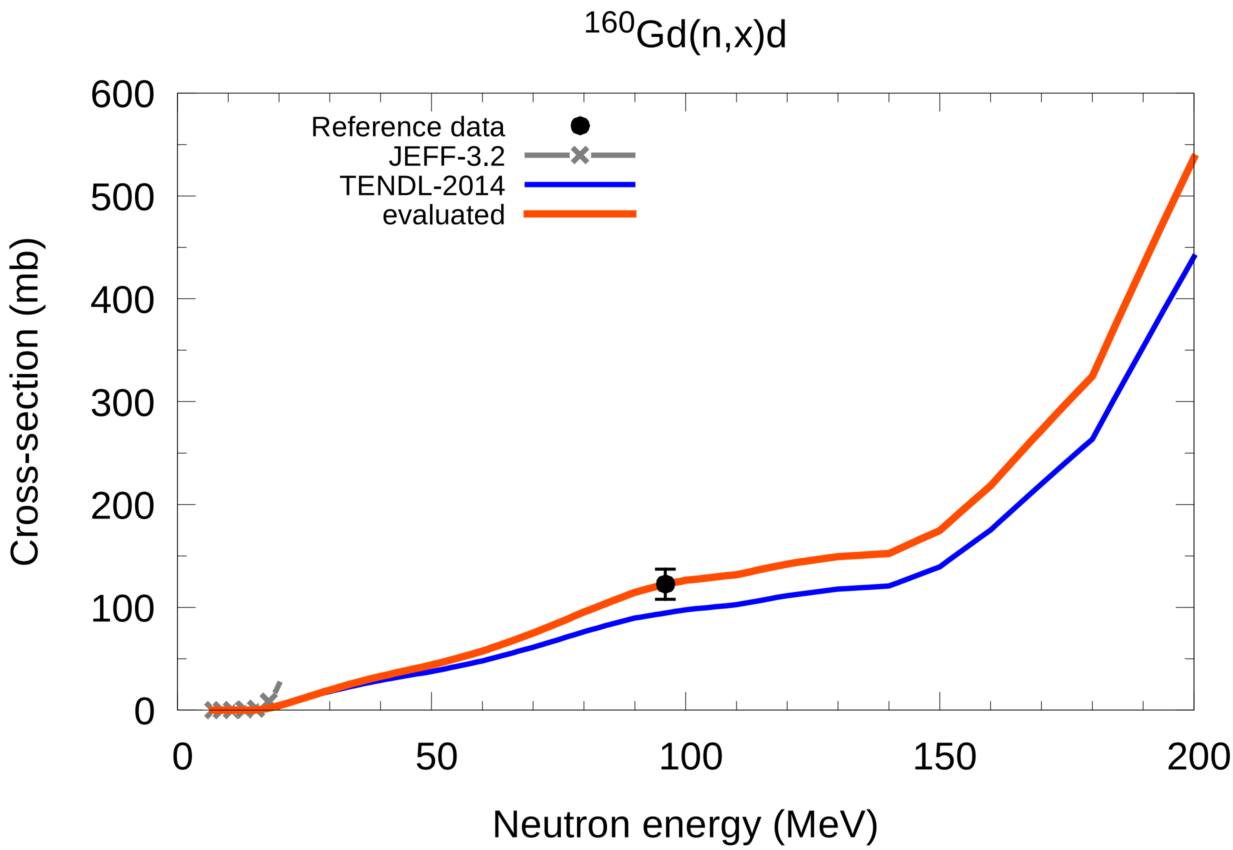
$^{155}Gd(n,x)d$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
0
50
100
150
200


^{156}Gd(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200

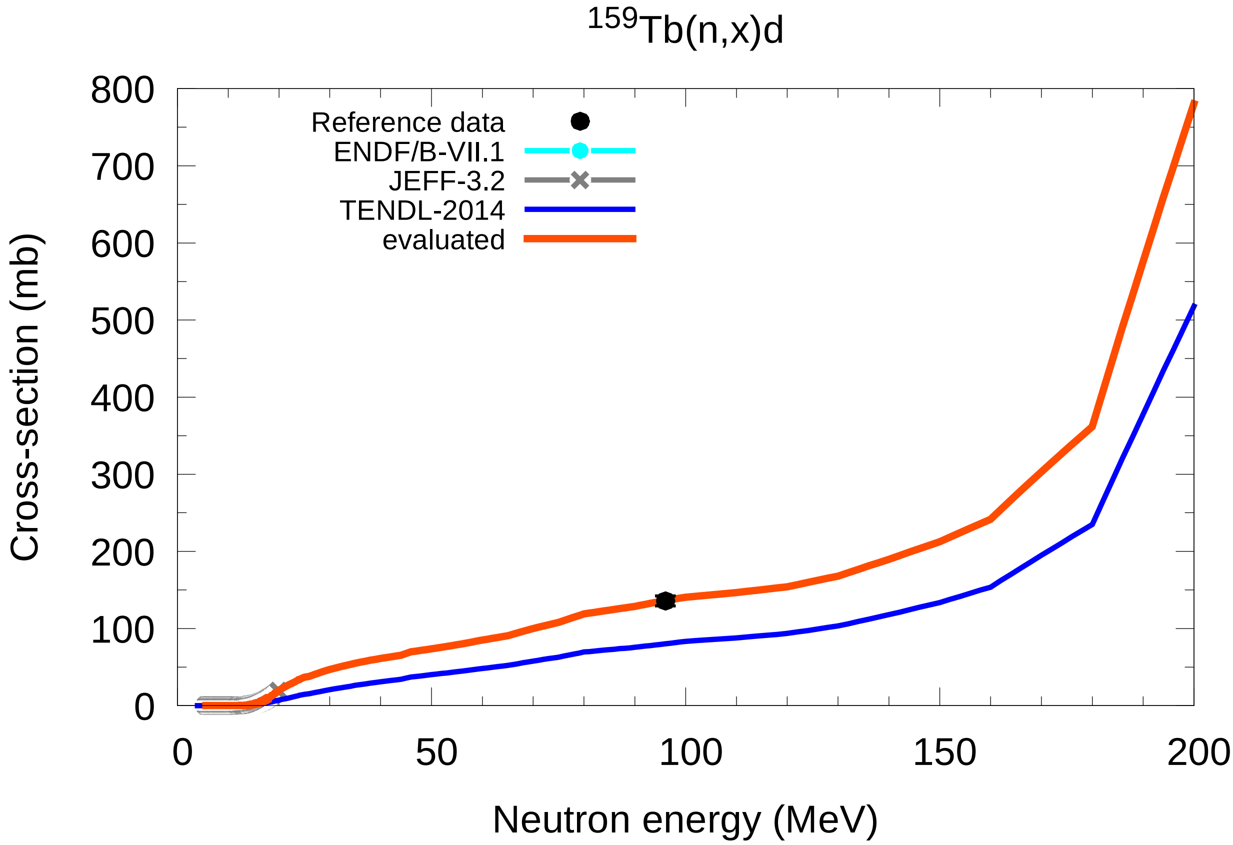

^{157}Gd(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200

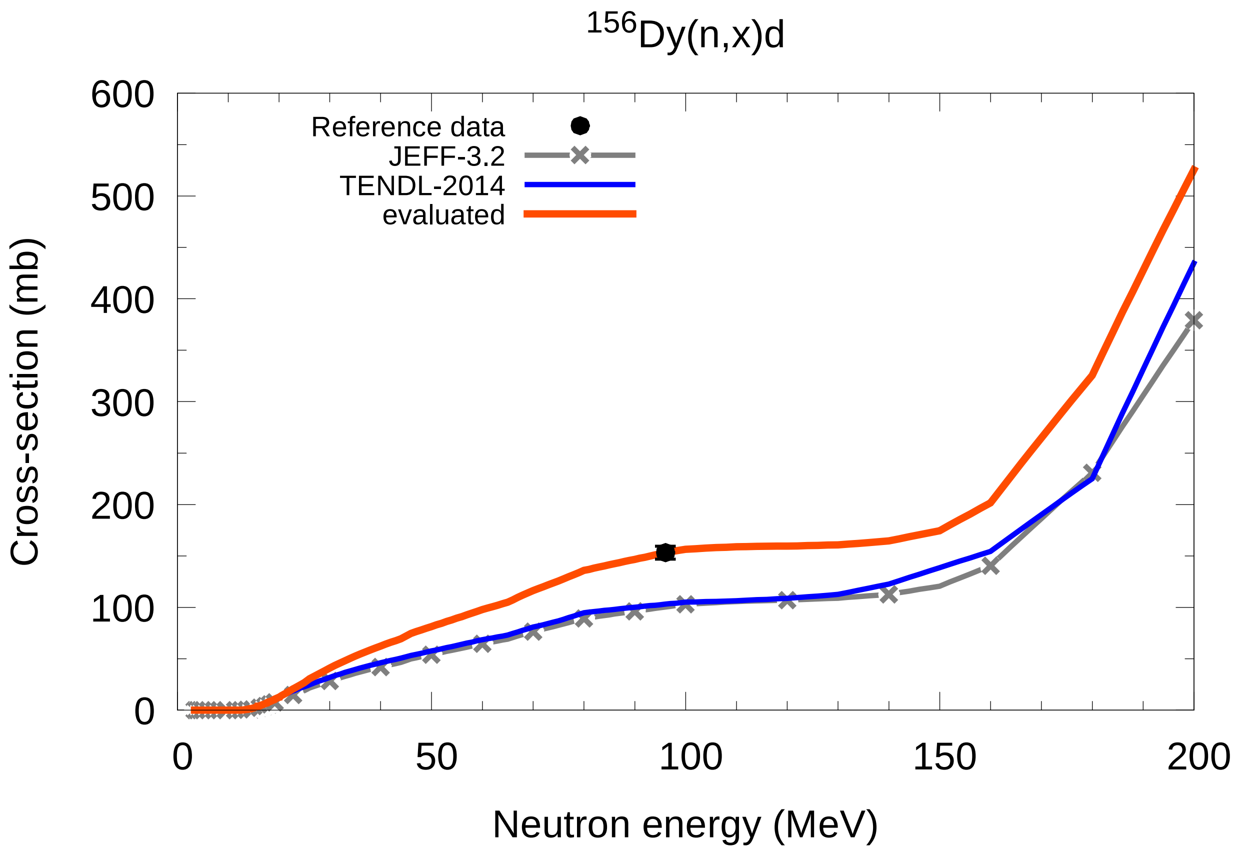


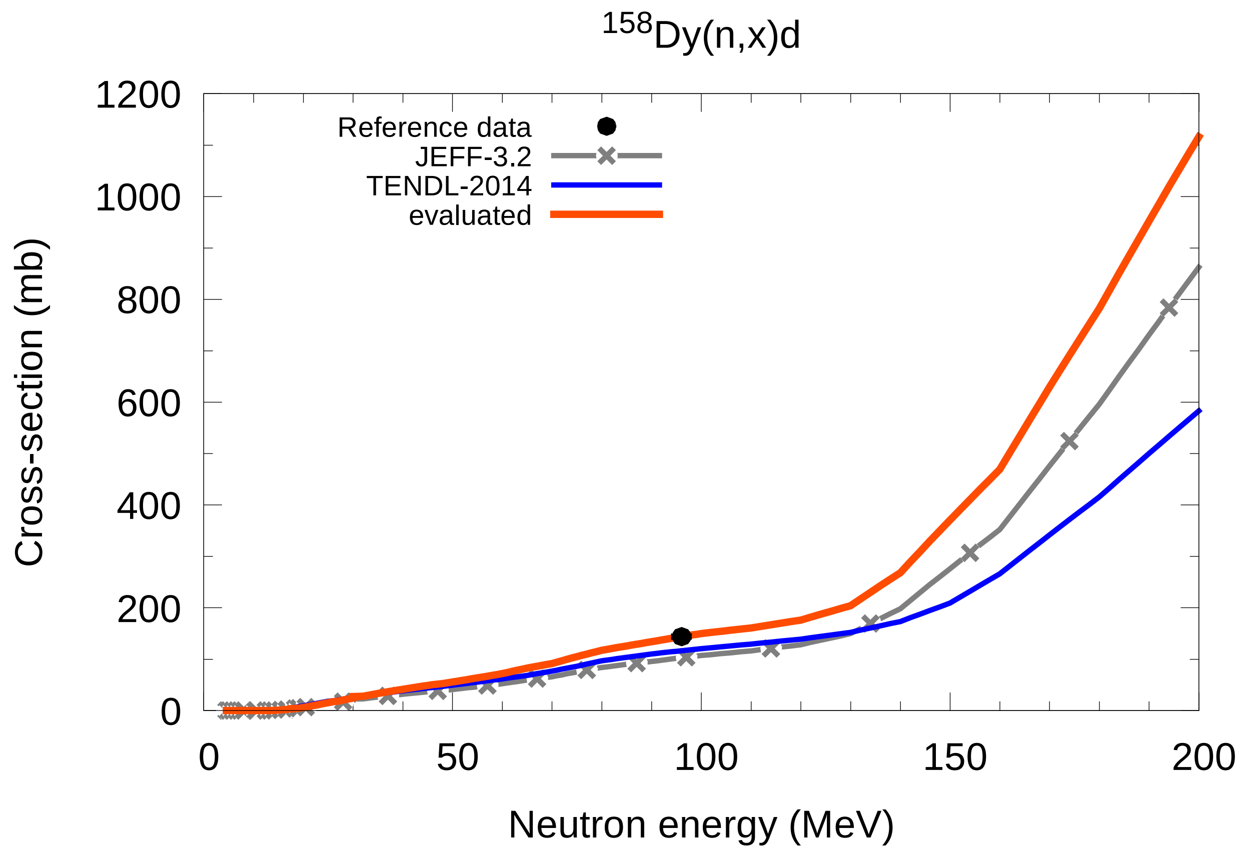
$^{158}Gd(n,x)d$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500
0
50
100
150
200



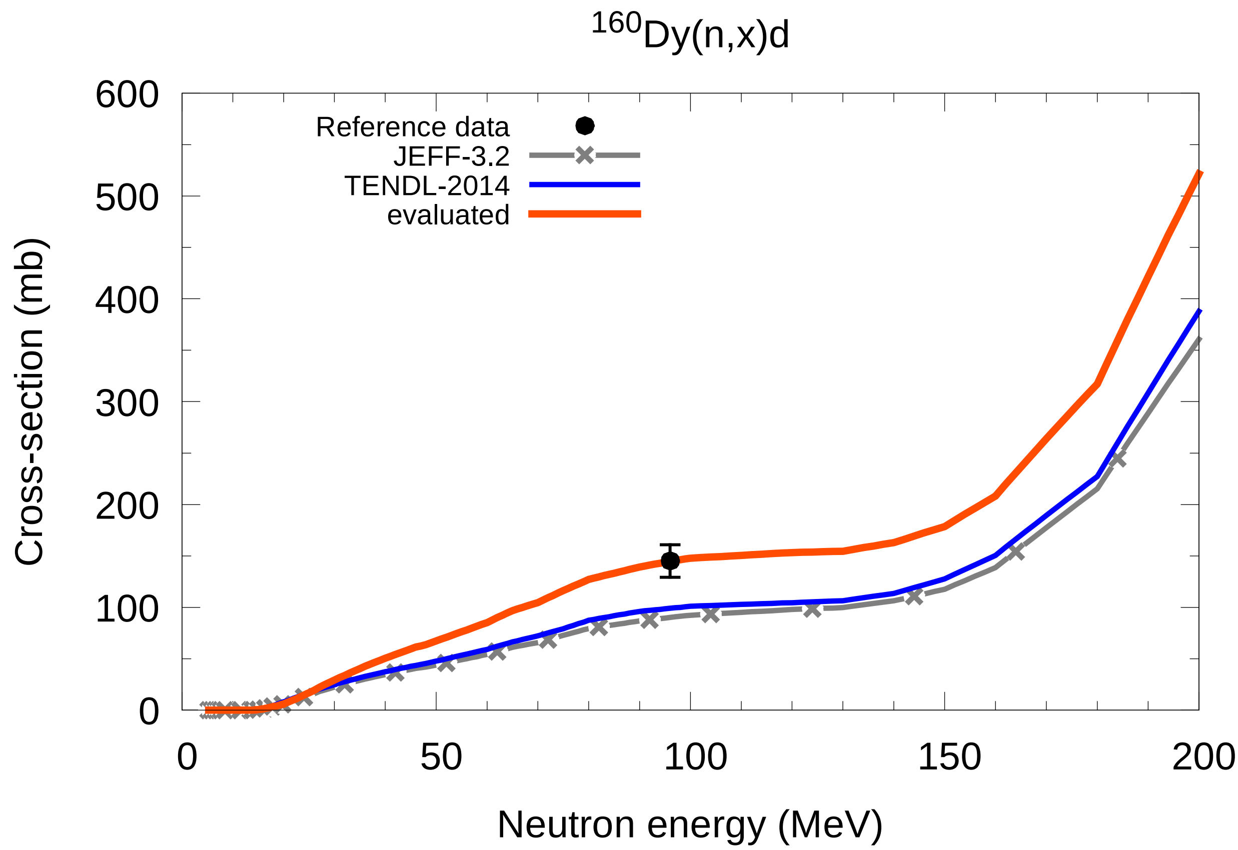
$^{160}Gd(n,x)d$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200


^{159}Tb(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
0
50
100
150
200

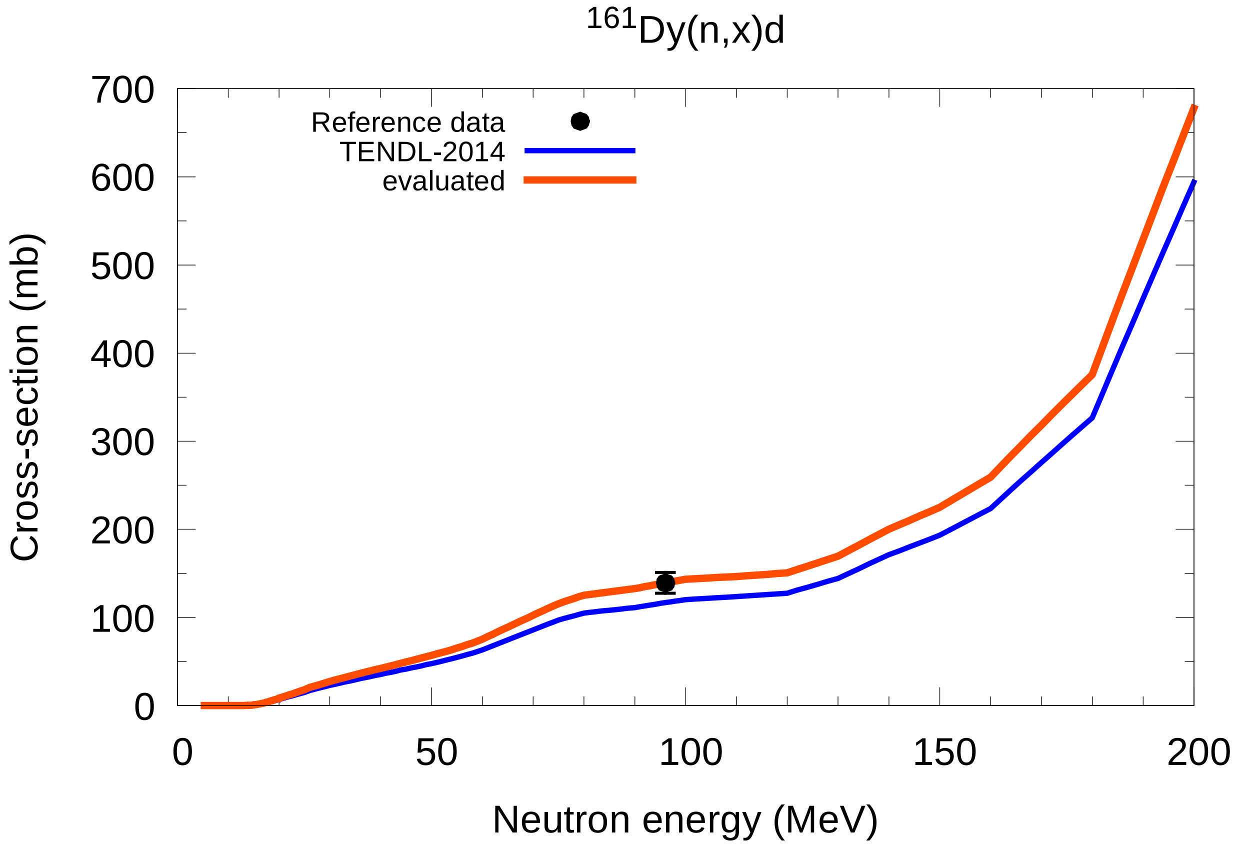

^{156}Dy(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



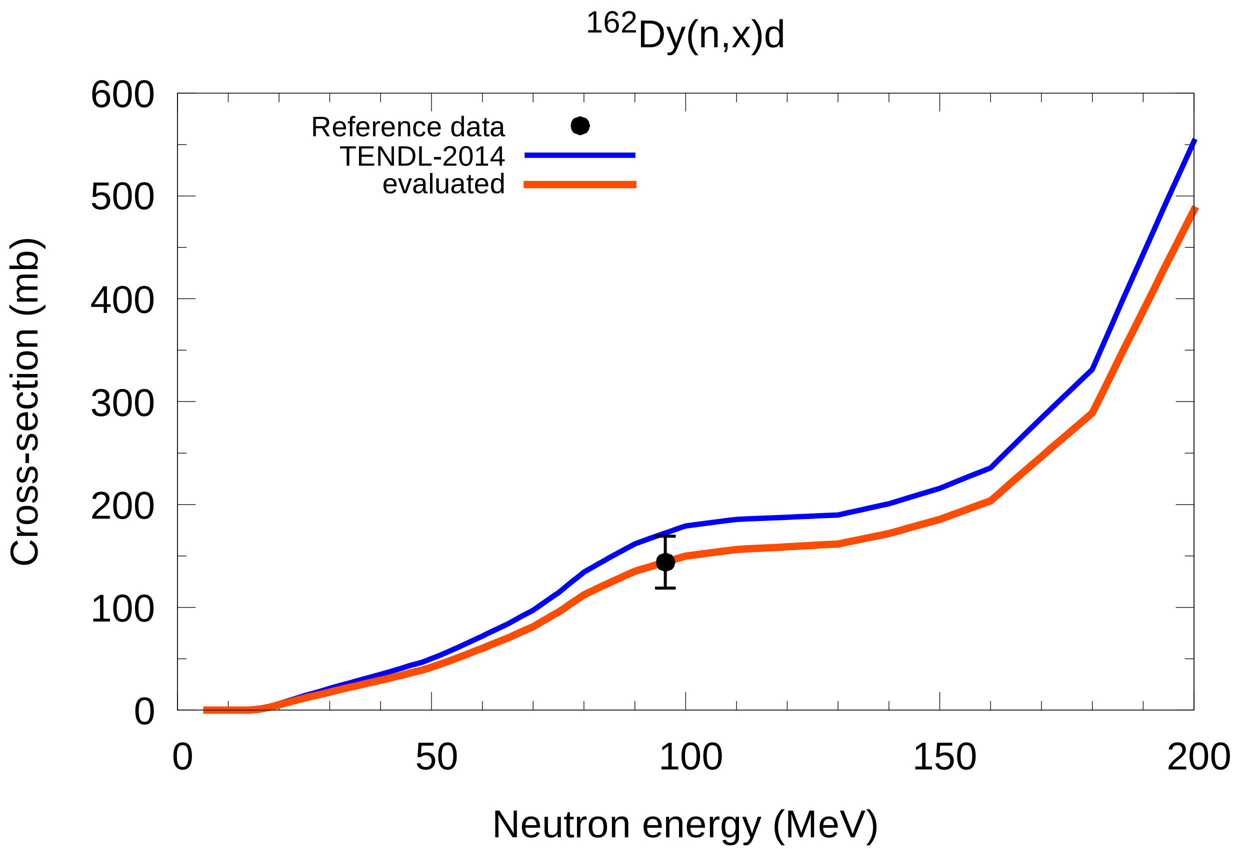
158Dy(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
0
50
100
150
200



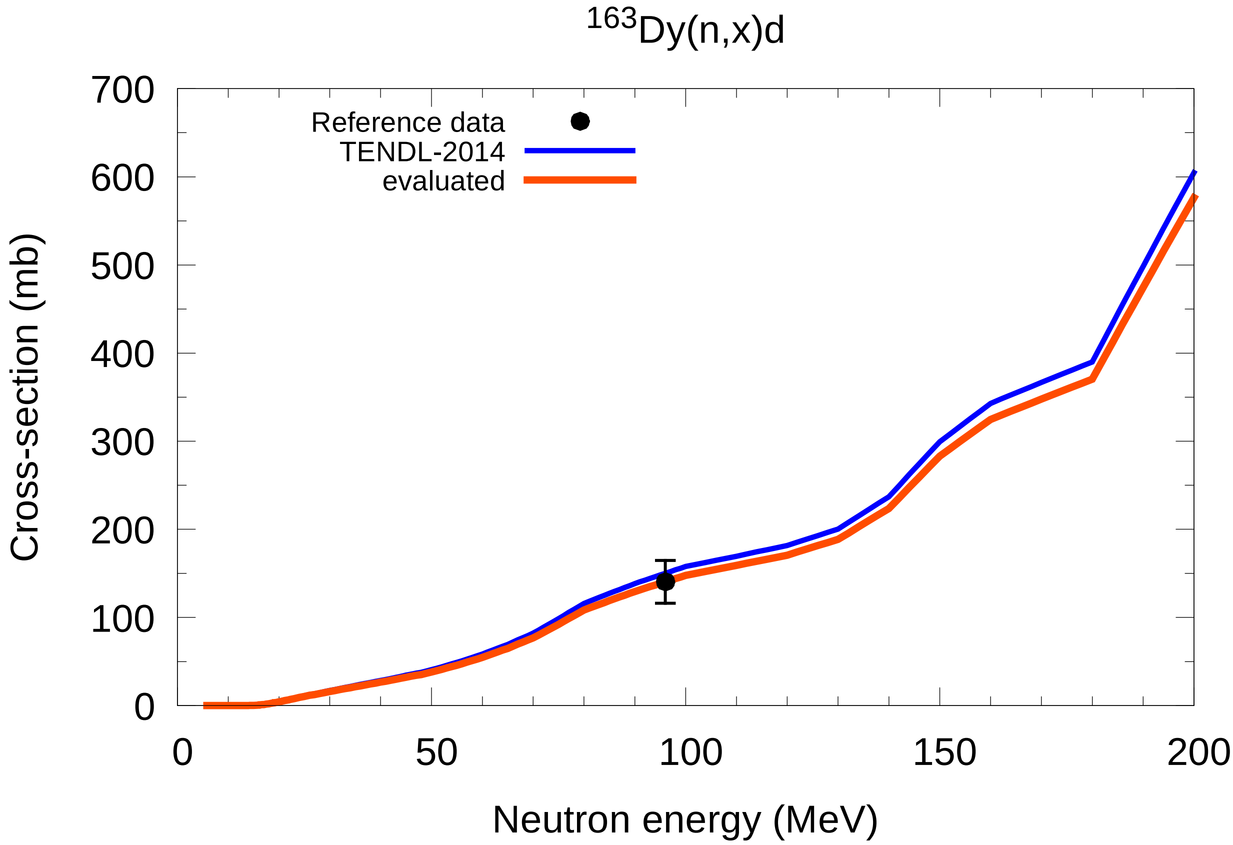
160Dy(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



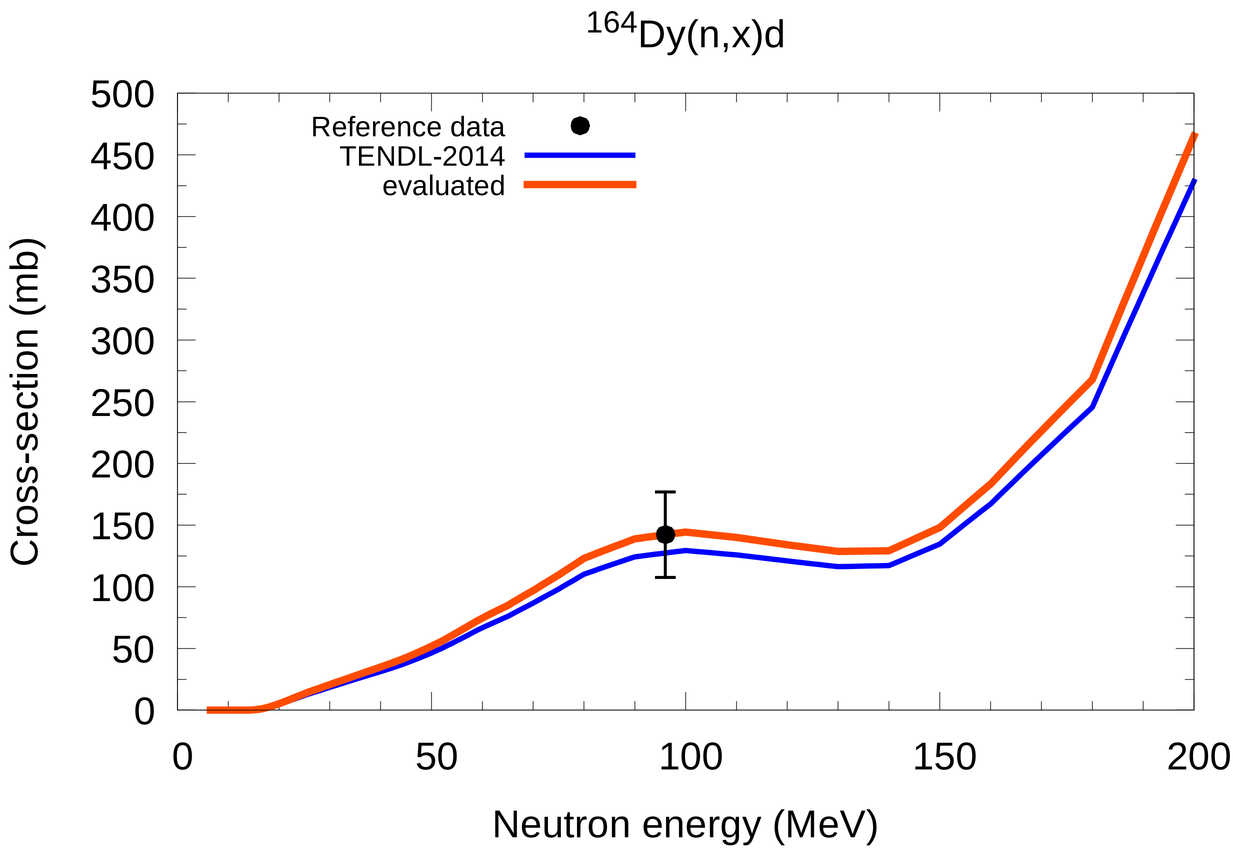
^{161}Dy(n,x)d
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200



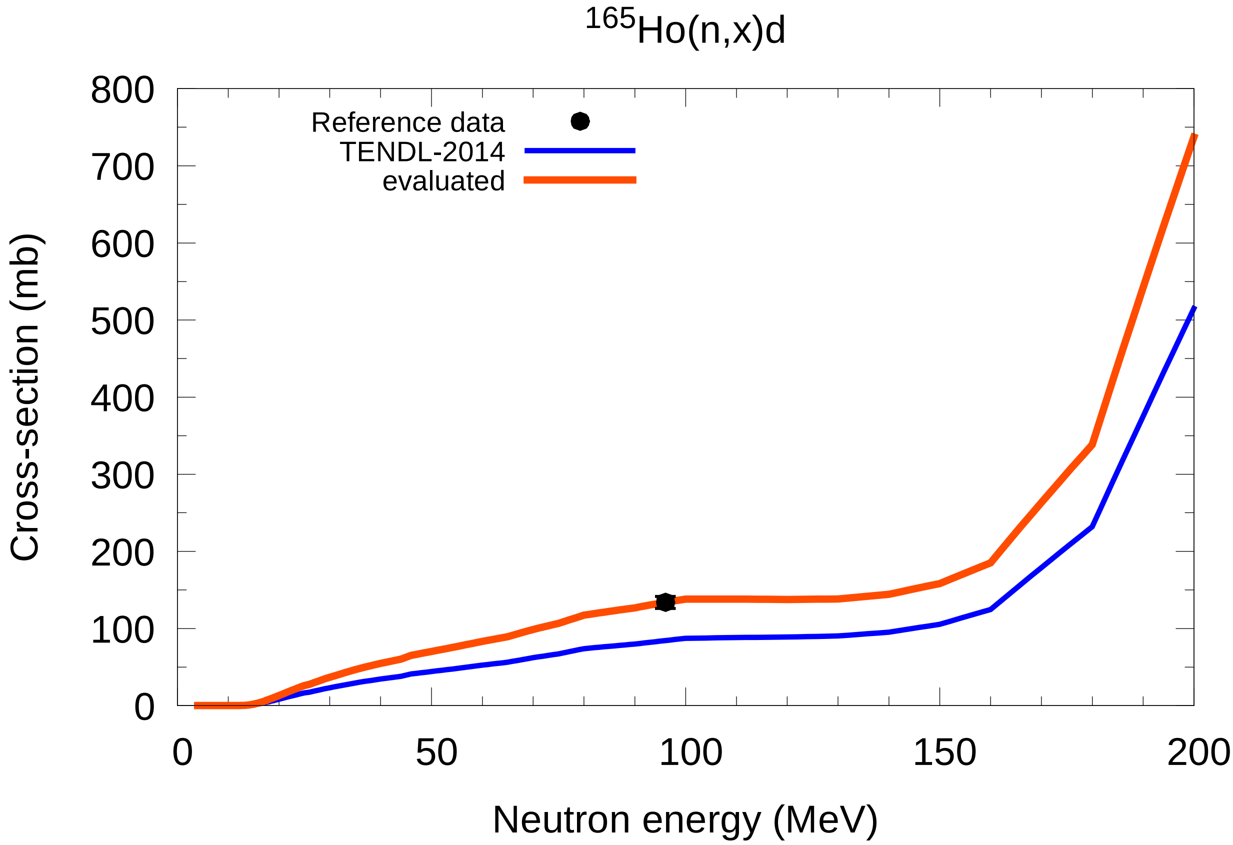
^{162}Dy(n,x)d
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



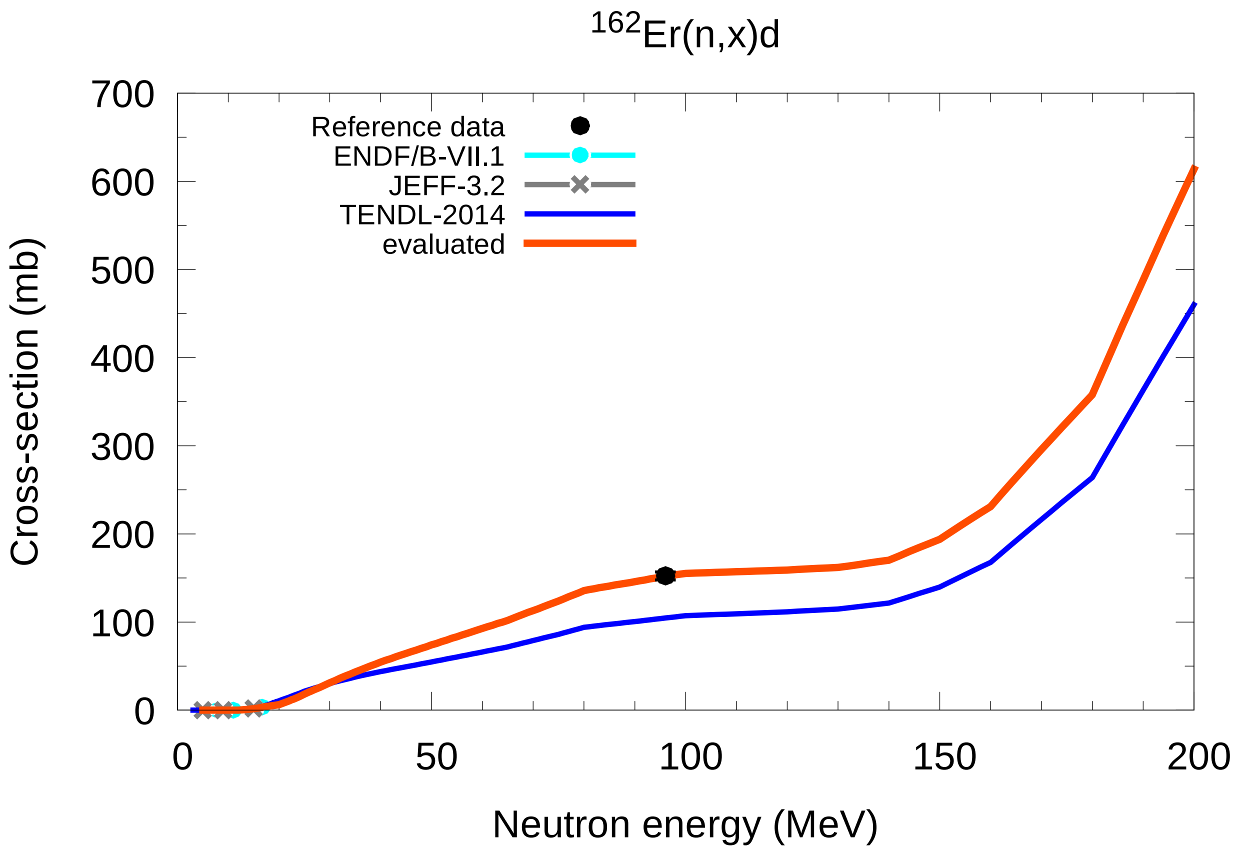
163Dy(n,x)d
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200



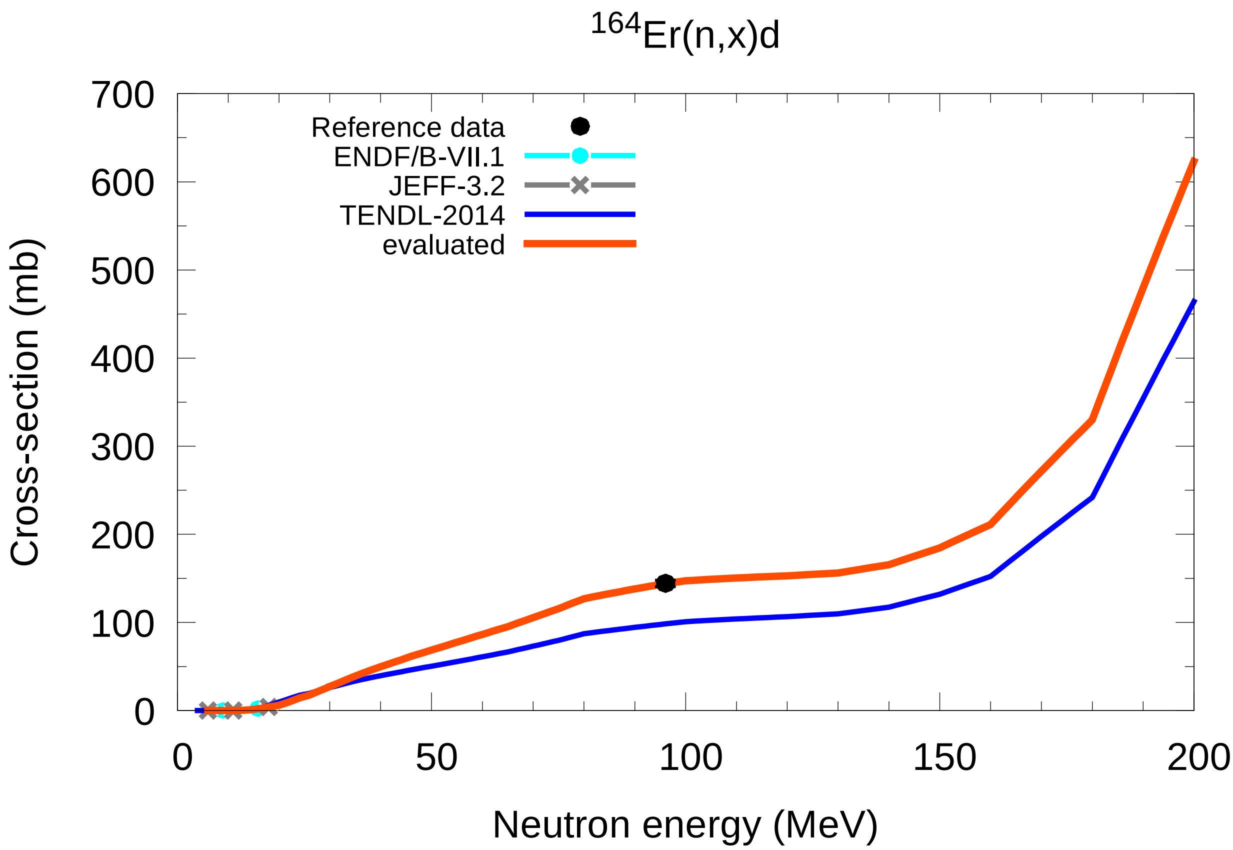
164Dy(n,x)d
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500
0
50
100
150
200



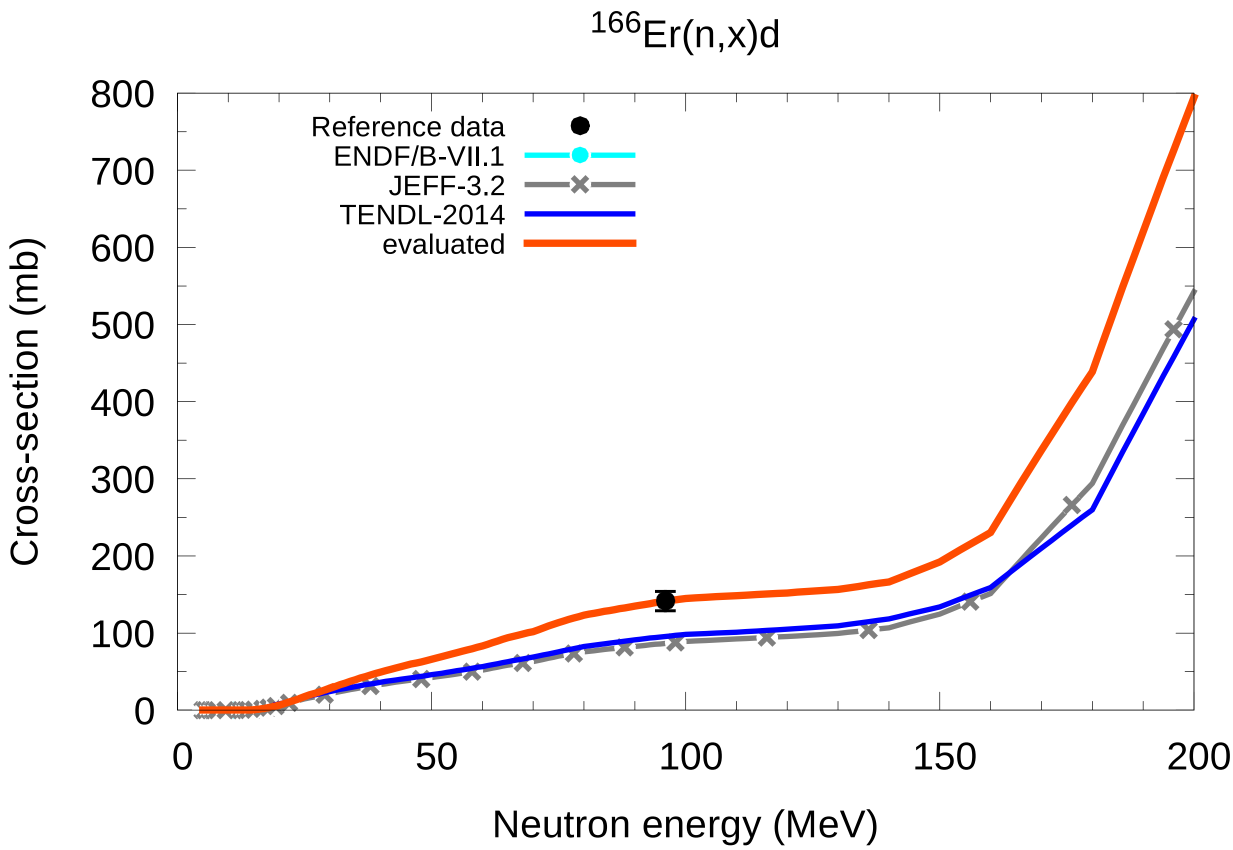
^{165}Ho(n,x)d
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
0
50
100
150
200



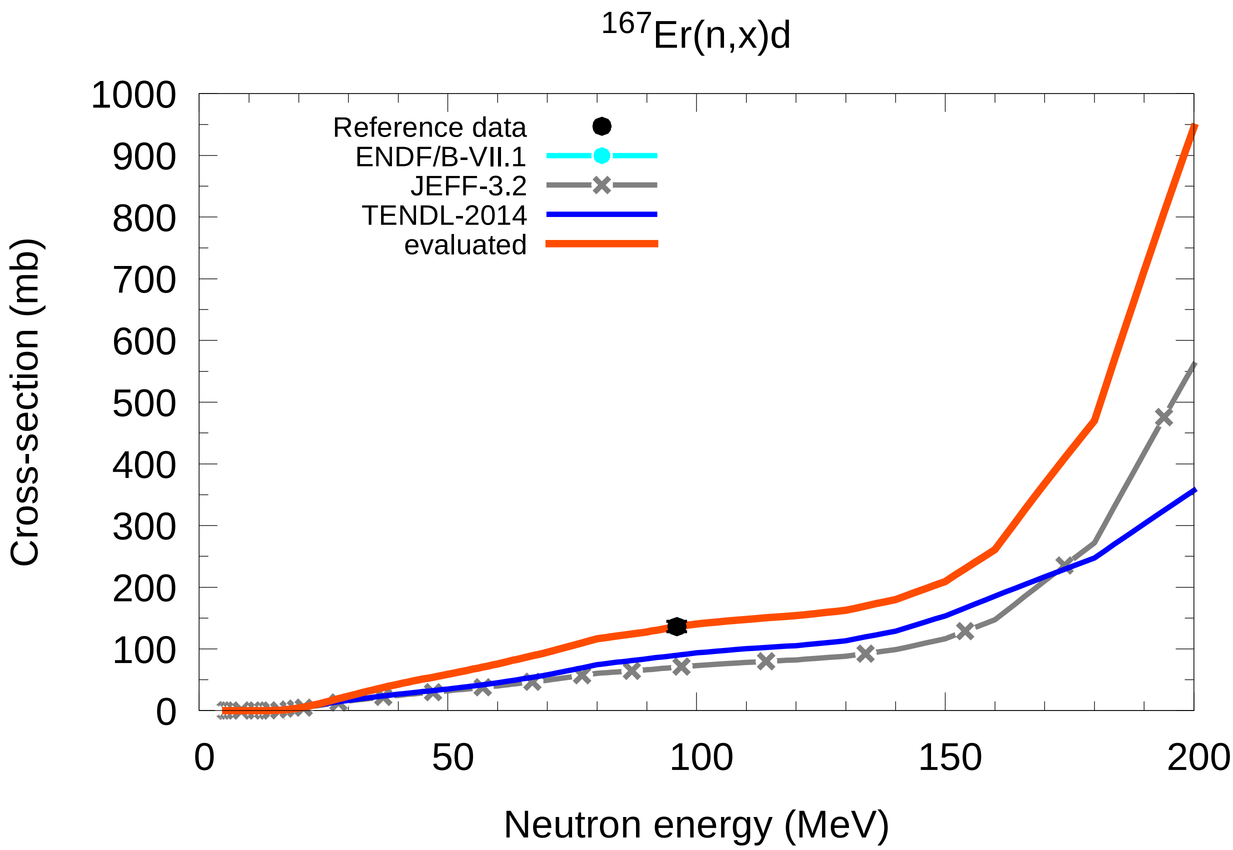
^{162}Er(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200



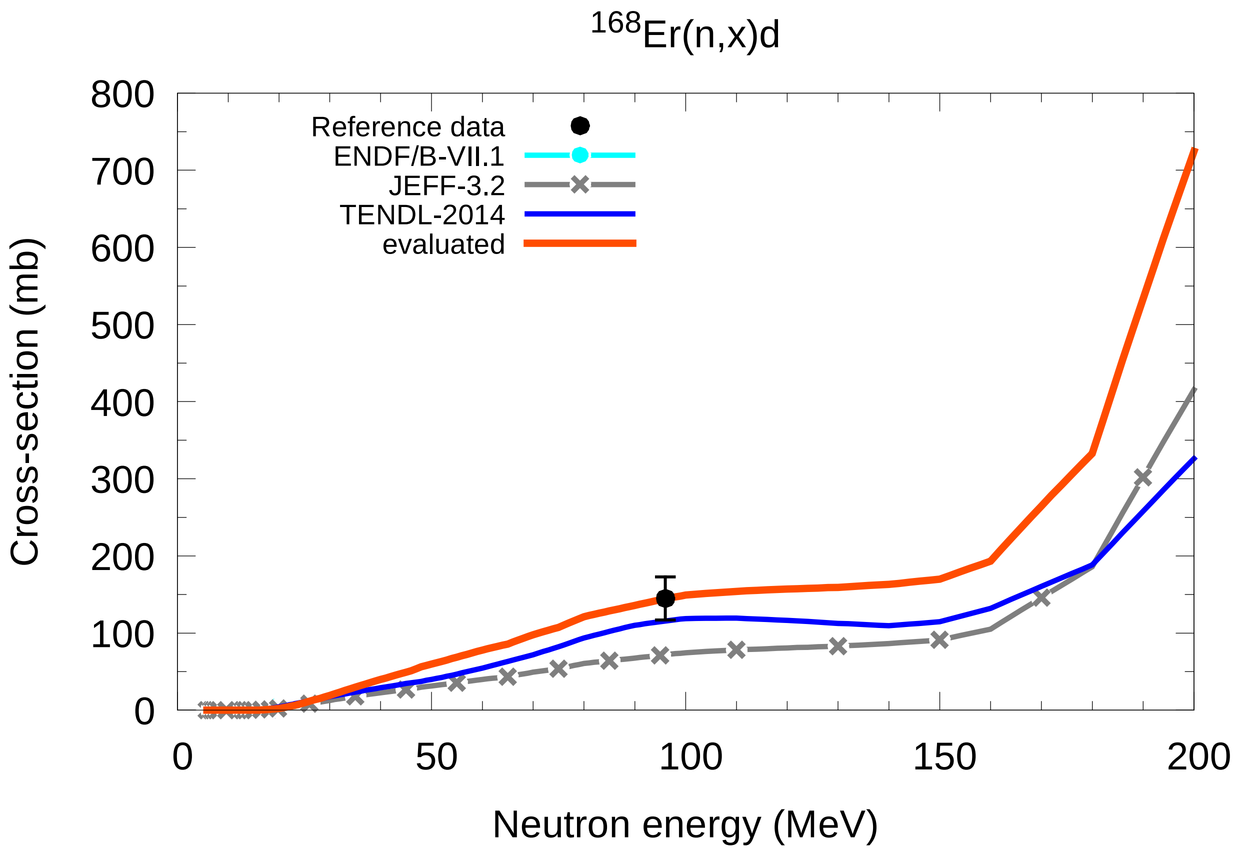
164Er(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200



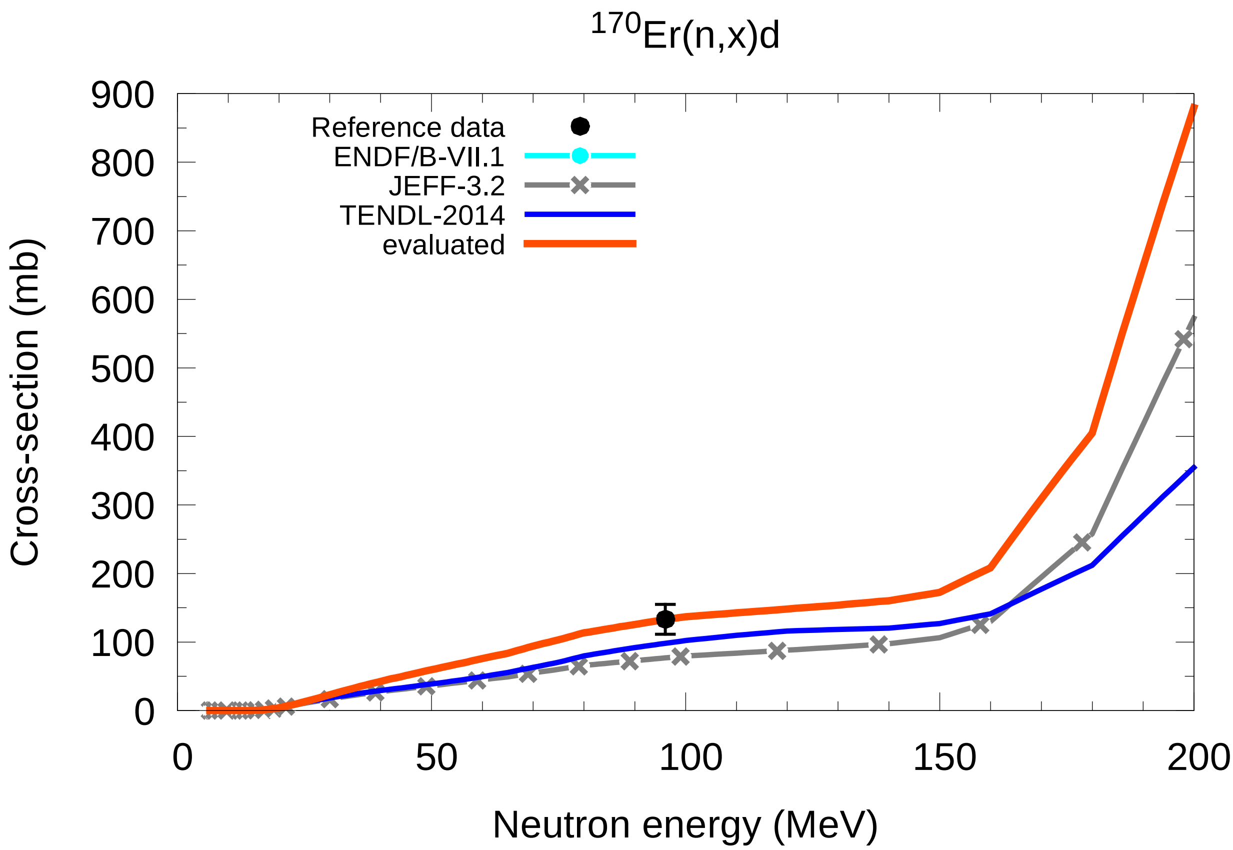
166Er(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
0
50
100
150
200

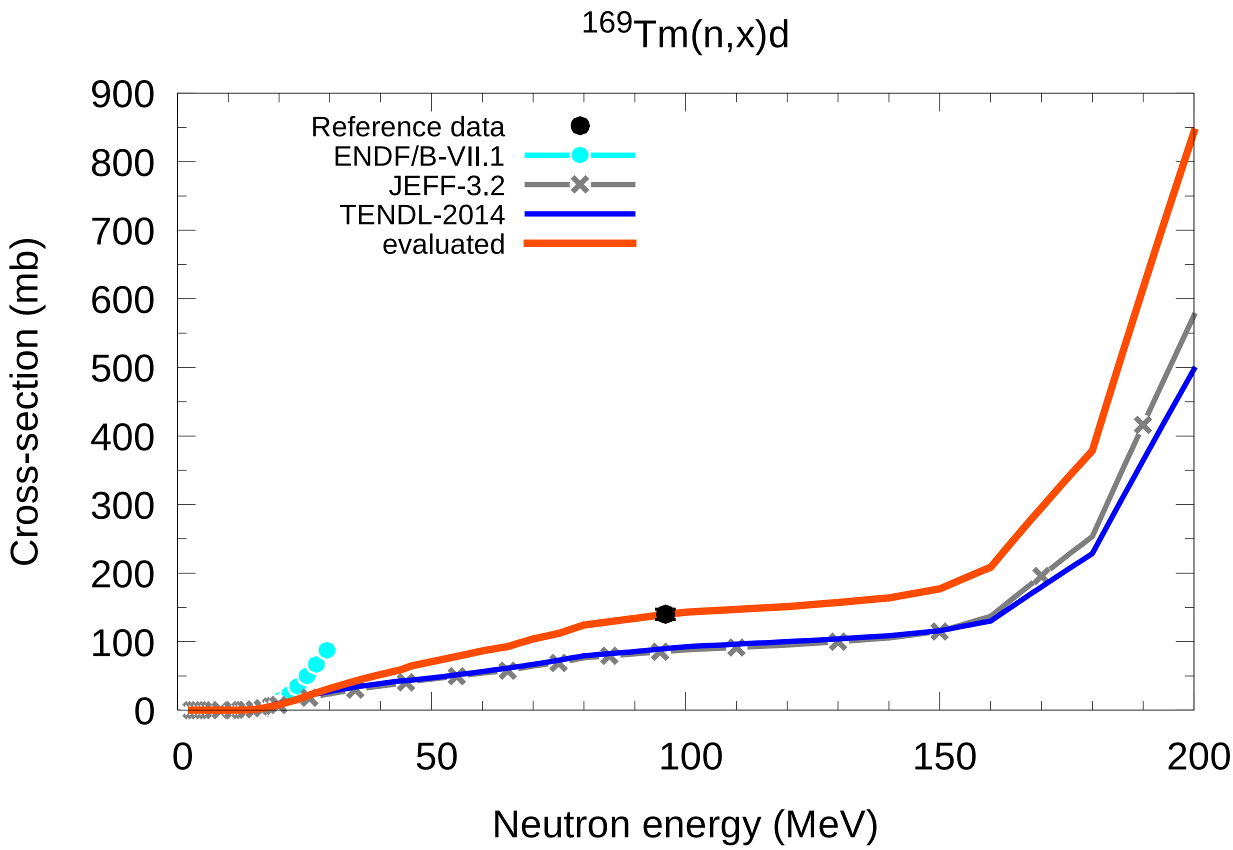


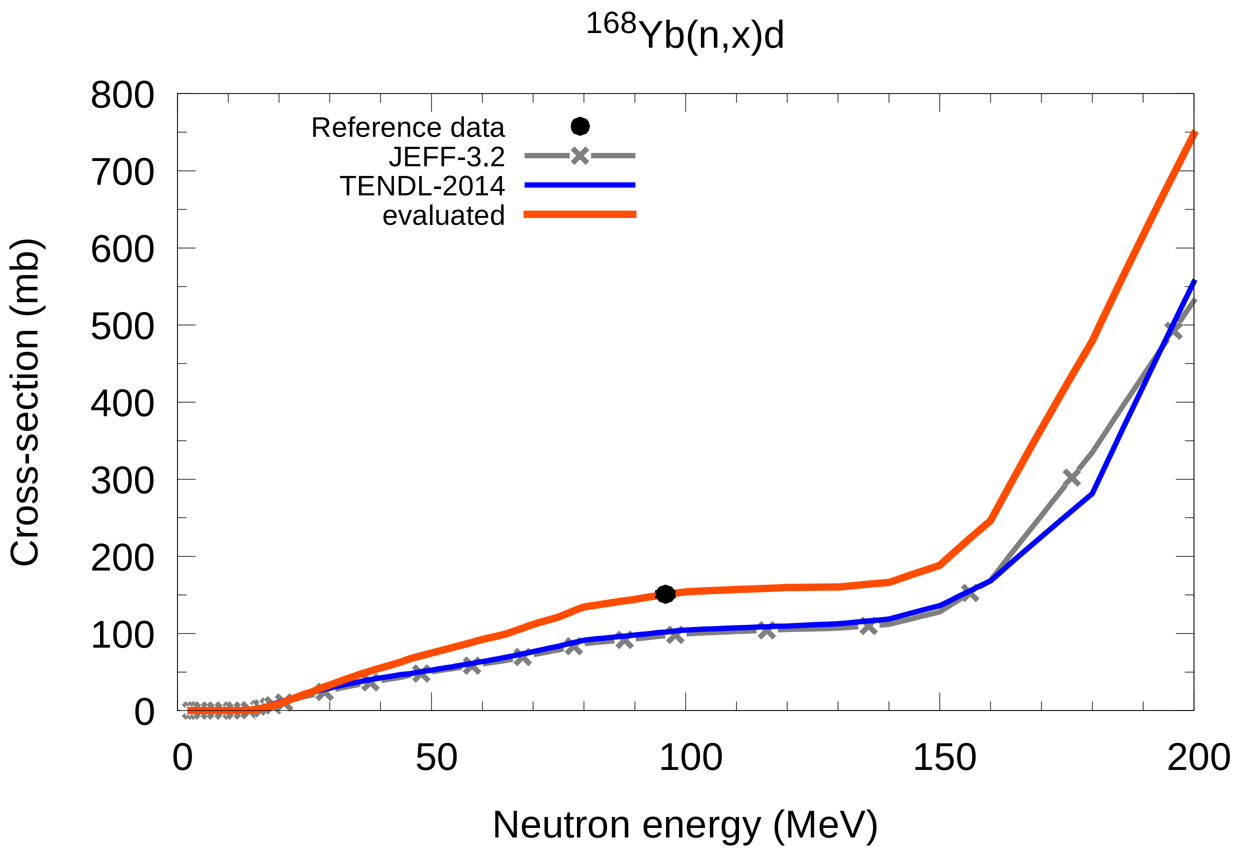
^{167}Er(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
1000
0
50
100
150
200



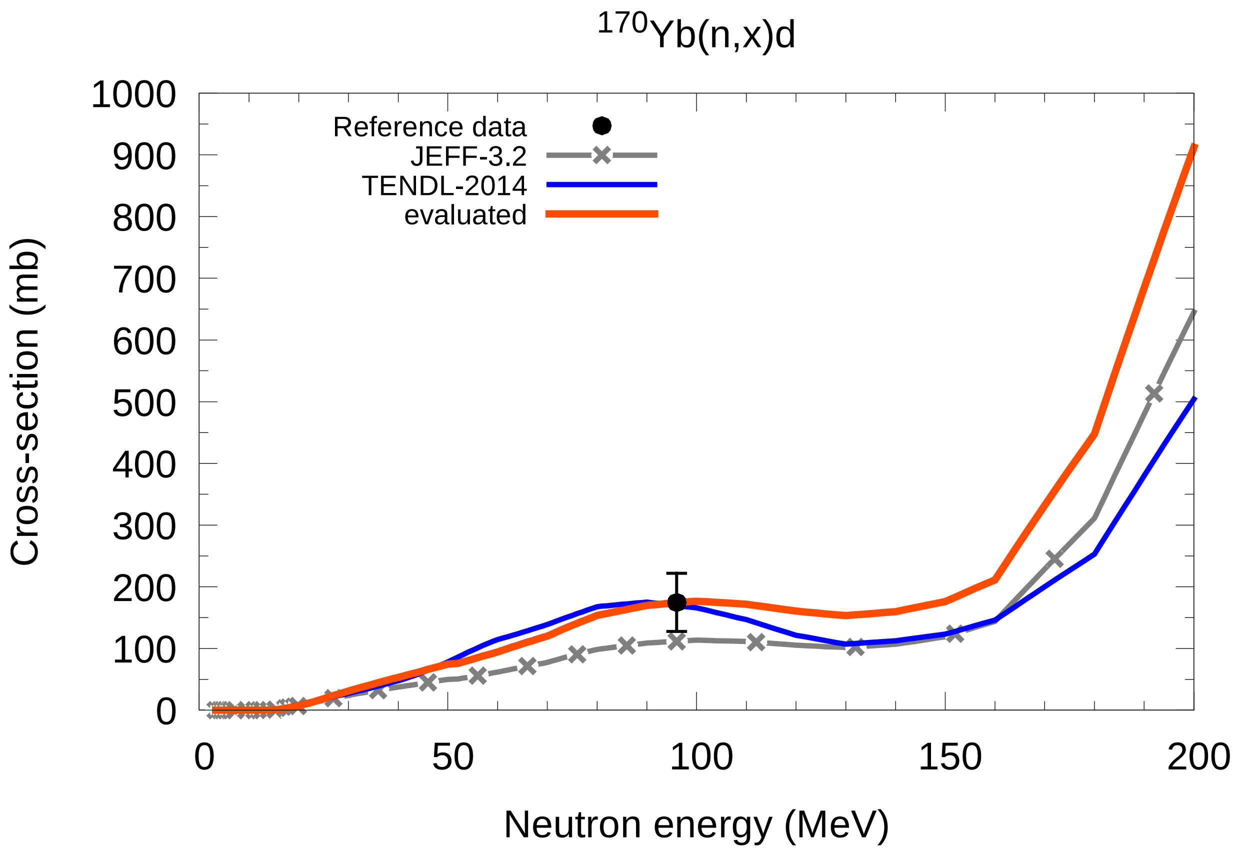
^{168}Er(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
0
50
100
150
200


^{170}Er(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
0
50
100
150
200

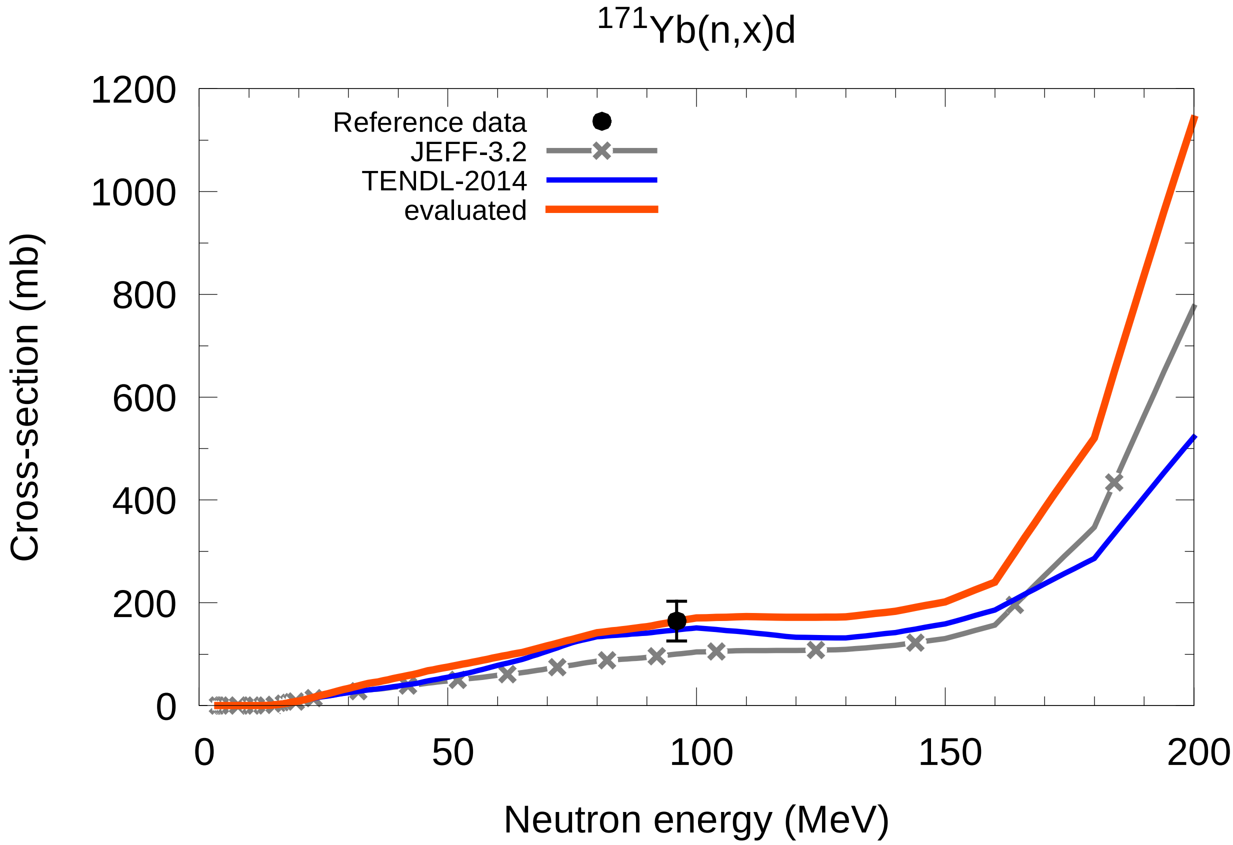

^{169}Tm(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
0
50
100
150
200



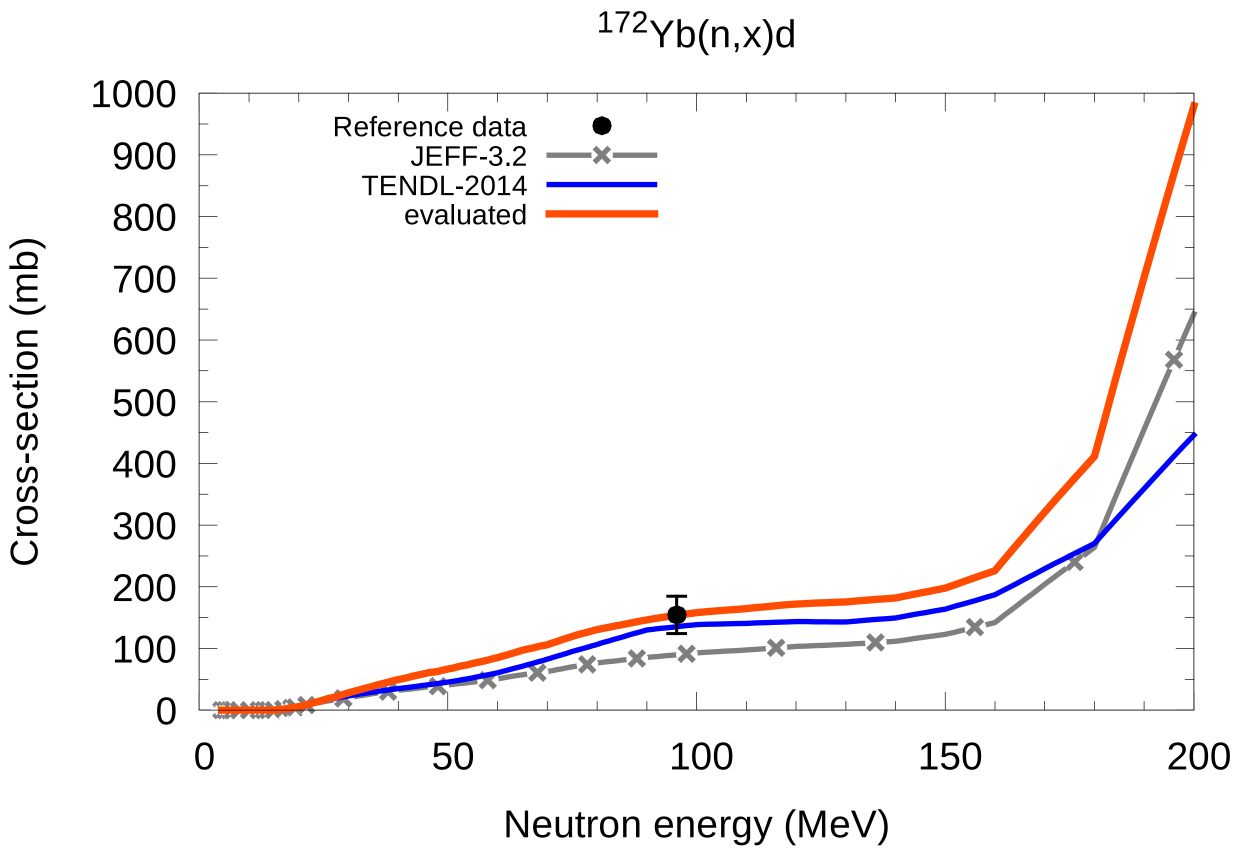
^{168}Yb(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
0
50
100
150
200



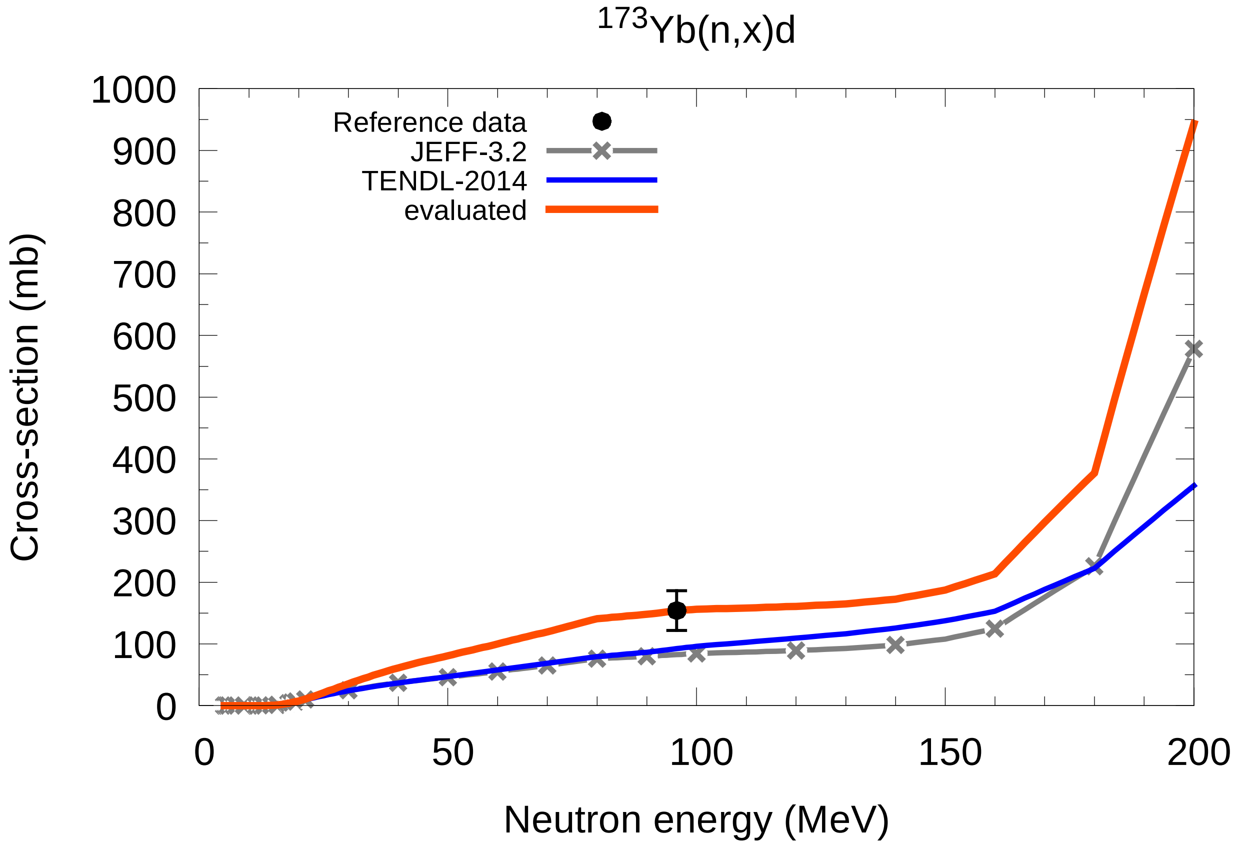
^{170}Yb(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
1000
0
50
100
150
200



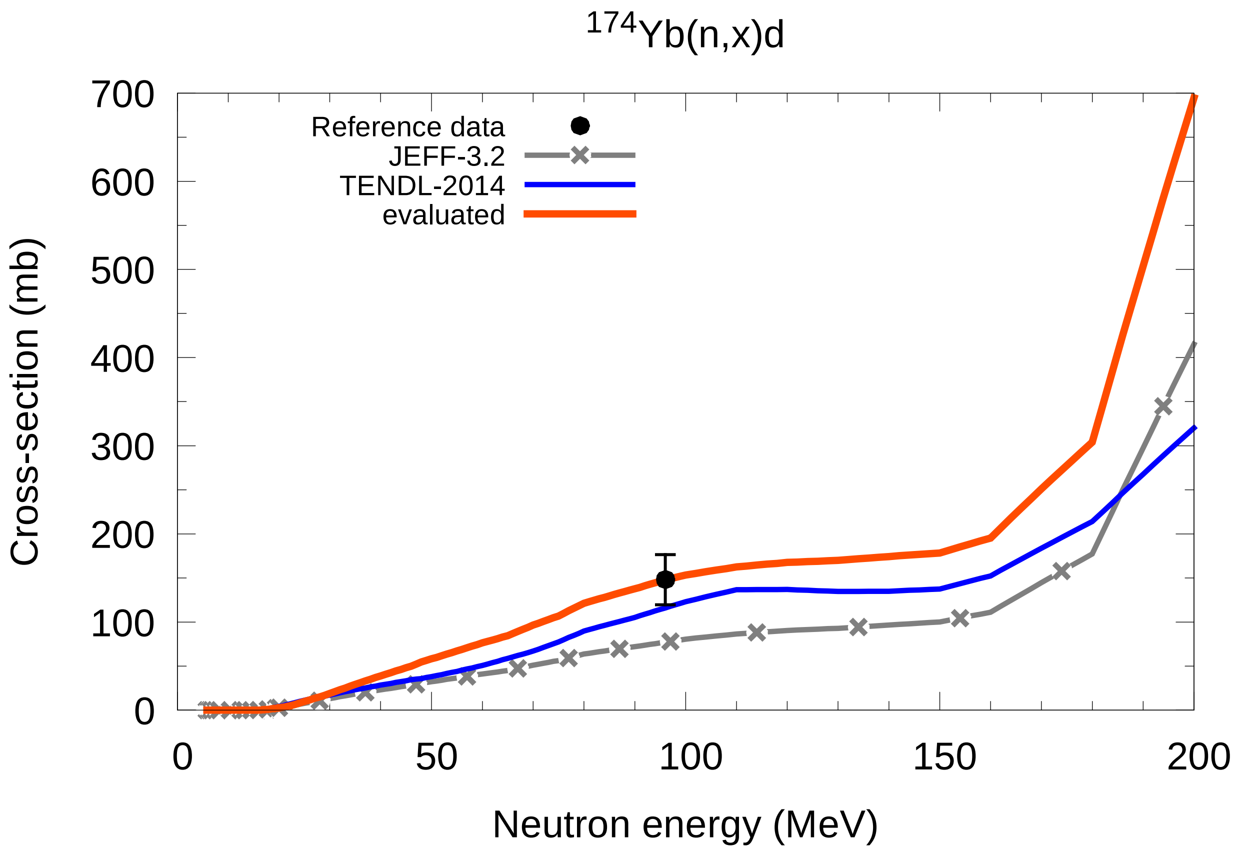
^{171}Yb(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
0
50
100
150
200



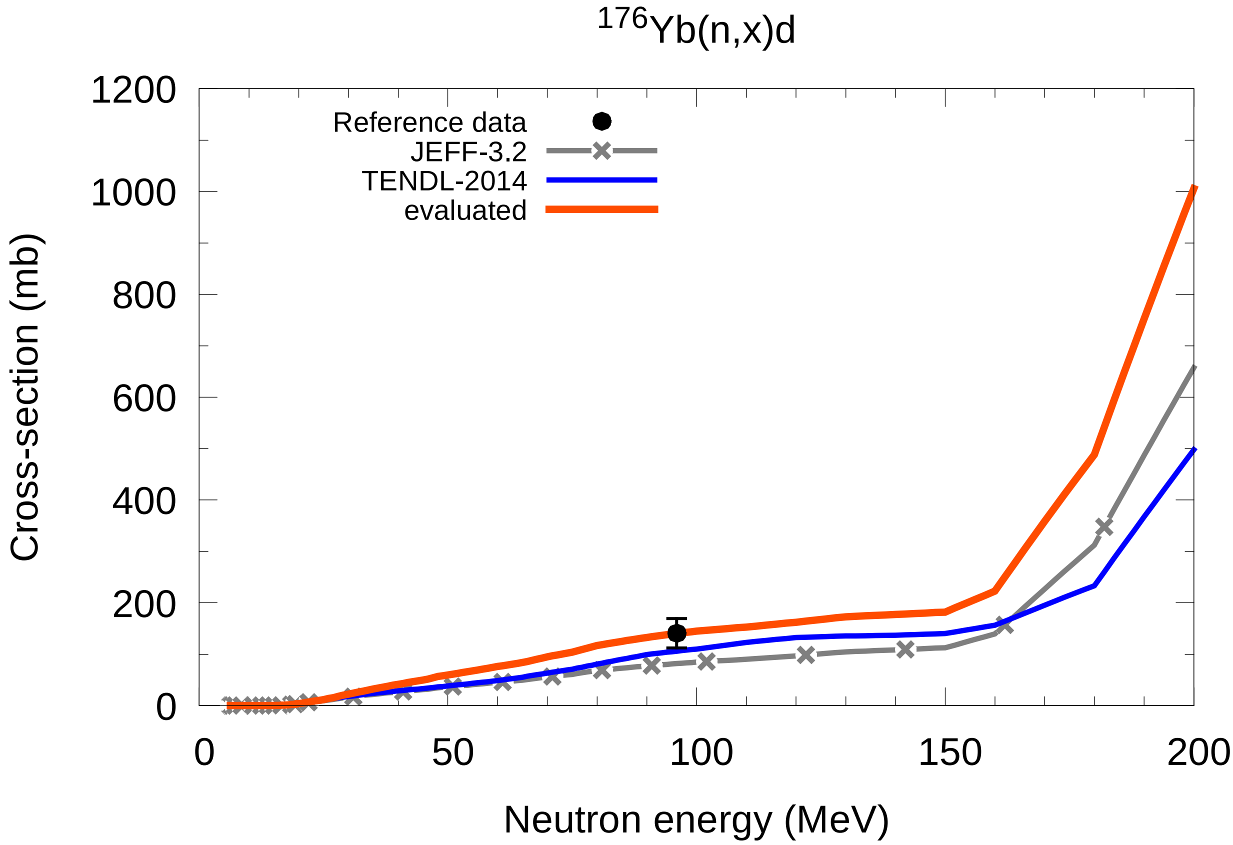
^{172}Yb(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
1000
0
50
100
150
200



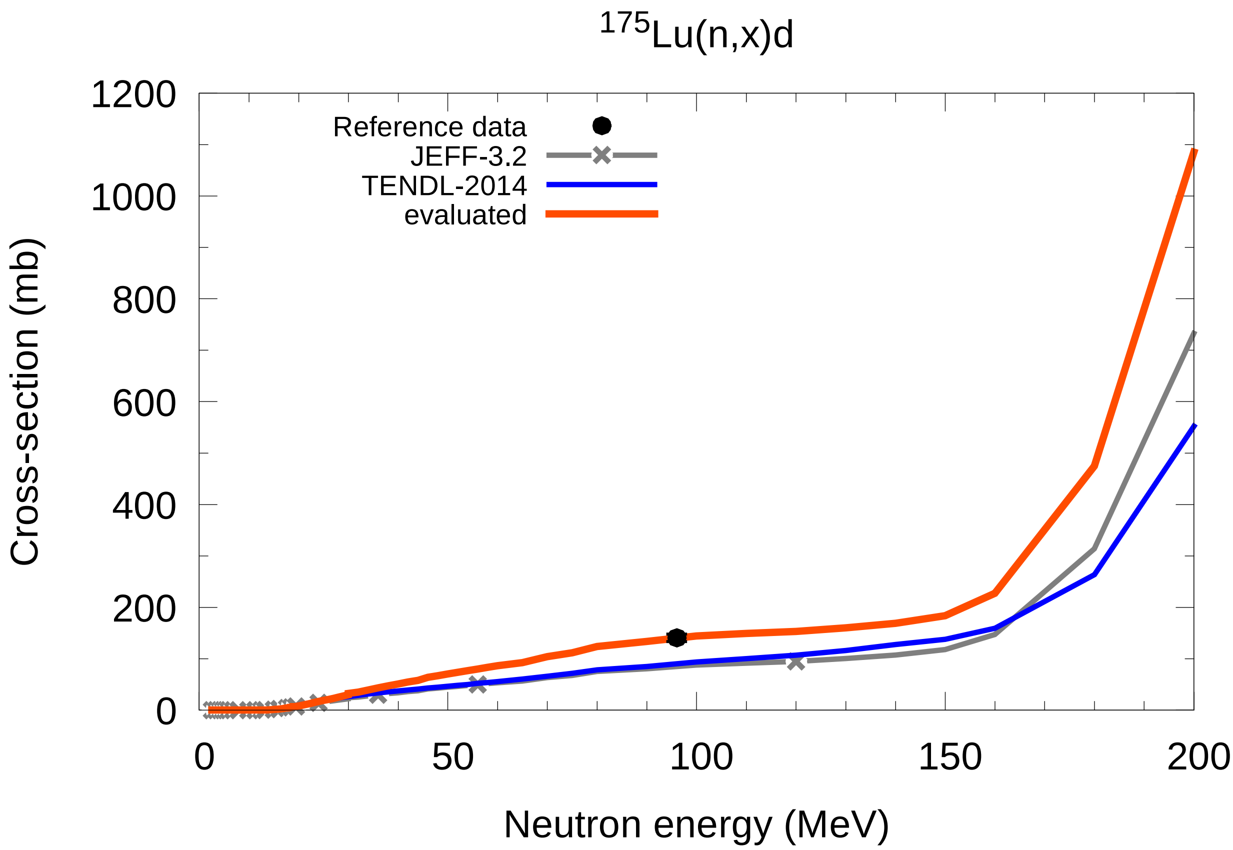
^{173}Yb(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
1000
0
50
100
150
200



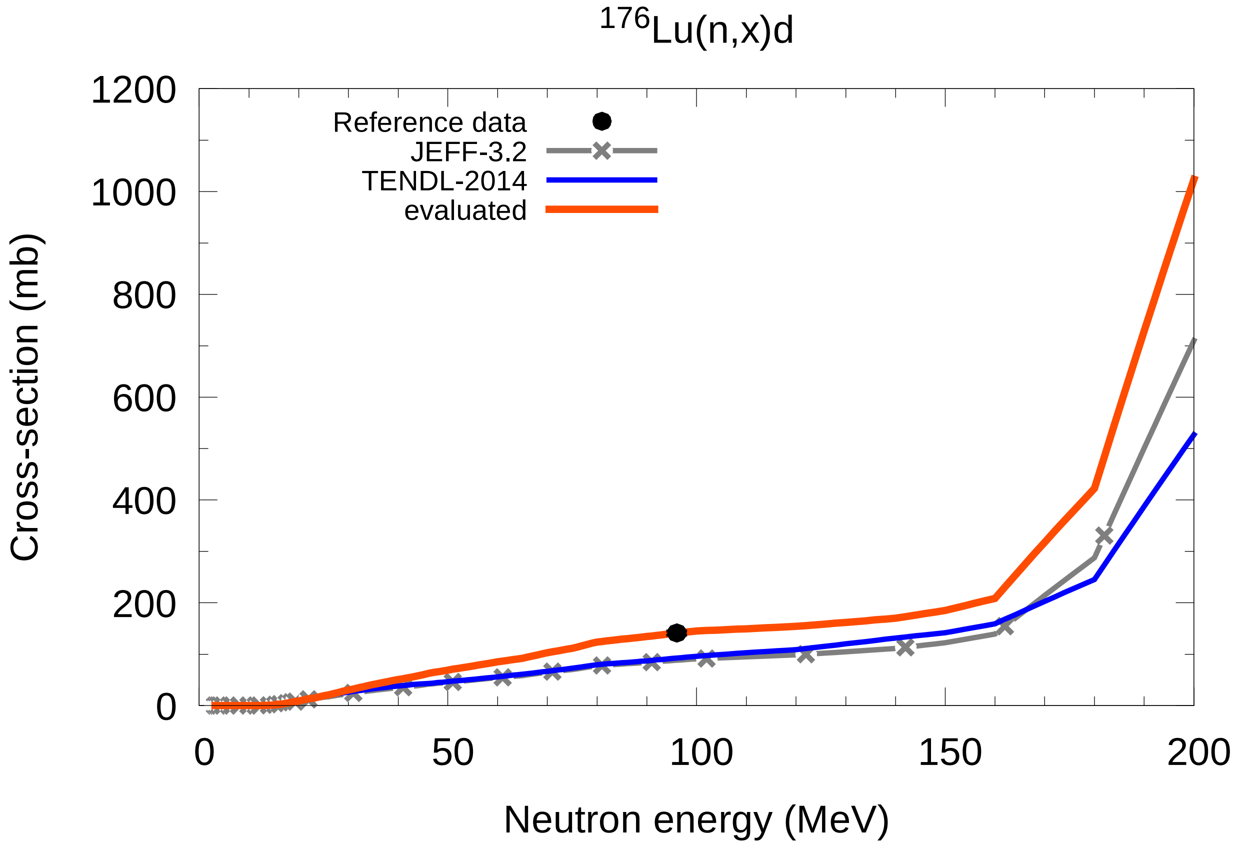
^{174}Yb(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200



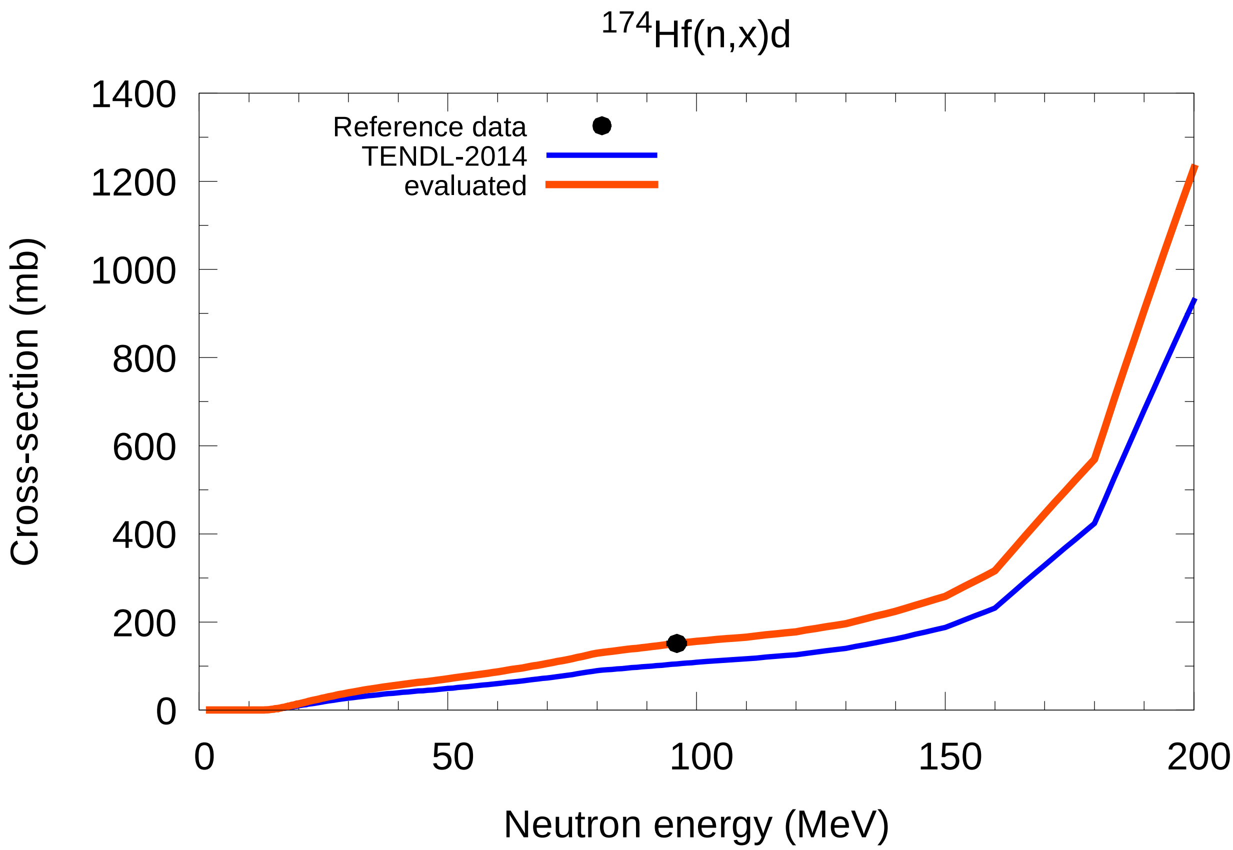
^{176}Yb(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
0
50
100
150
200



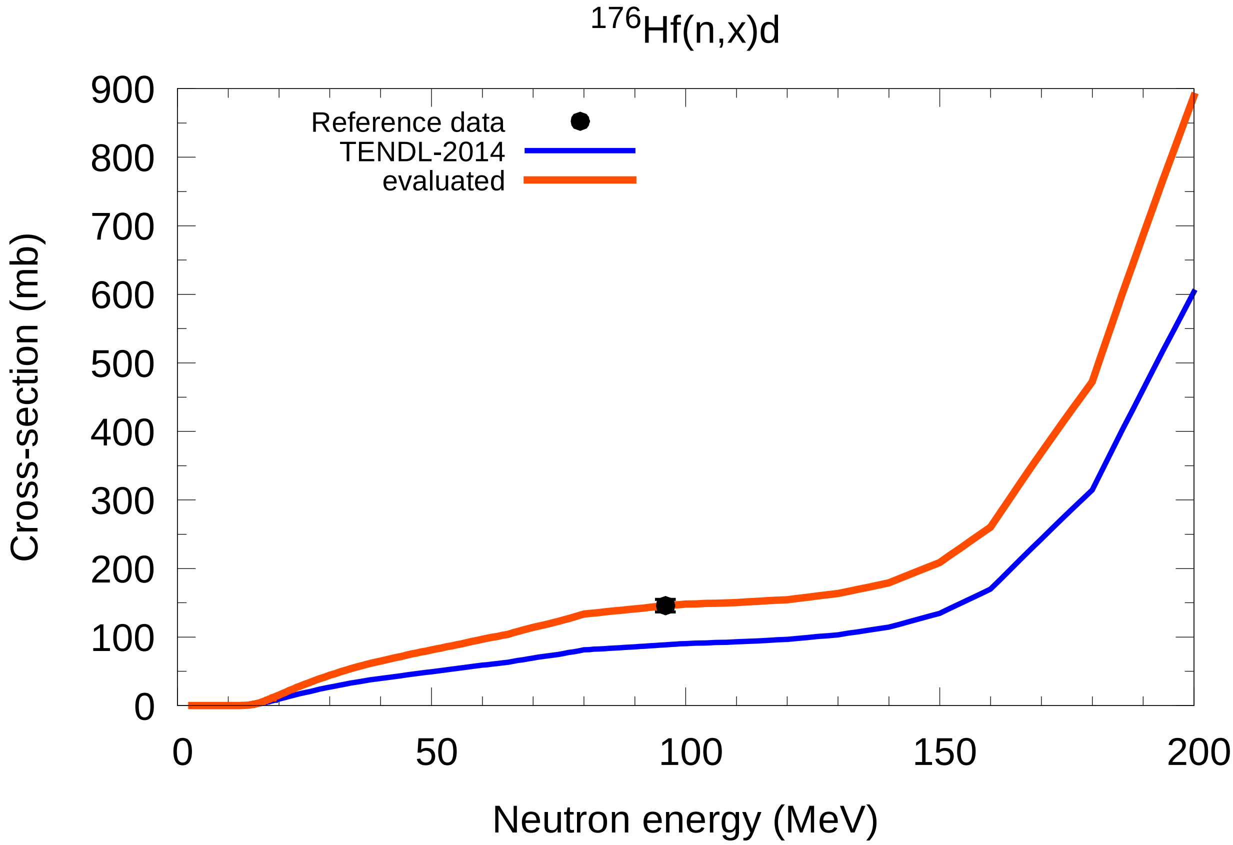
^{175}Lu(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
0
50
100
150
200

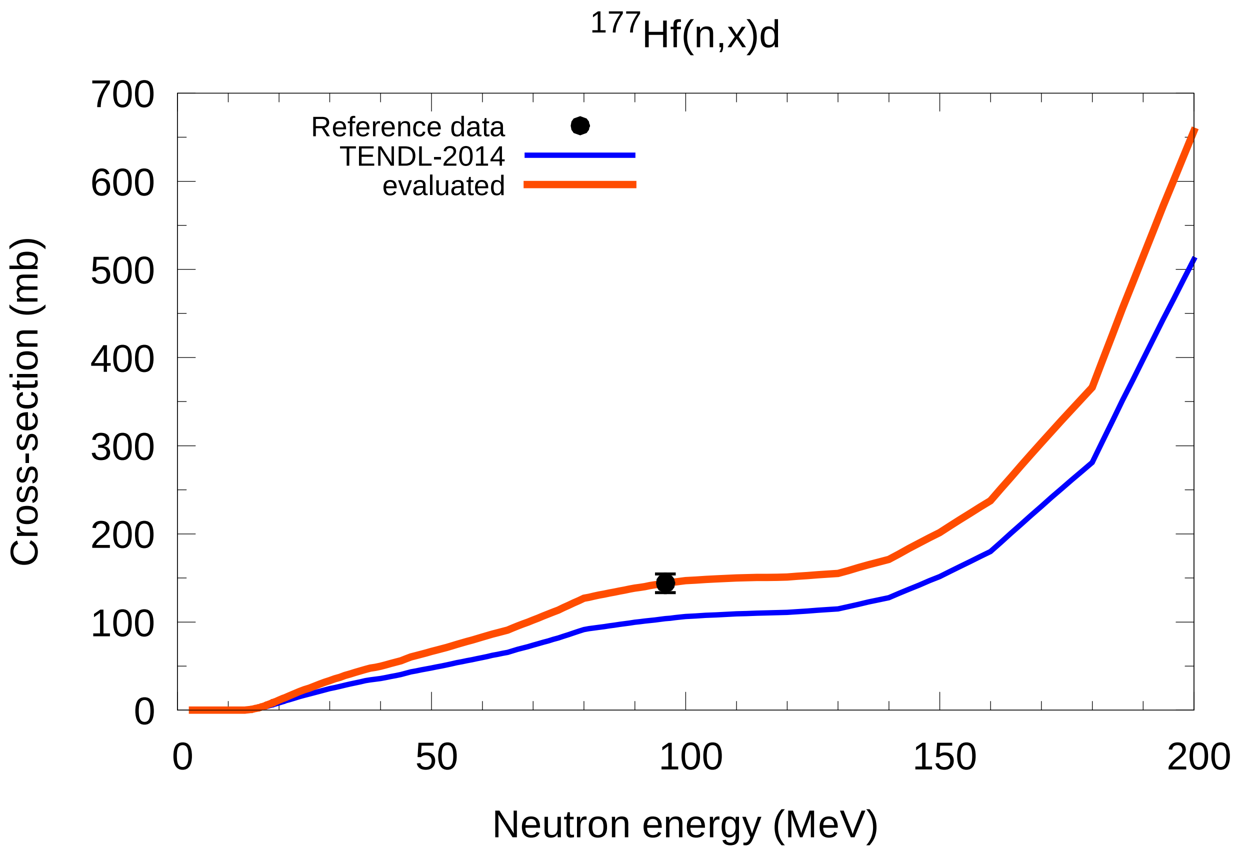


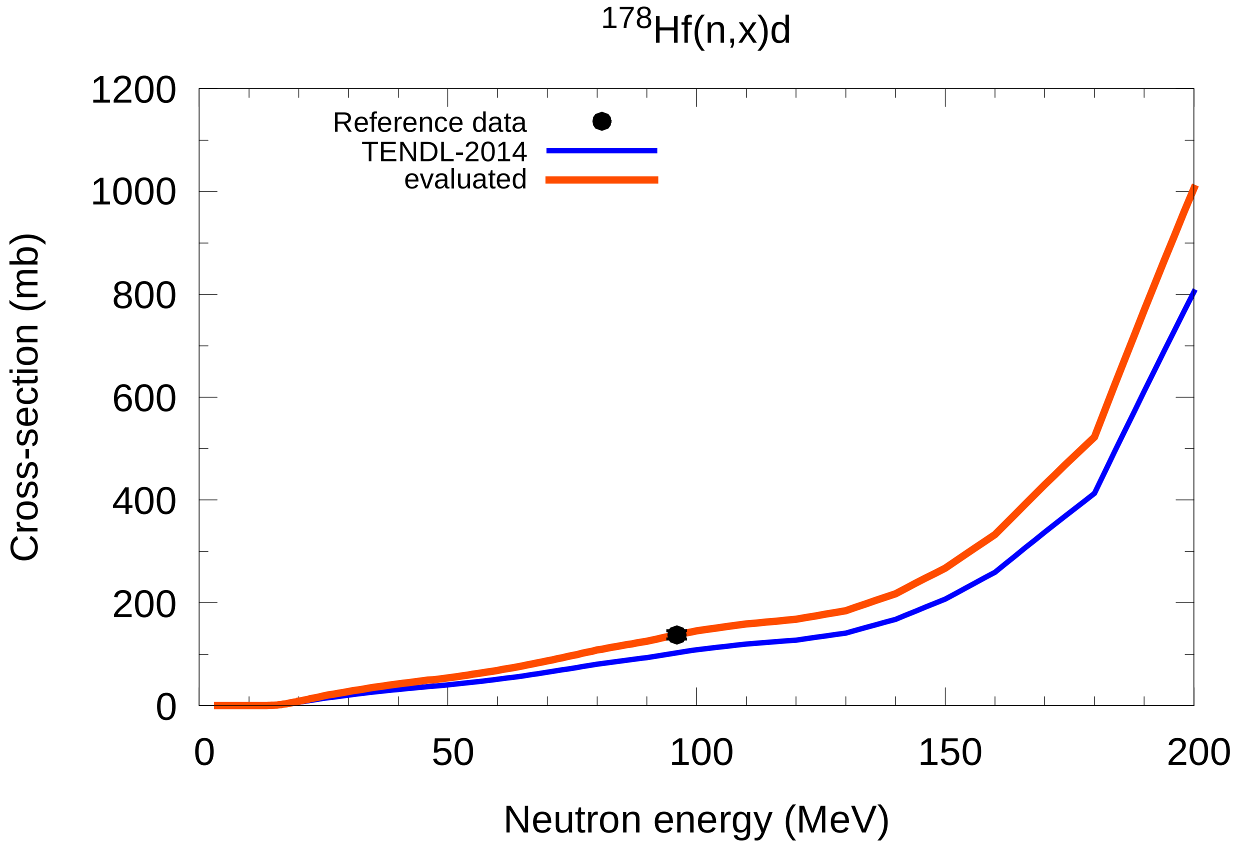
^{176}Lu(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
0
50
100
150
200



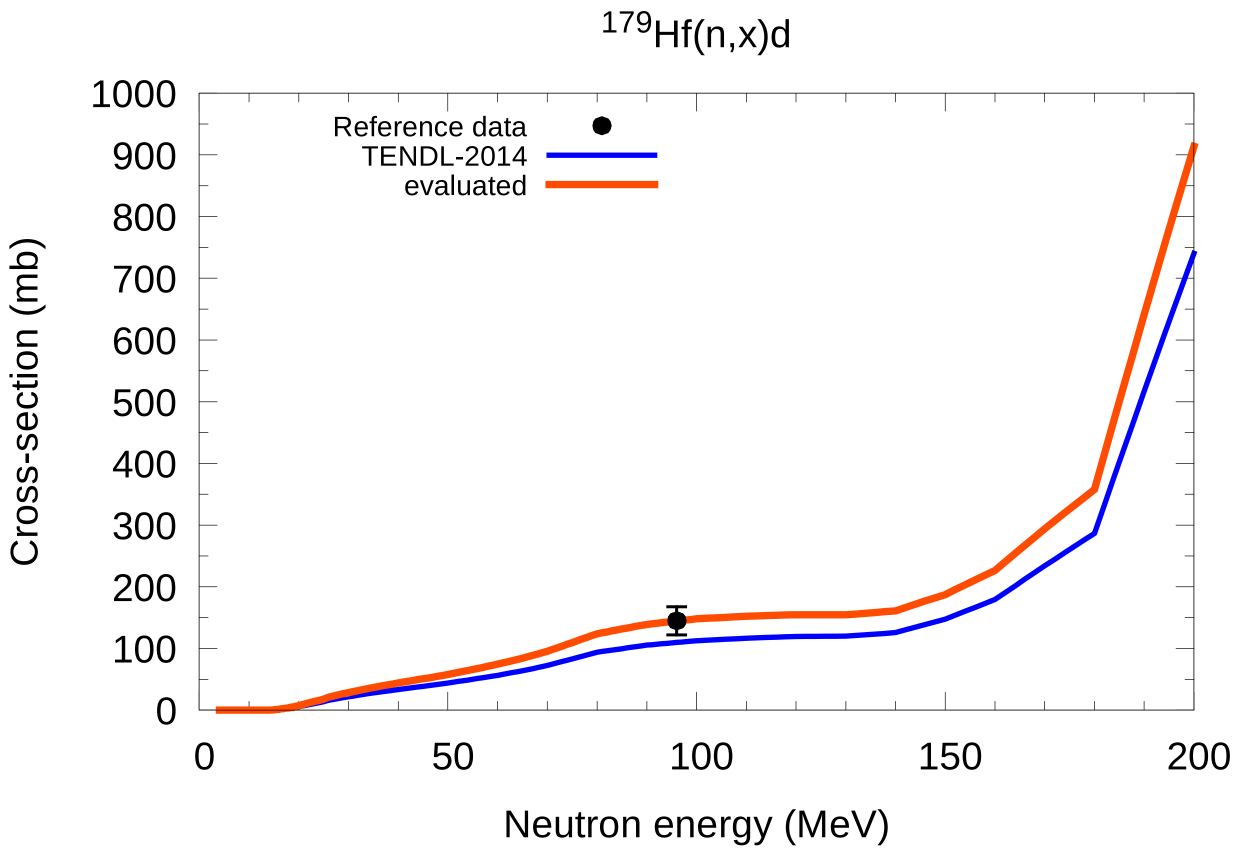
^{174}Hf(n,x)d
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
1400
0
50
100
150
200


$^{176}Hf(n,x)d$
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
0
50
100
150
200

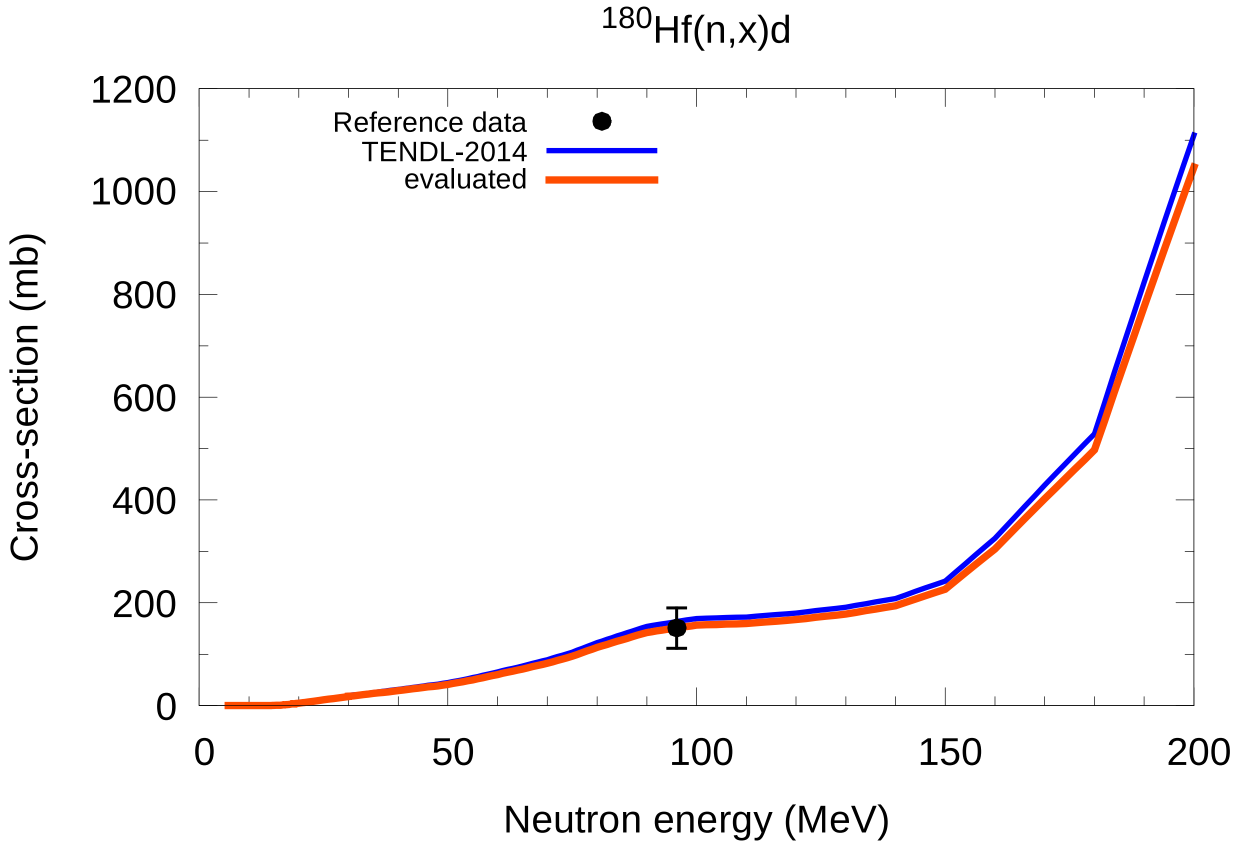

$^{177}Hf(n,x)d$
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200



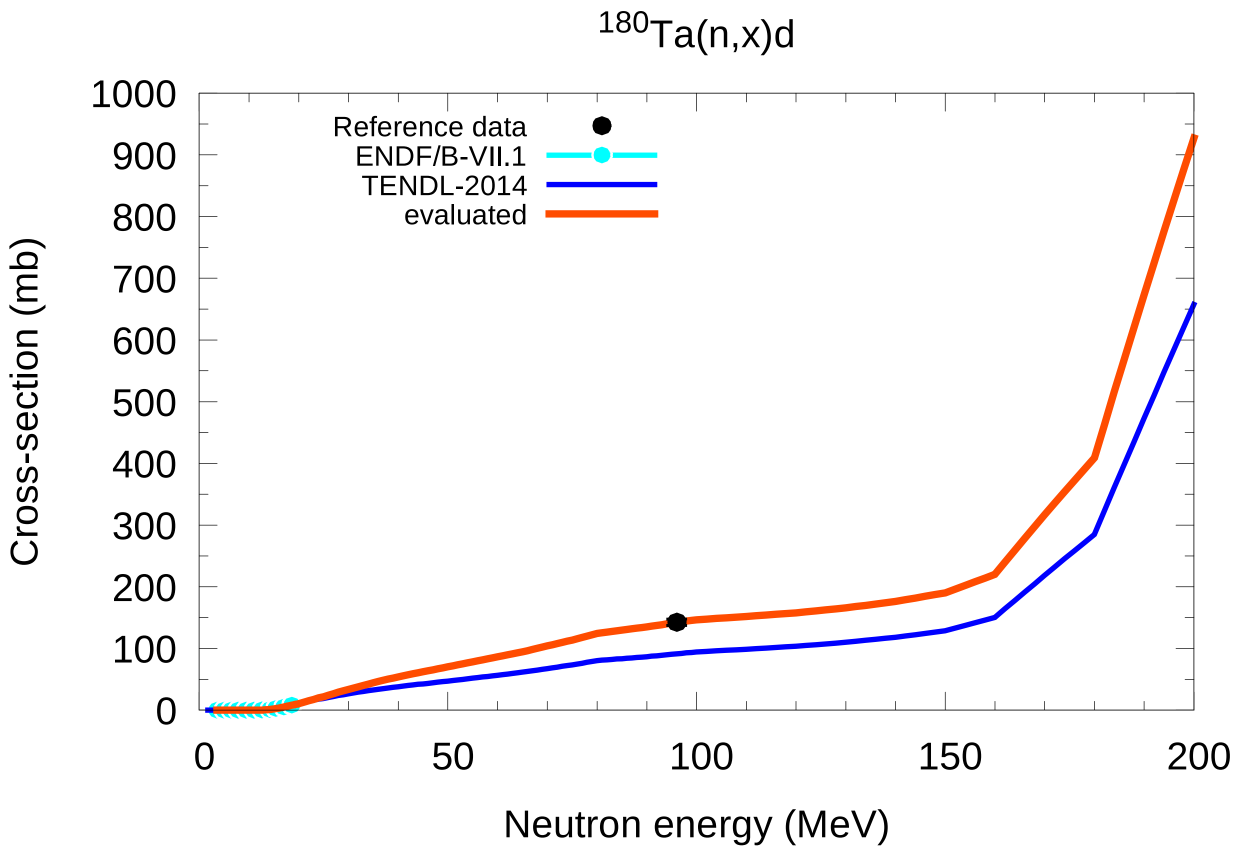
^{178}Hf(n,x)d
Reference data
TENDL-2014
evaluated
Cross-section (mb)
0
200
400
600
800
1000
1200
0
50
100
150
200
Neutron energy (MeV)



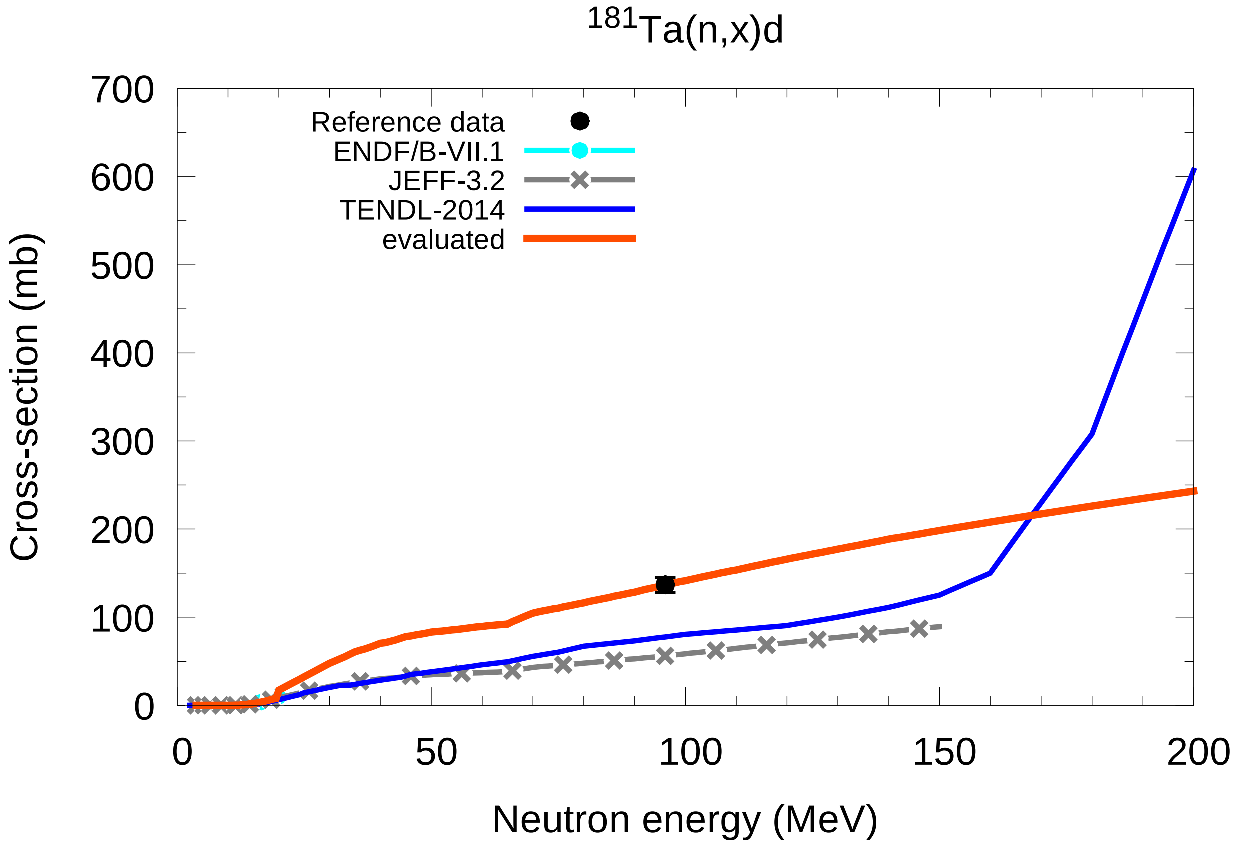
^{179}Hf(n,x)d
Reference data
TENDL-2014
evaluated
Cross-section (mb)
0
100
200
300
400
500
600
700
800
900
1000
0
50
100
150
200
Neutron energy (MeV)



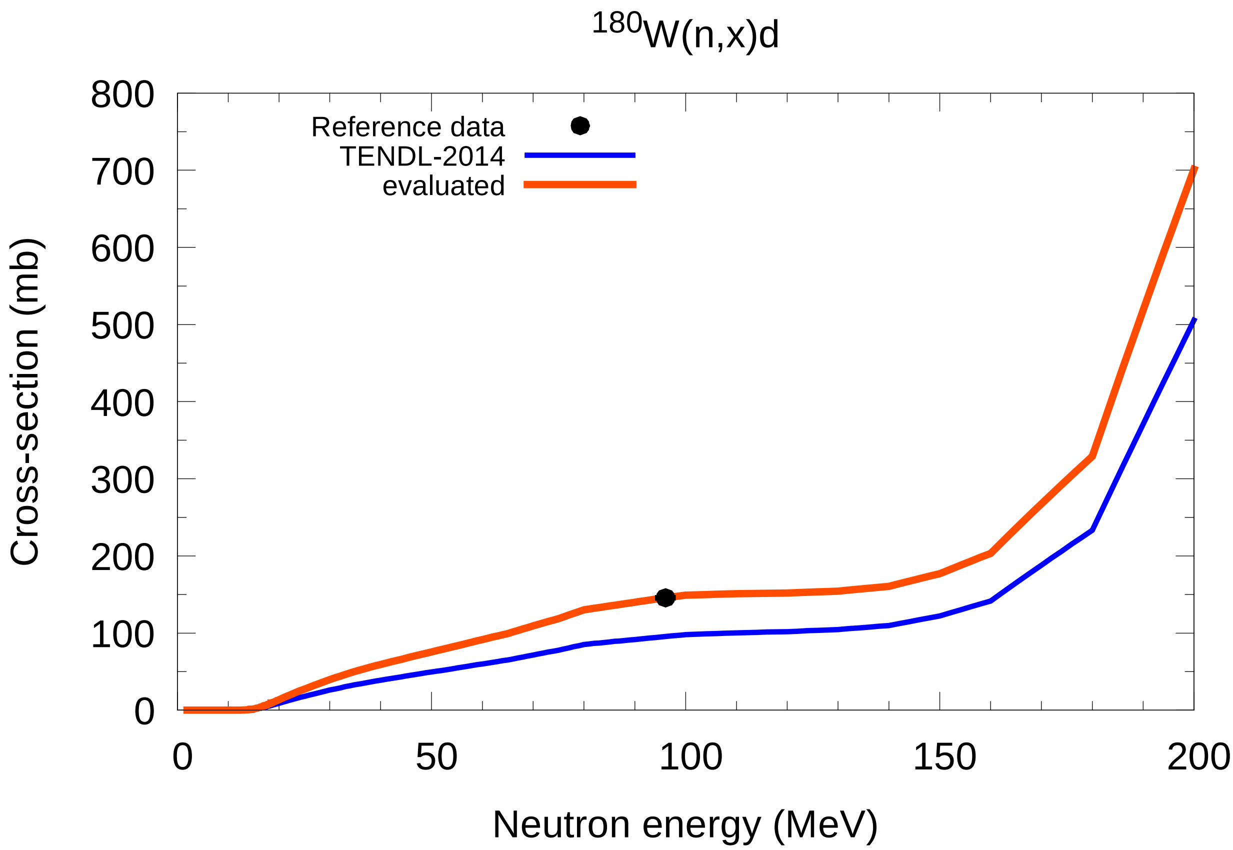
^{180}Hf(n,x)d
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
0
50
100
150
200



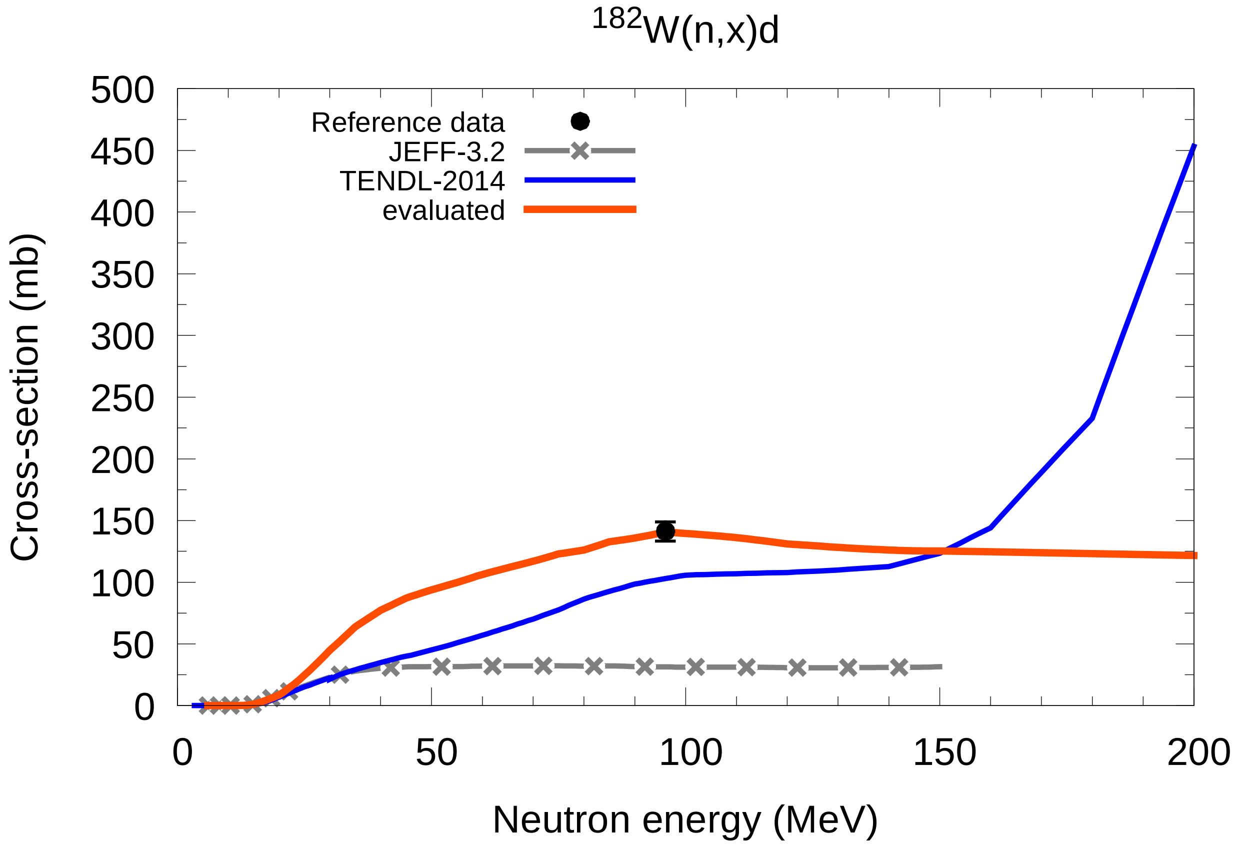
^{180}Ta(n,x)d
Reference data
ENDF/B-VII.1
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
1000
0
50
100
150
200



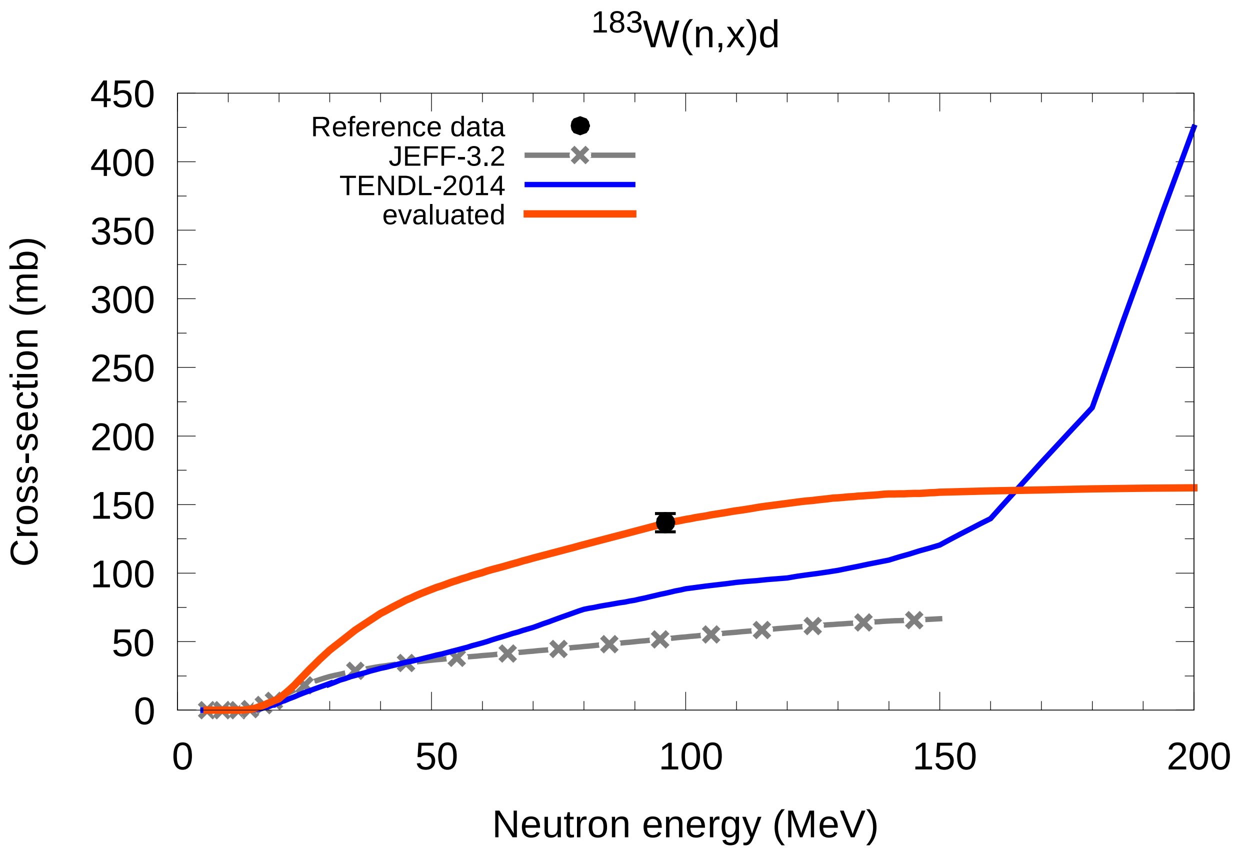
^{181}Ta(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
50
150



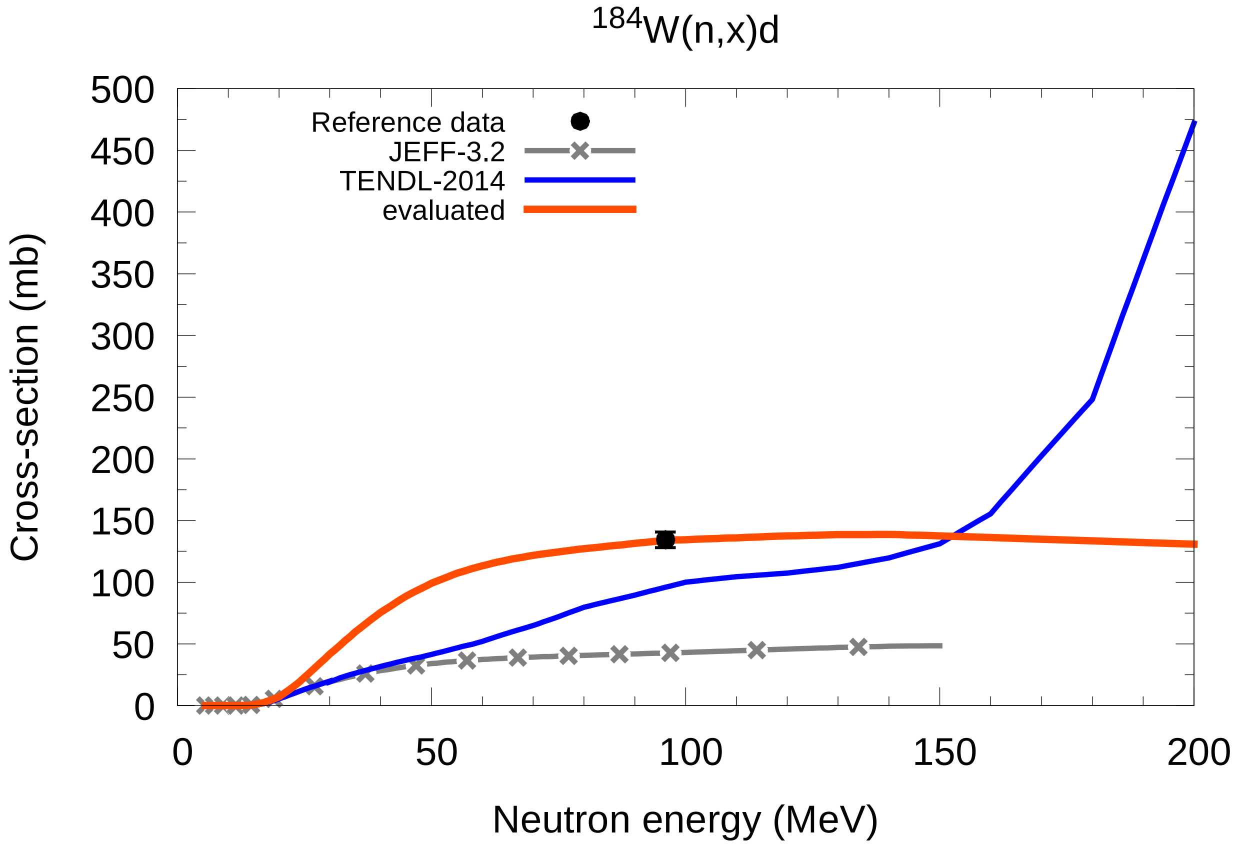
^{180}W(n,x)d
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
50
150



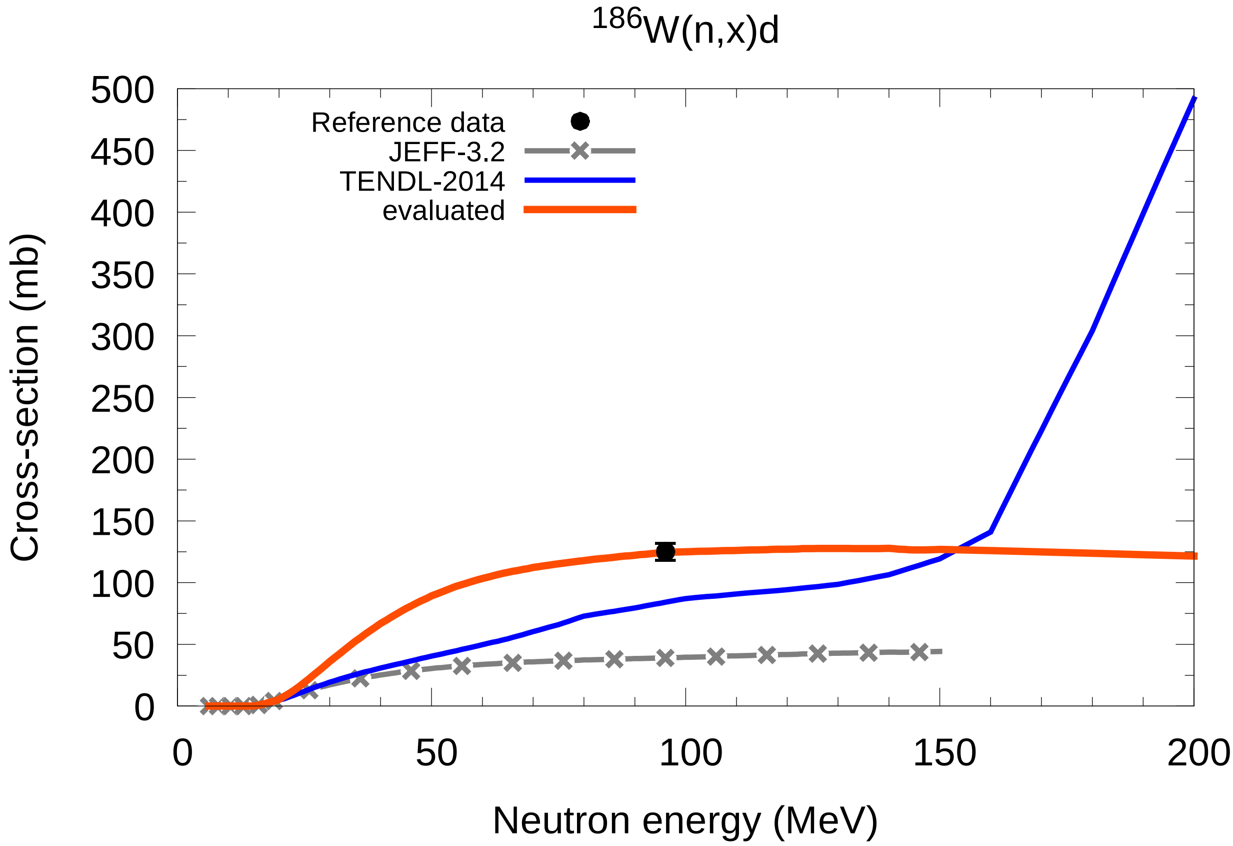
^{182}W(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



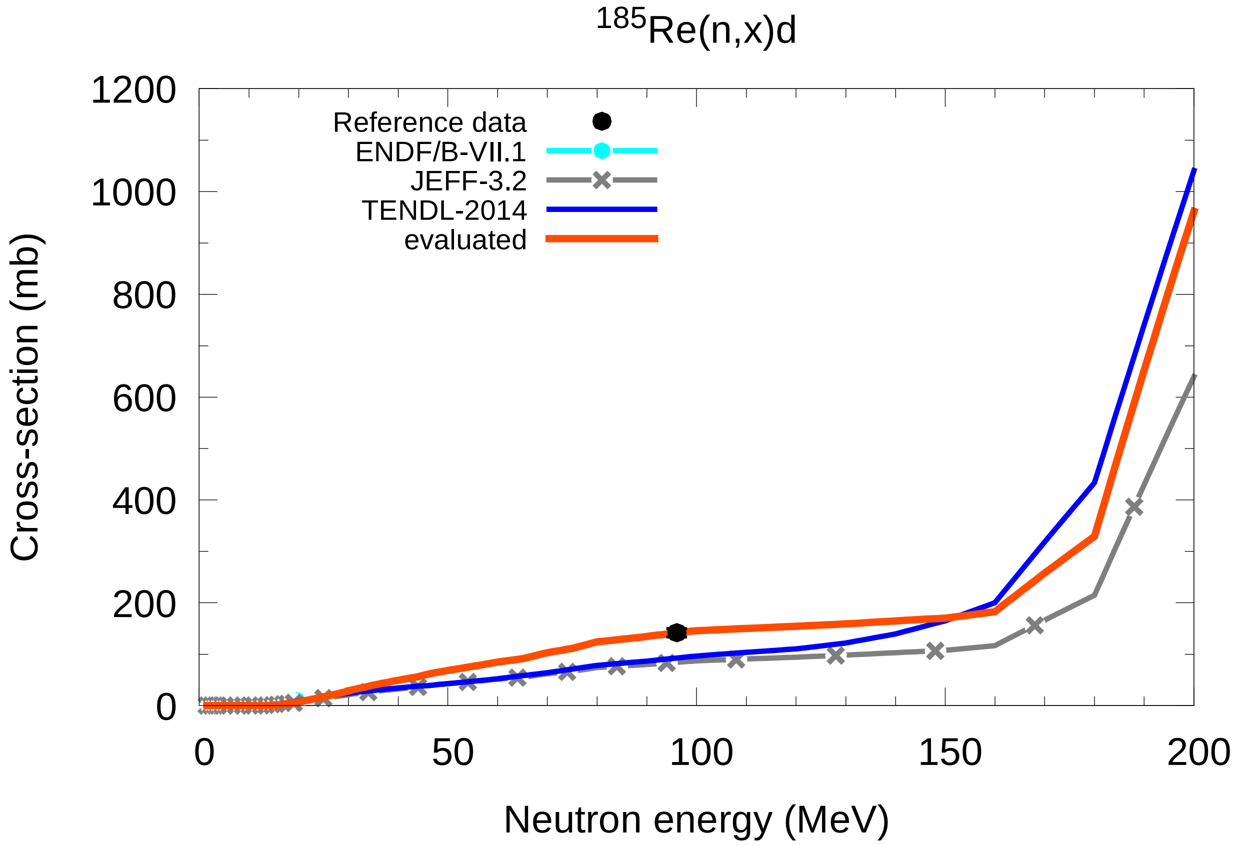
^{183}W(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



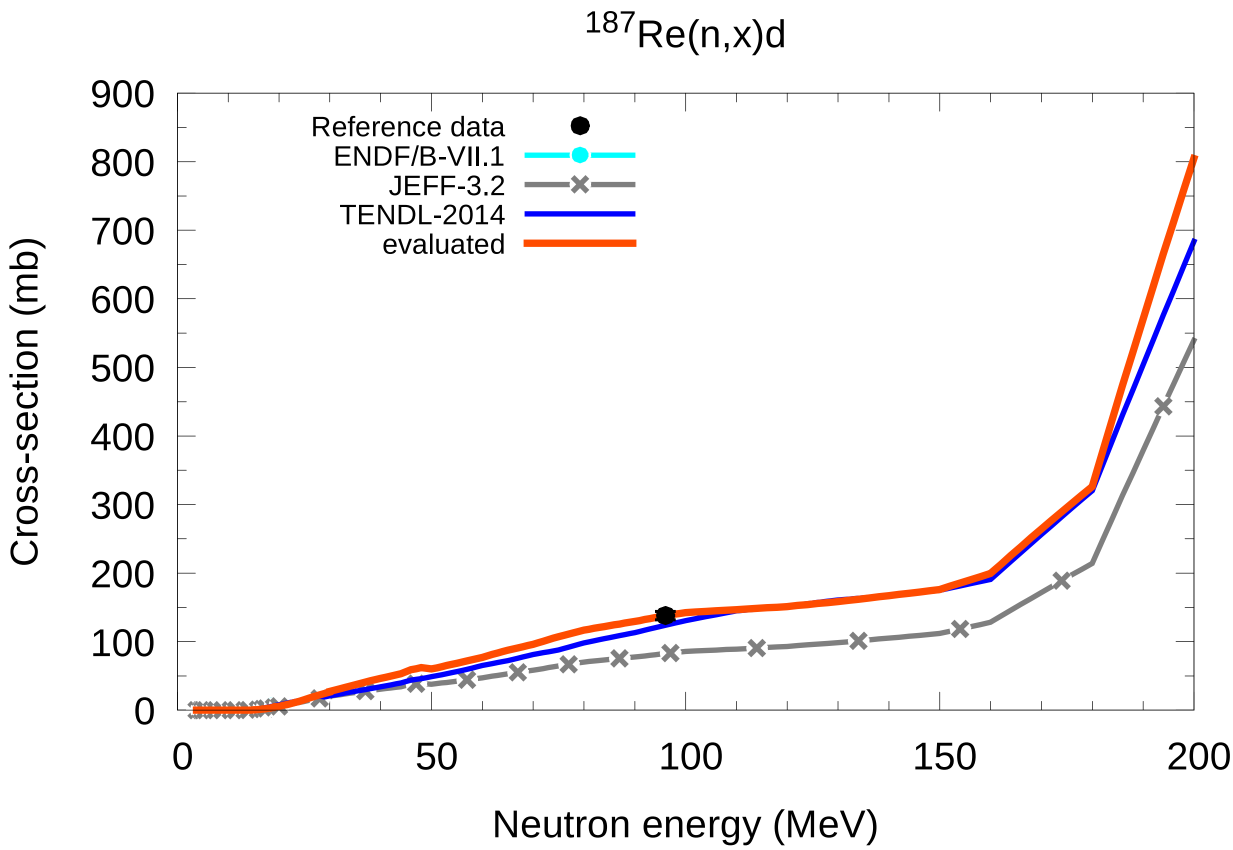
$^{184}W(n,x)d$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500
0
50
100
150
200



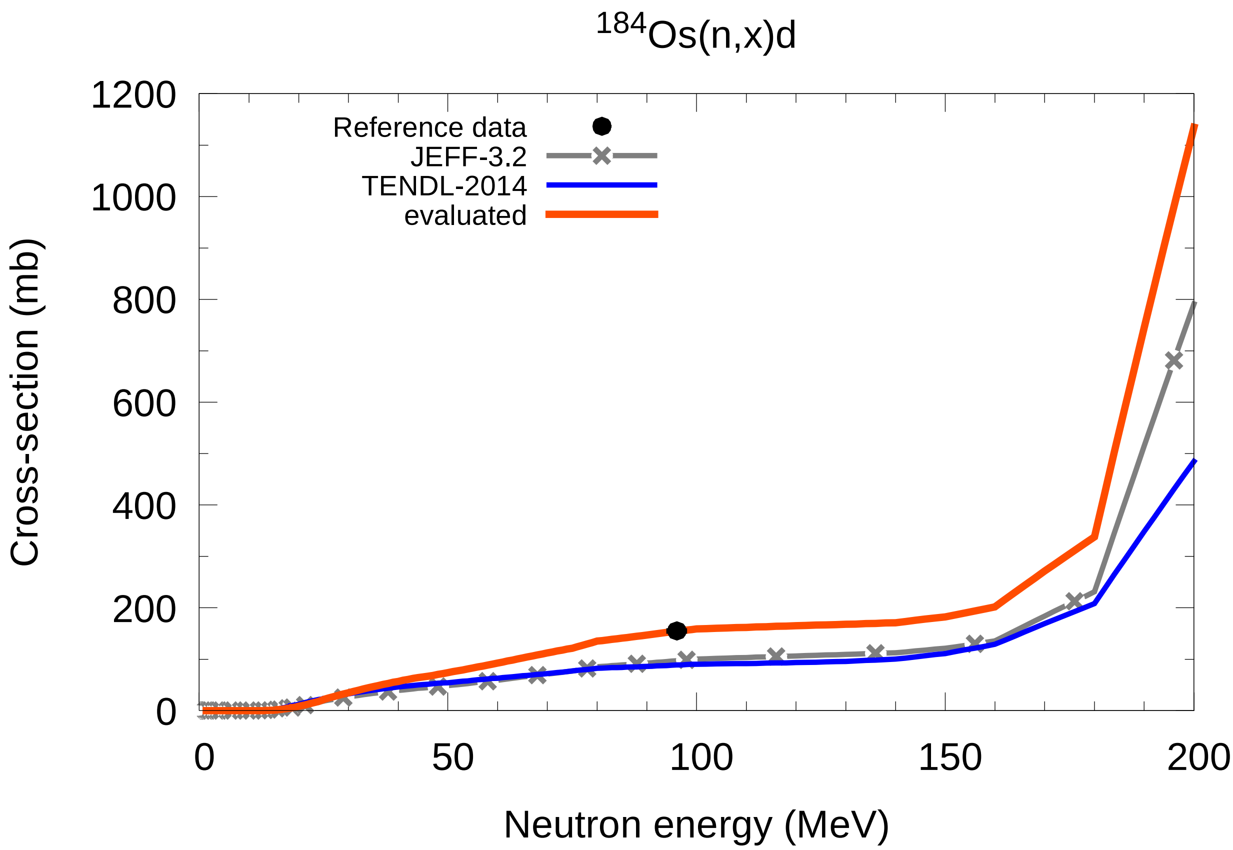
$^{186}W(n,x)d$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500
0
50
100
150
200



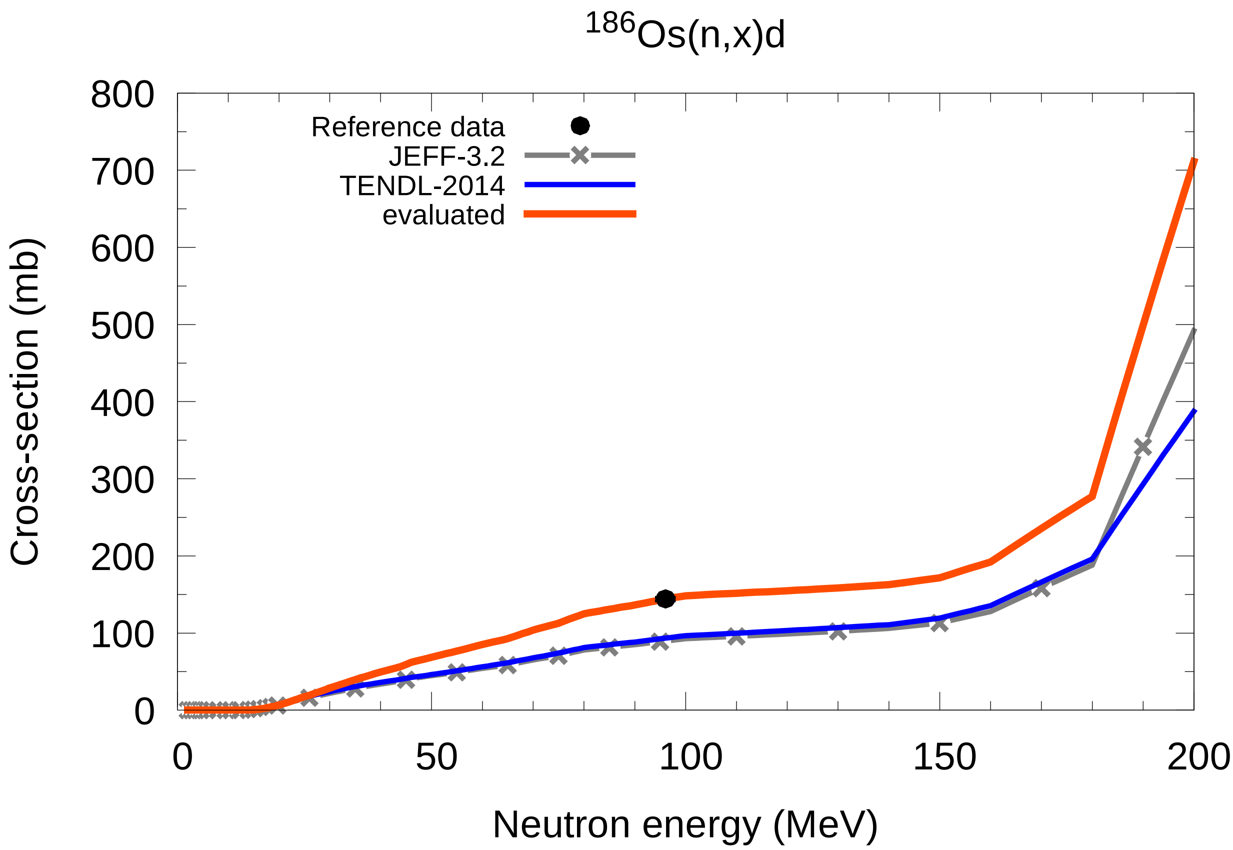
^{185}Re(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
0
50
100
150
200



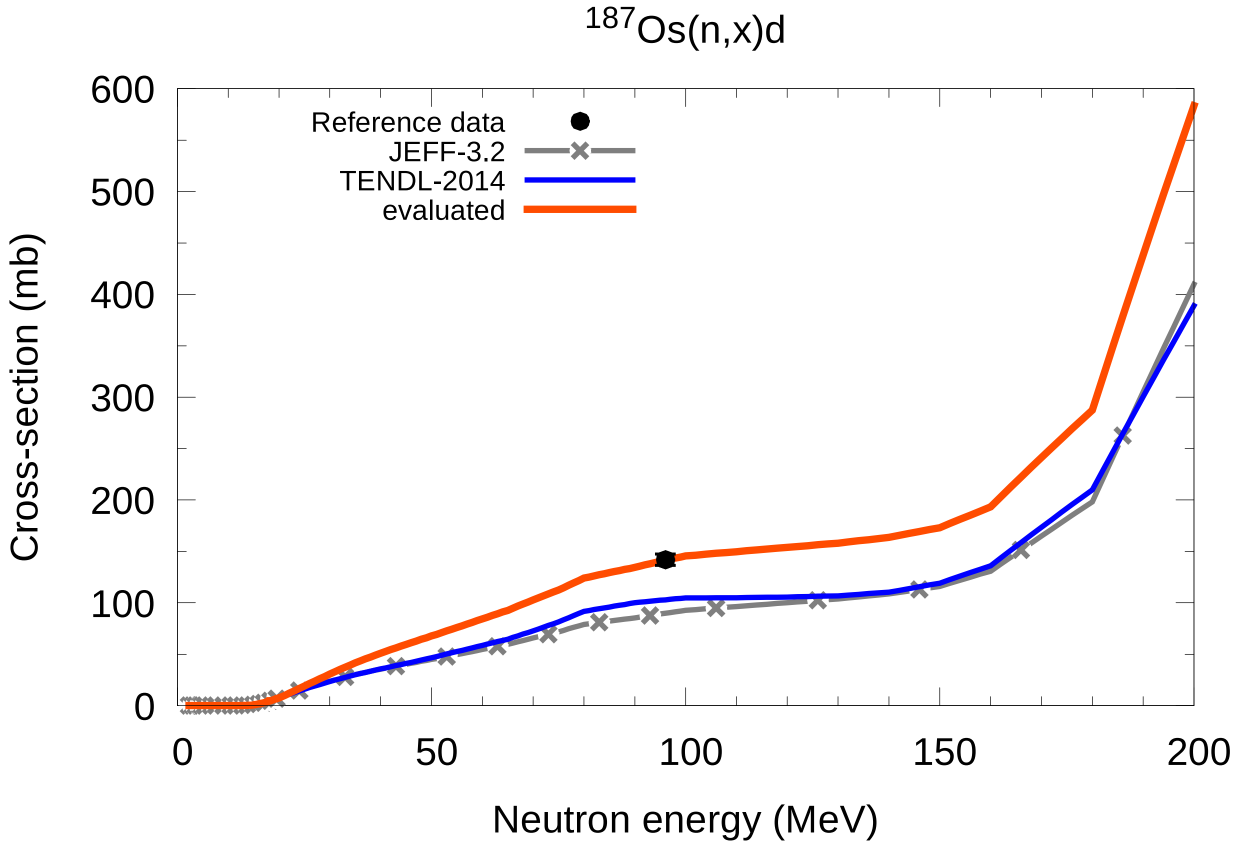
^{187}Re(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
0
50
100
150
200



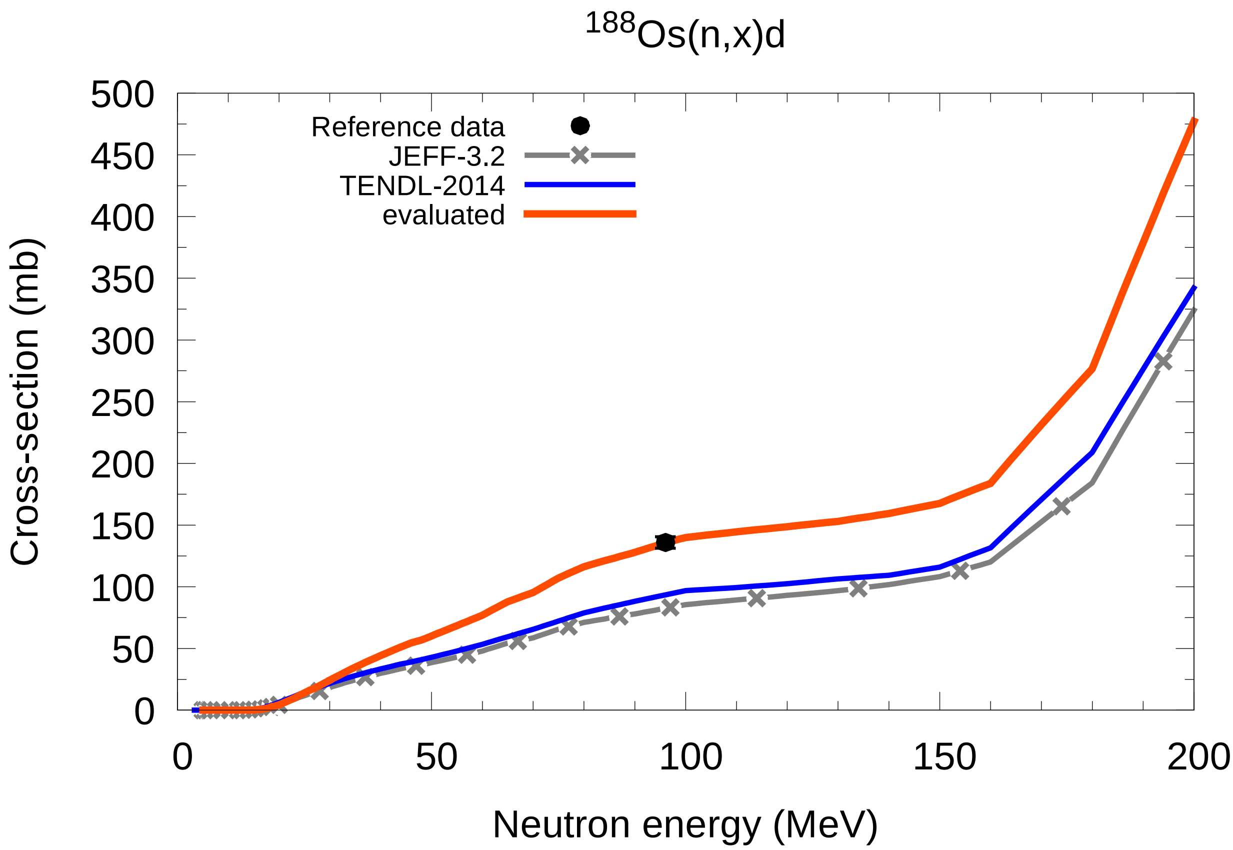
^{184}Os(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
0
50
100
150
200



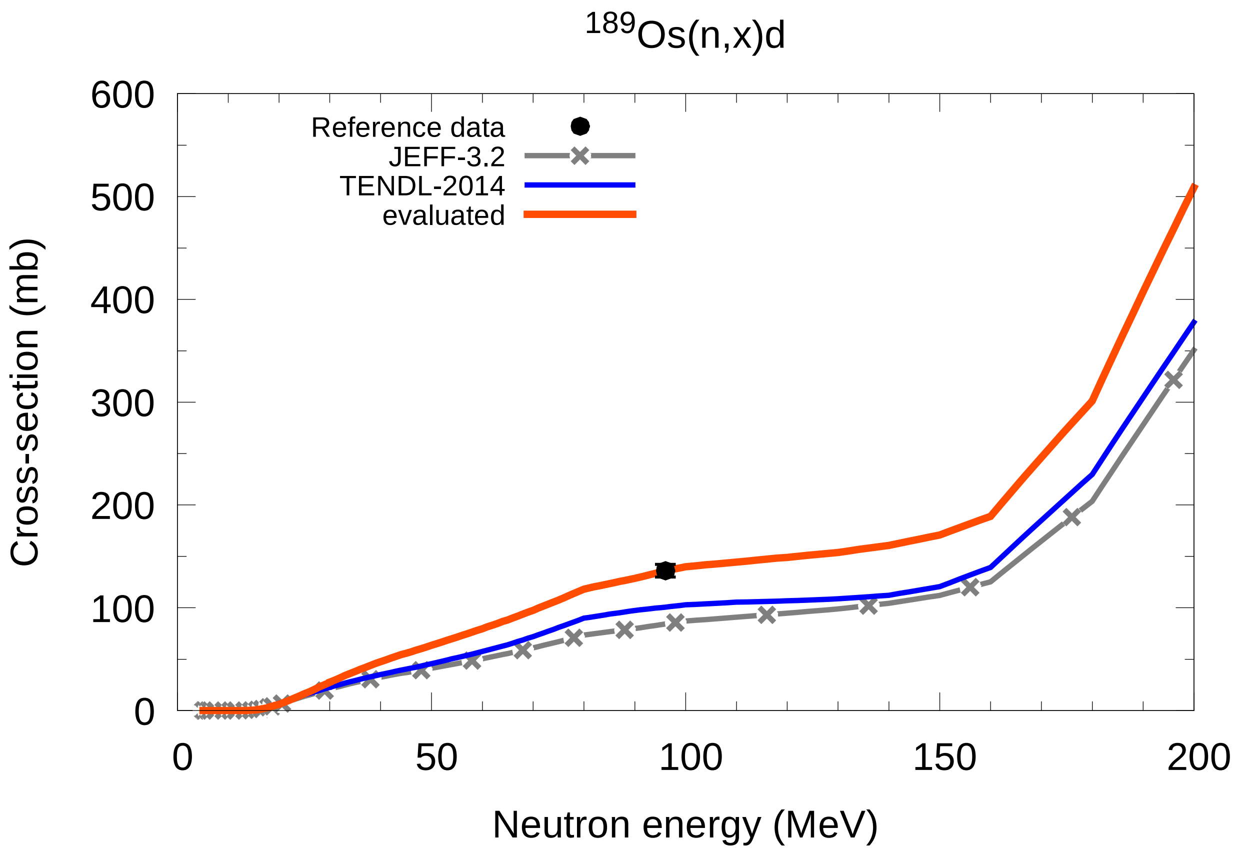
^{186}Os(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
0
50
100
150
200



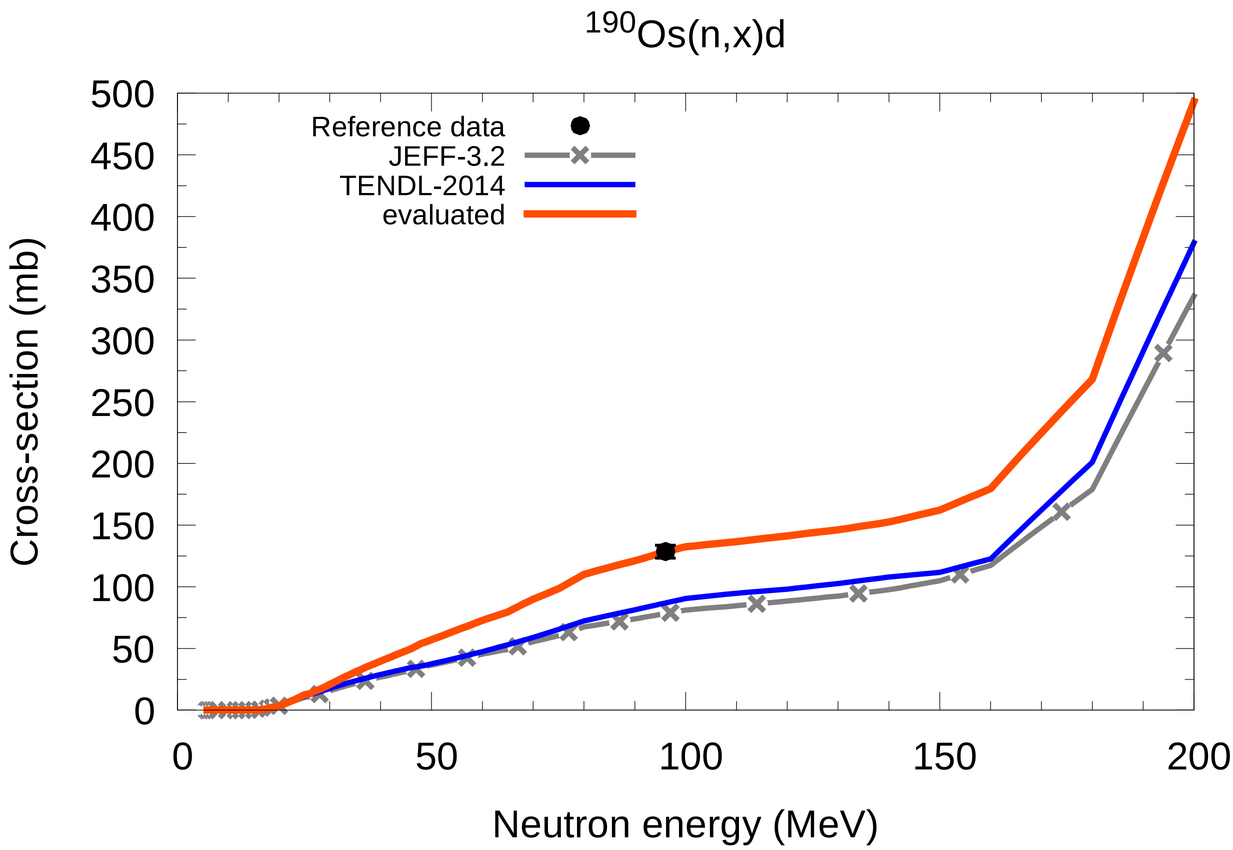
$^{187}Os(n,x)d$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



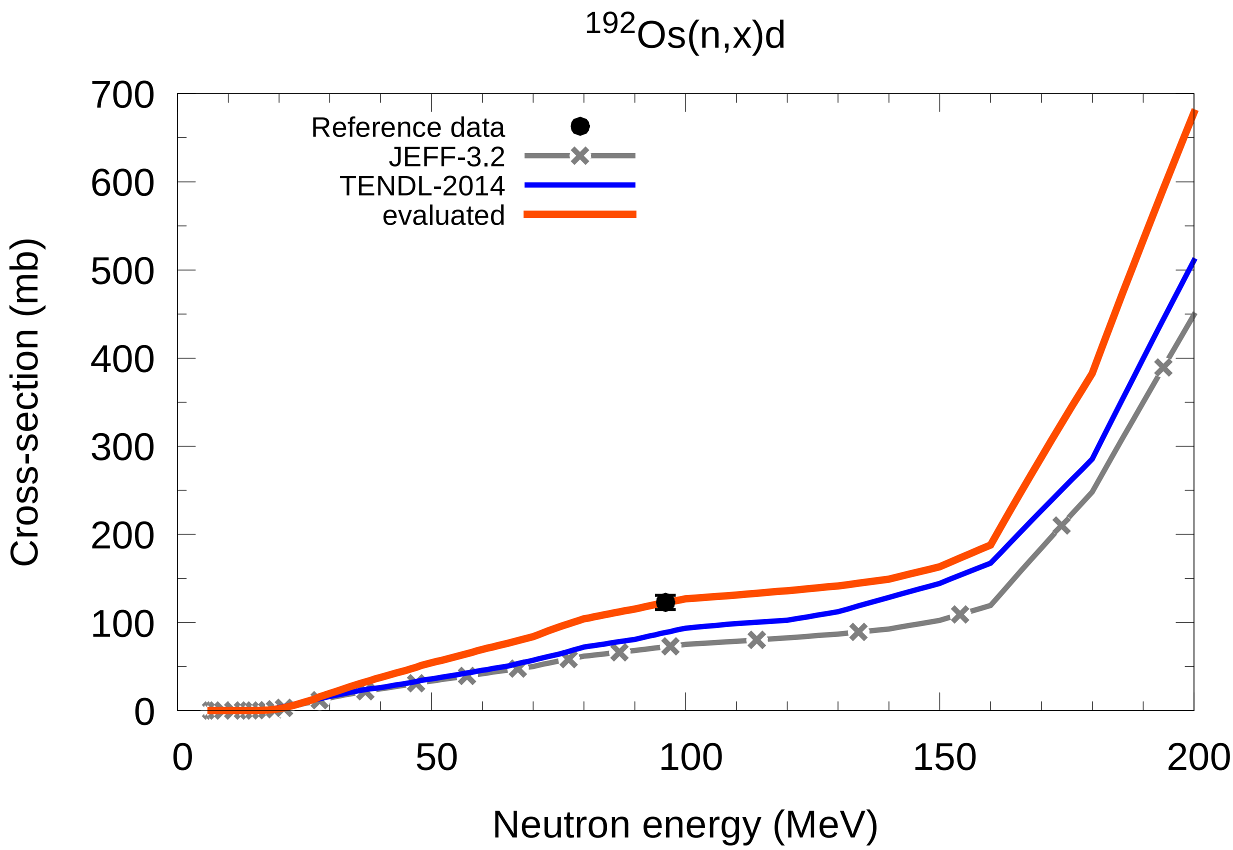
$^{188}Os(n,x)d$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500
0
50
100
150
200



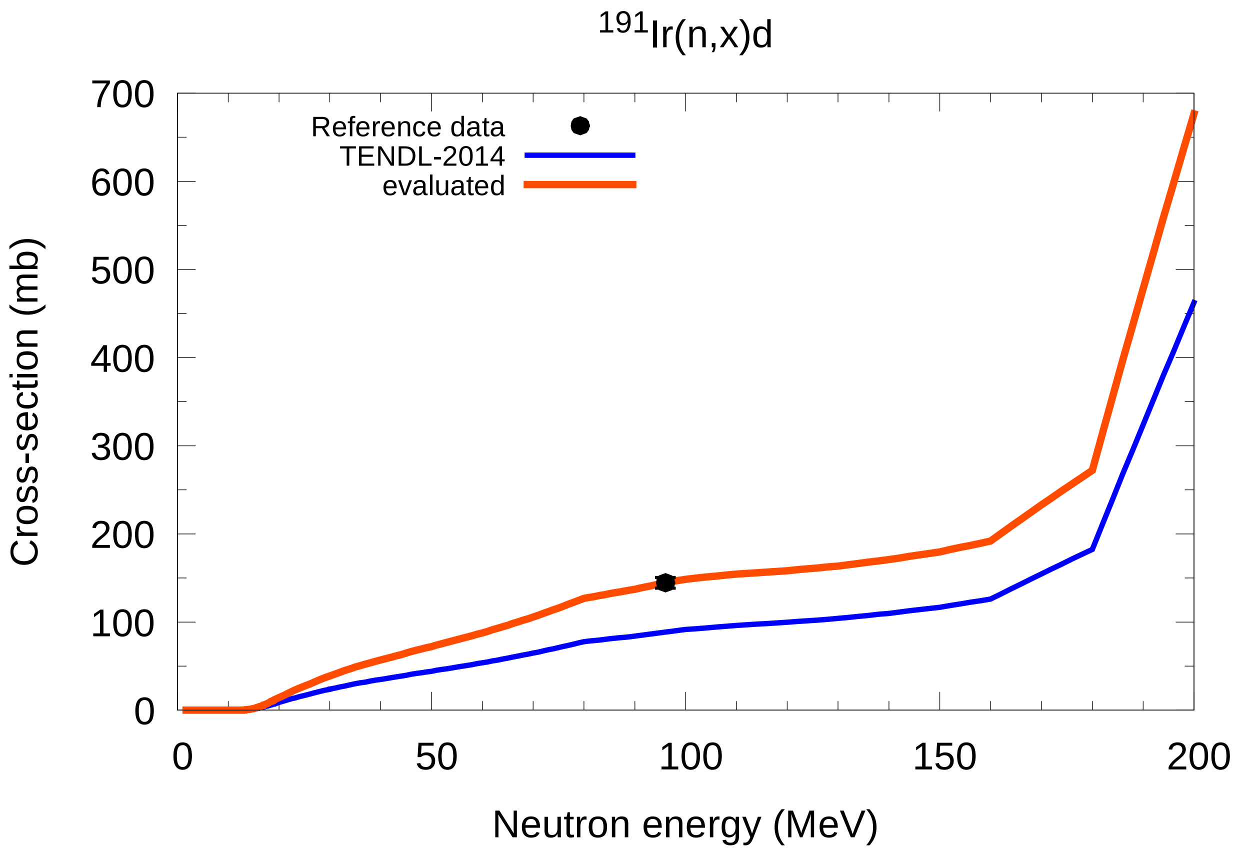
^{189}Os(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
50
150



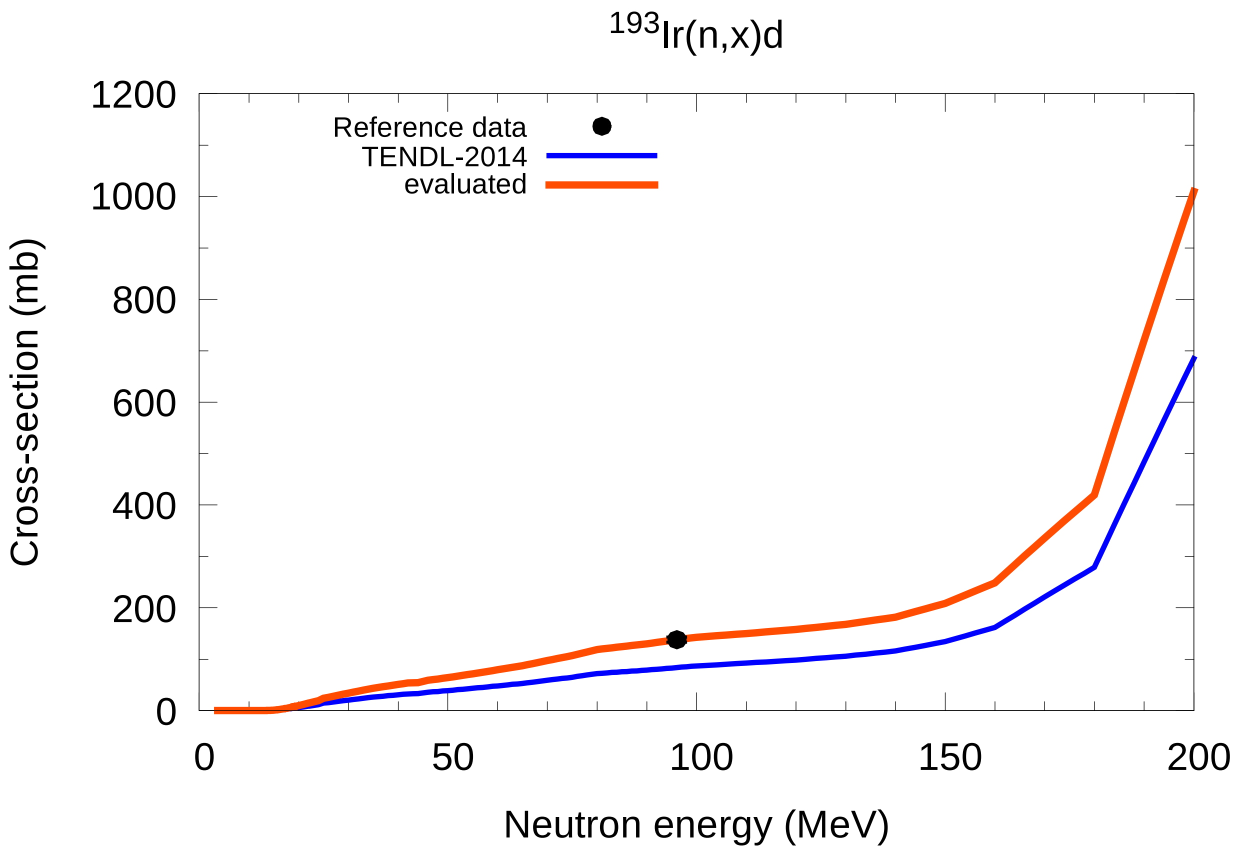
^{190}Os(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



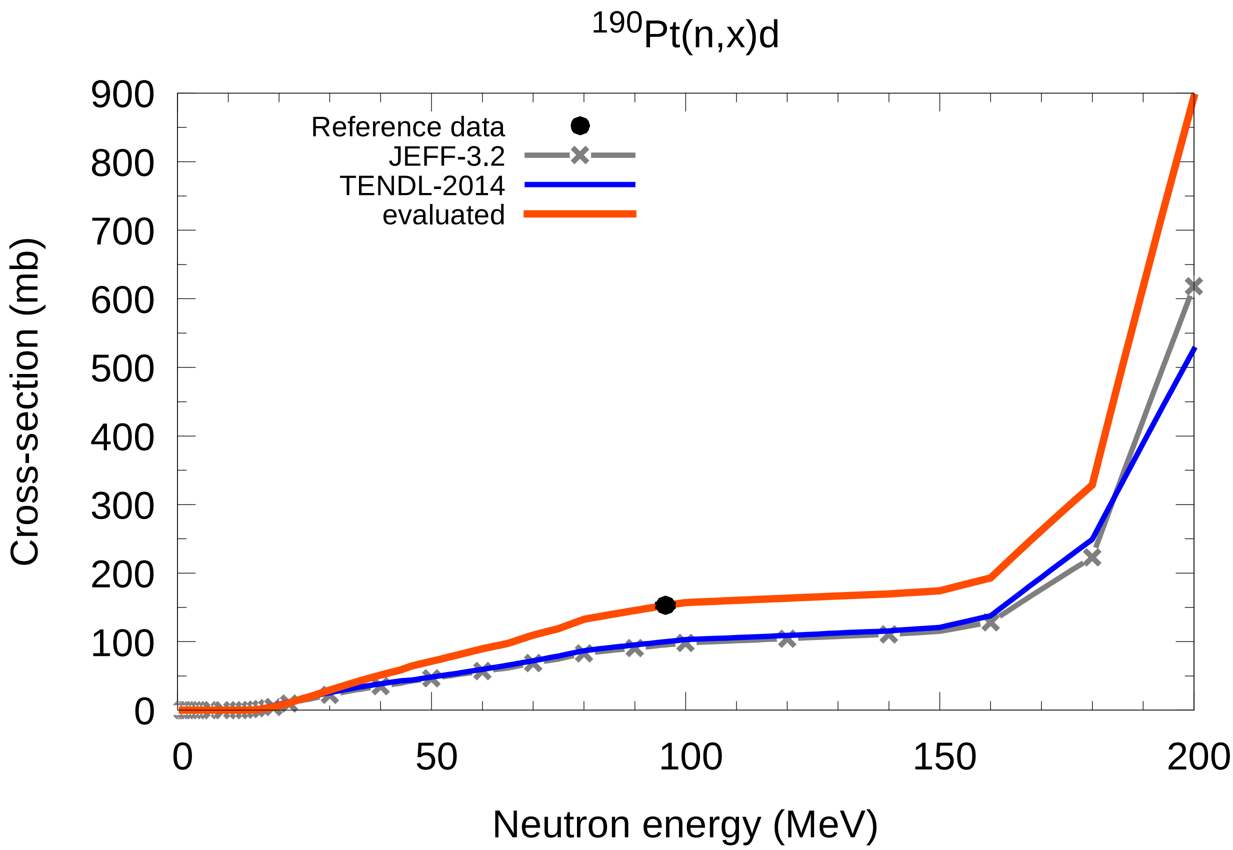
$^{192}Os(n,x)d$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200



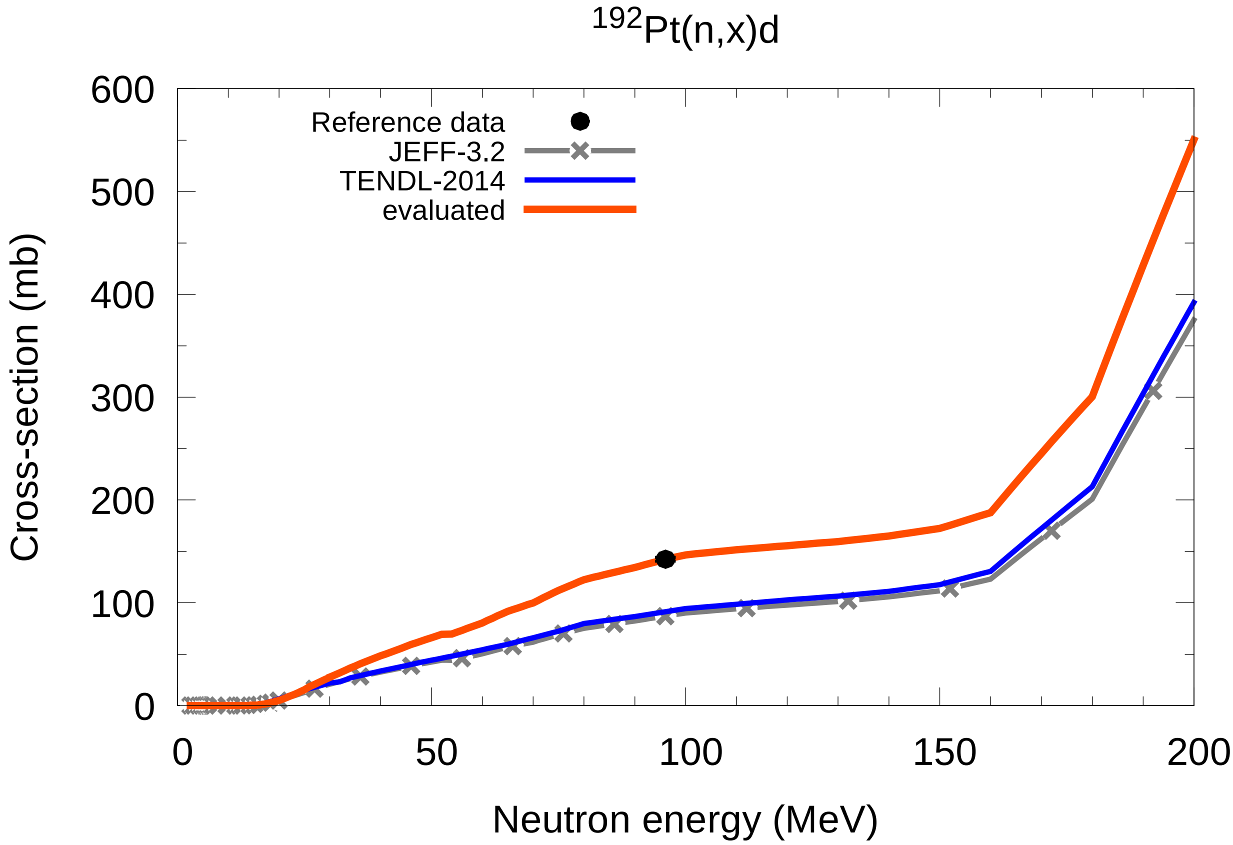
$^{191}Ir(n,x)d$
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200



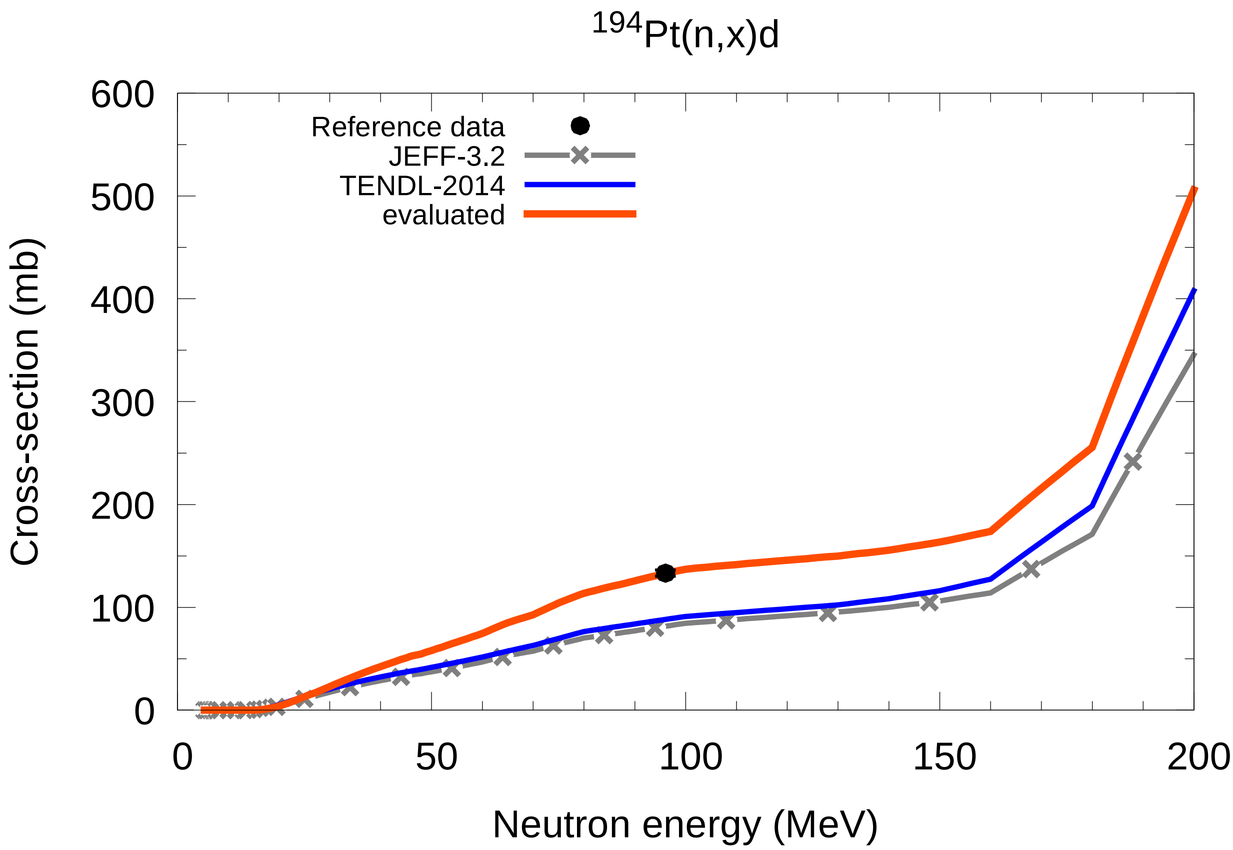
^{193}Ir(n,x)d
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
0
50
100
150
200



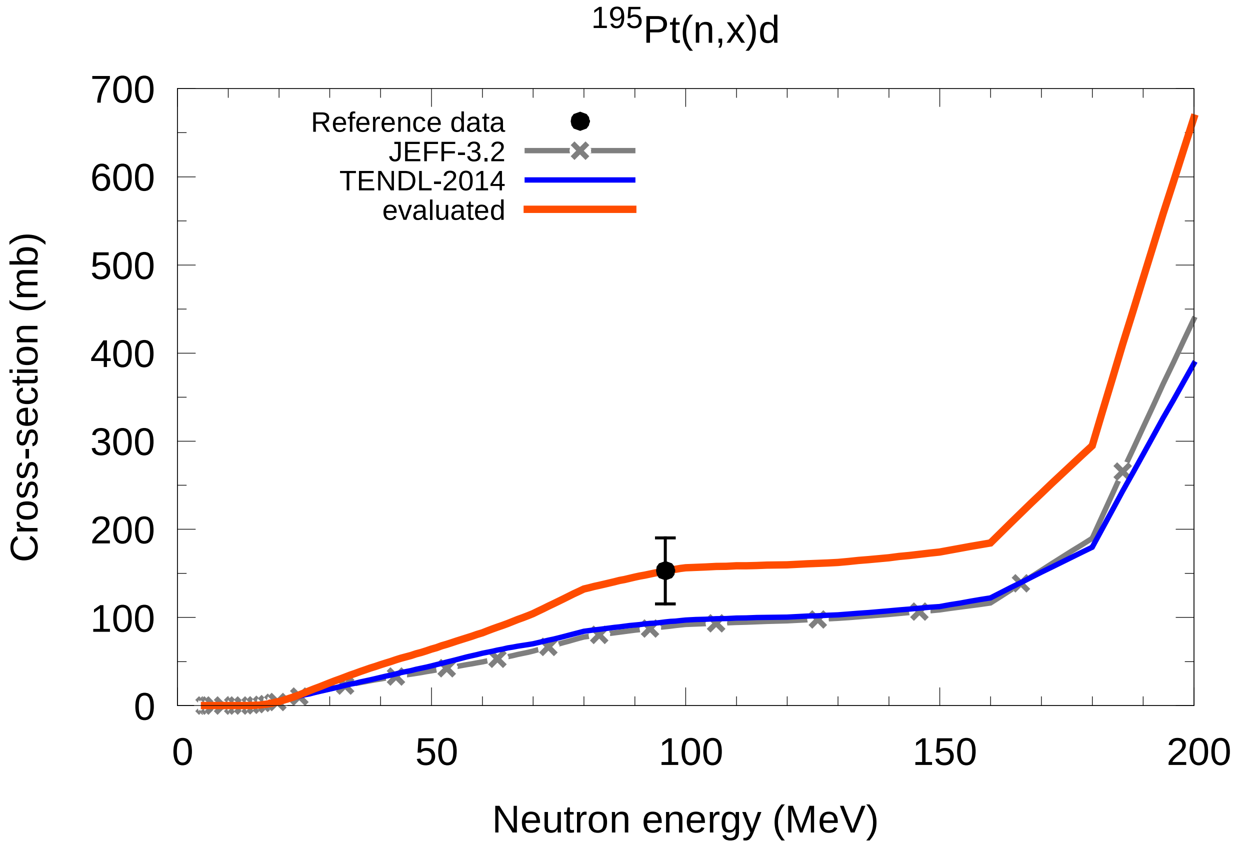
^{190}Pt(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
0
50
100
150
200



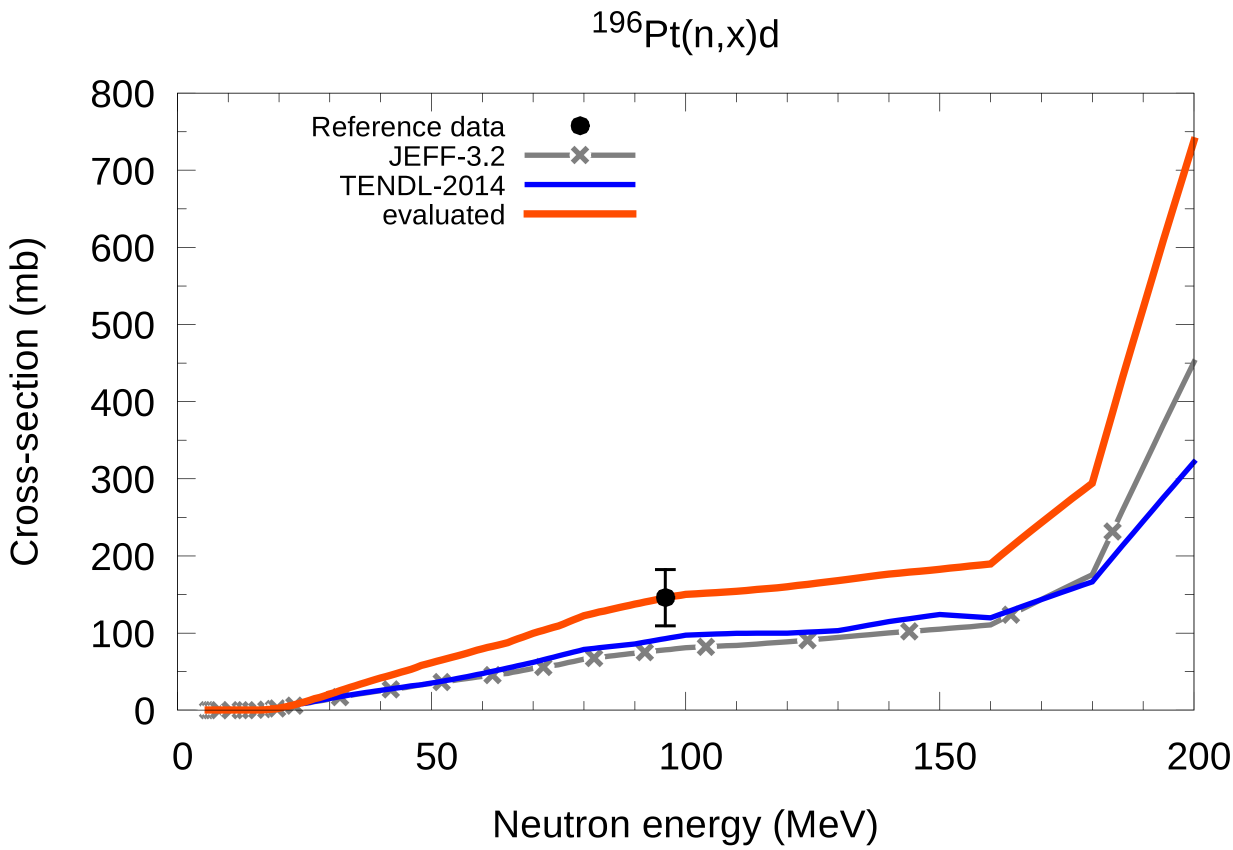
$^{192}Pt(n,x)d$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



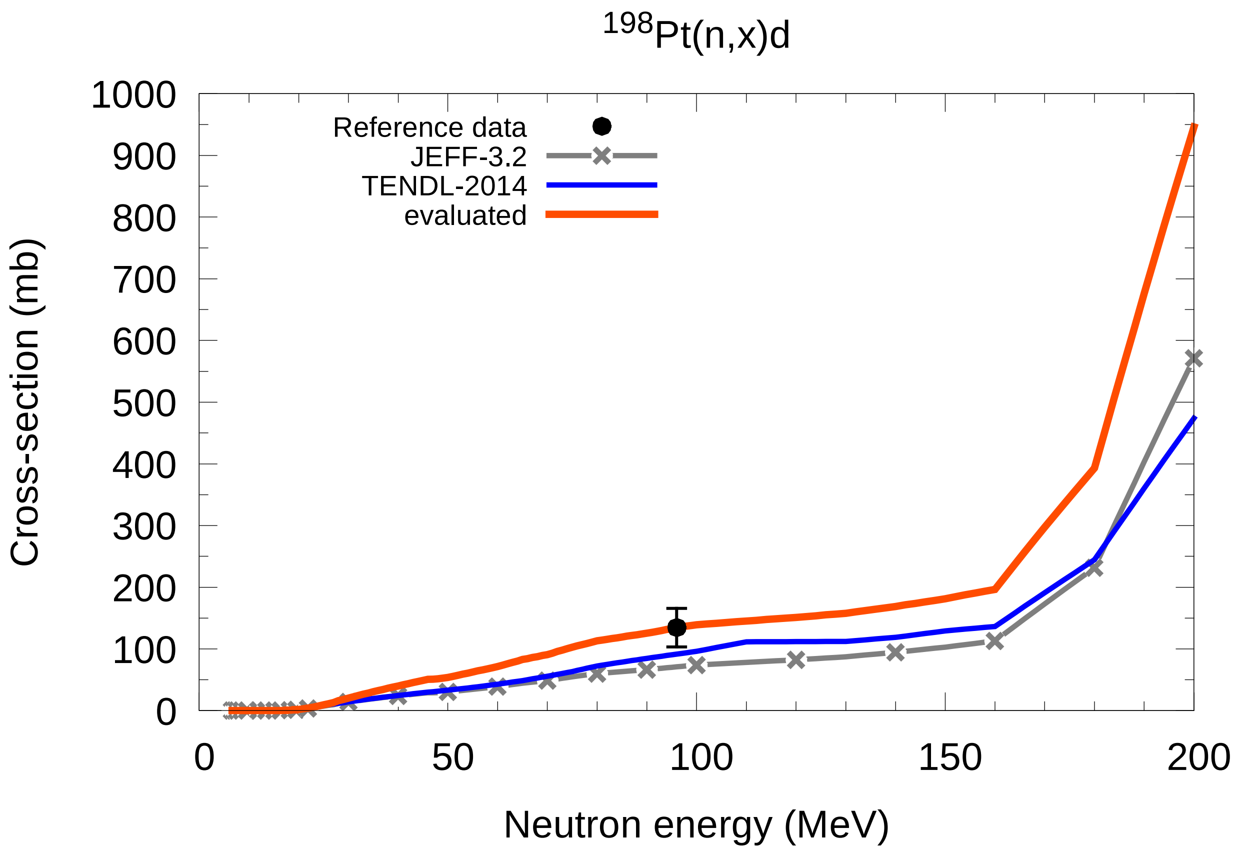
$^{194}Pt(n,x)d$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



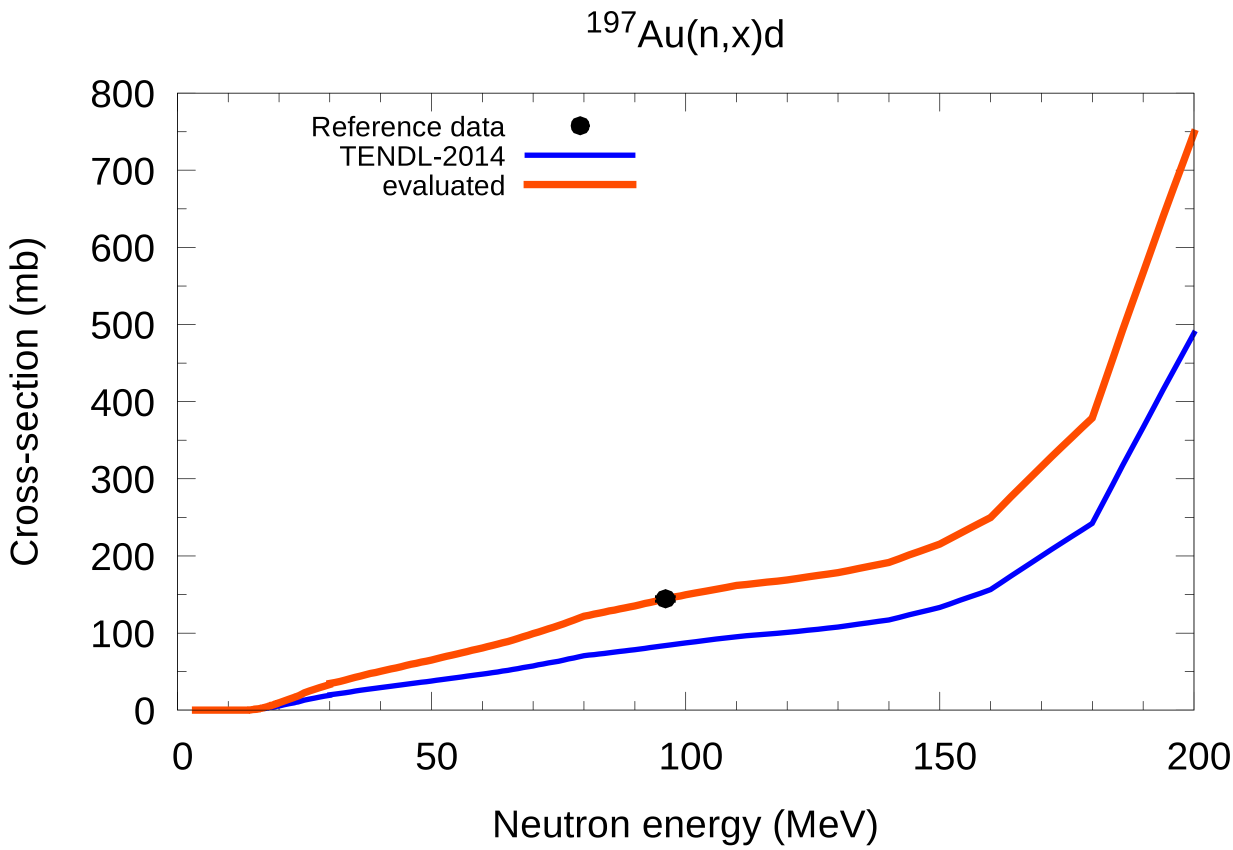
195Pt(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200



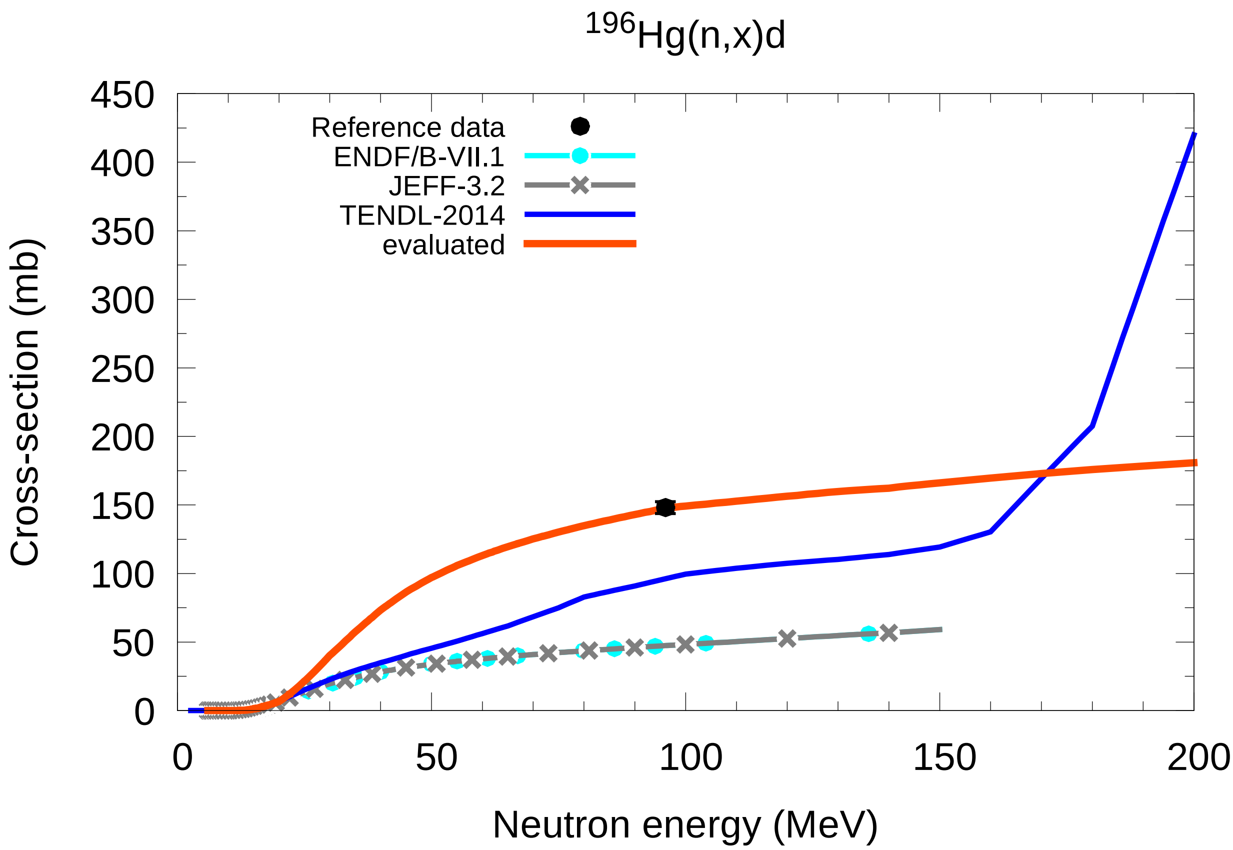
196Pt(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
0
50
100
150
200



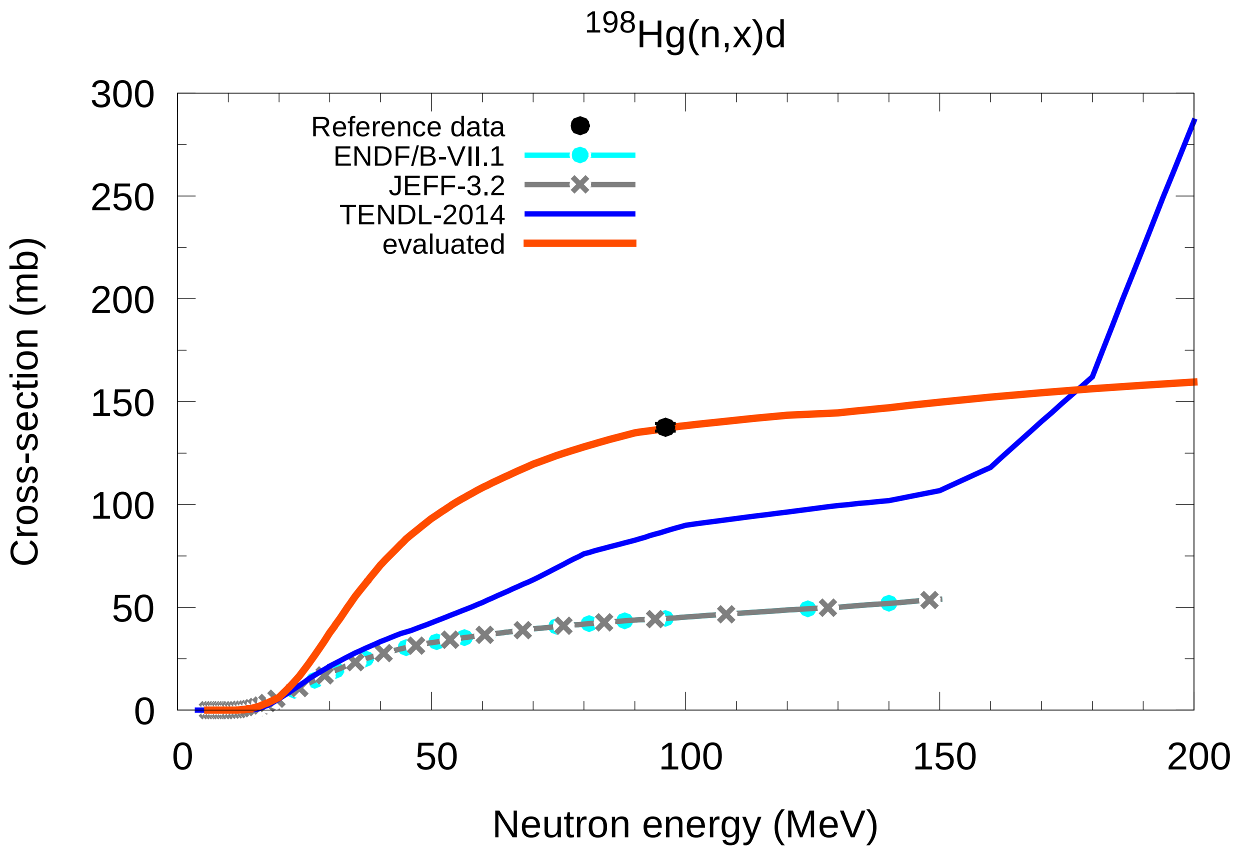
^{198}Pt(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
1000
0
50
100
150
200



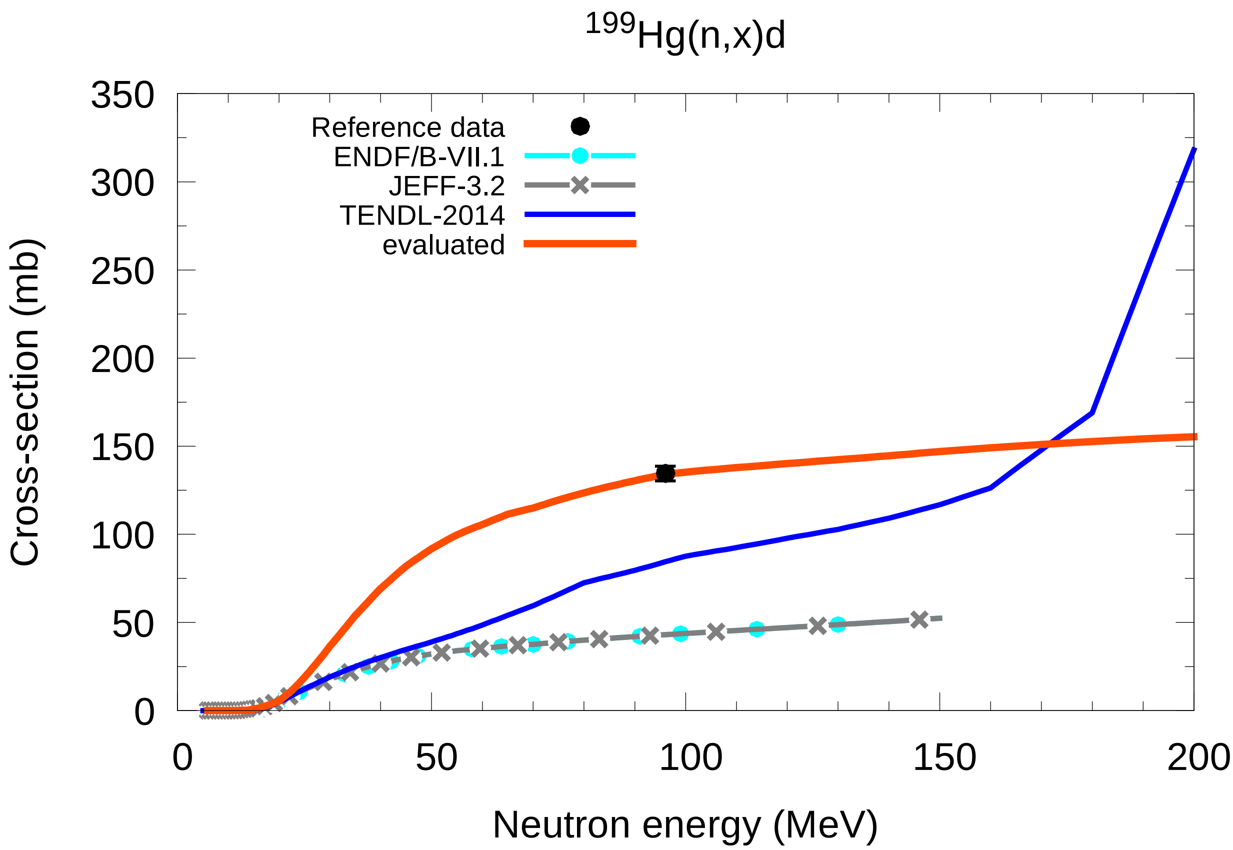
^{197}Au(n,x)d
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
0
50
100
150
200



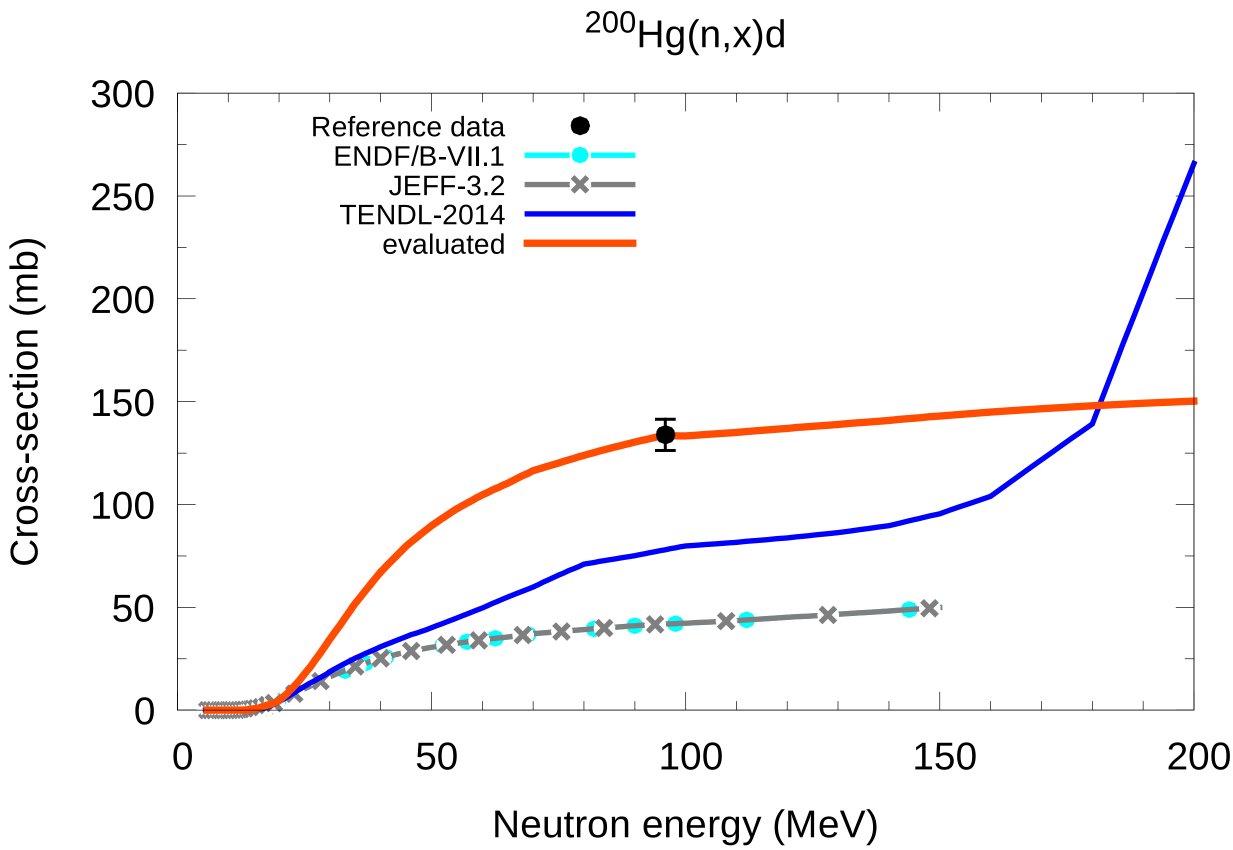
^{196}Hg(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



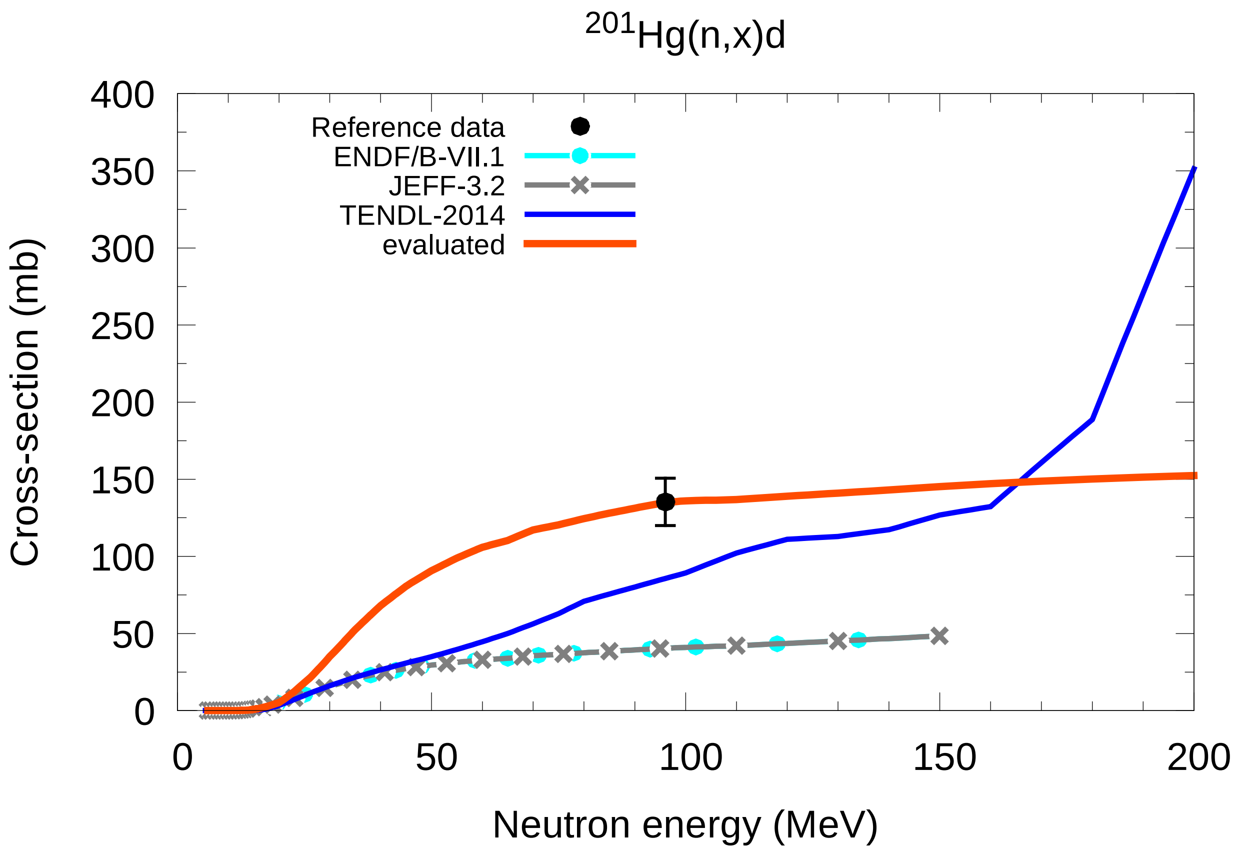
^{198}Hg(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



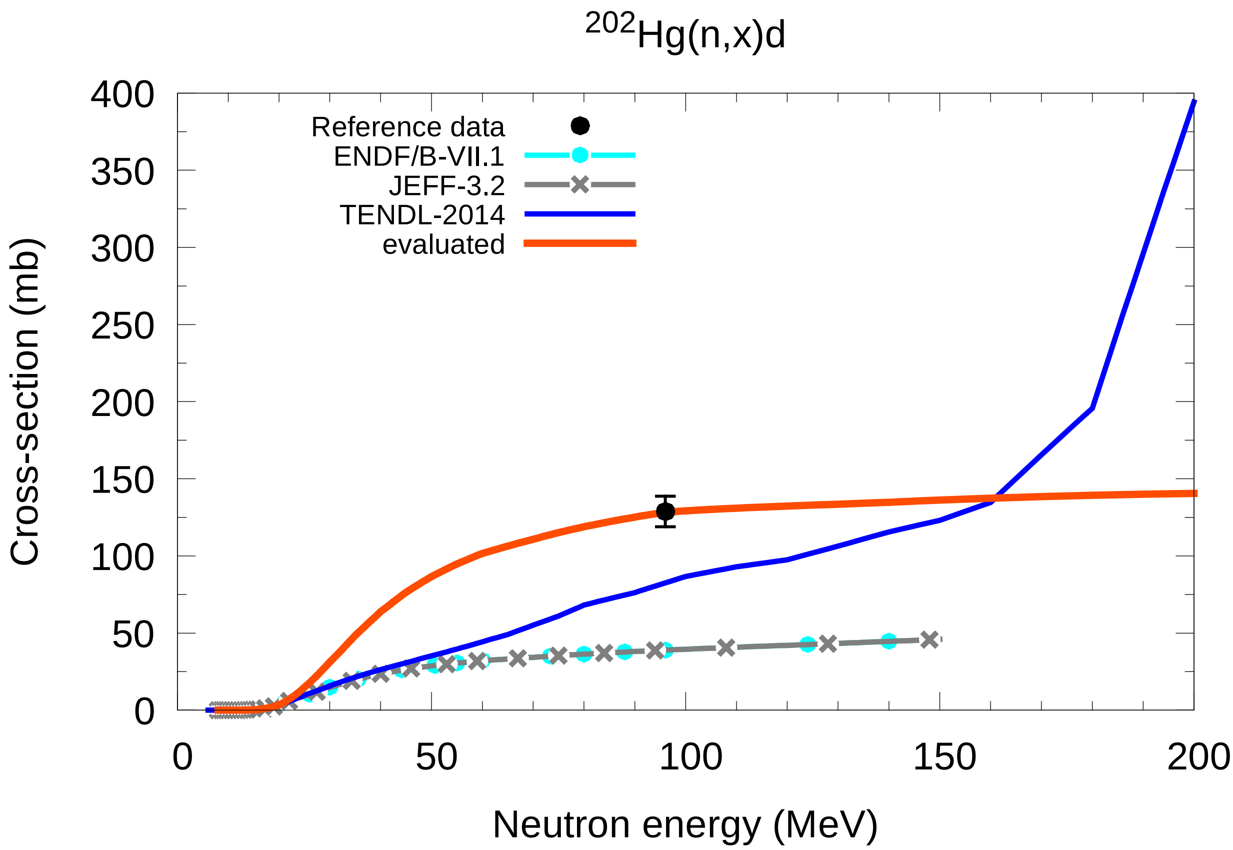
^{199}Hg(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



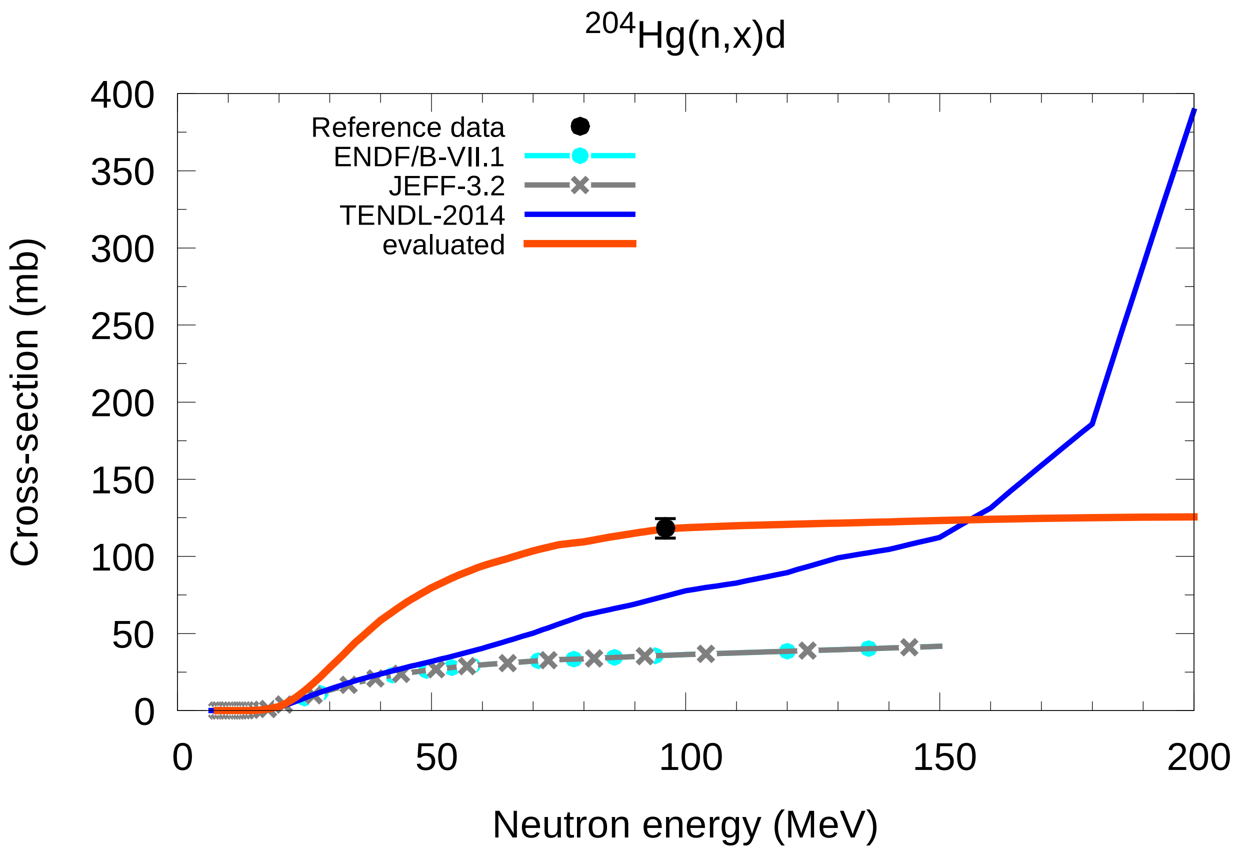
^{200}Hg(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



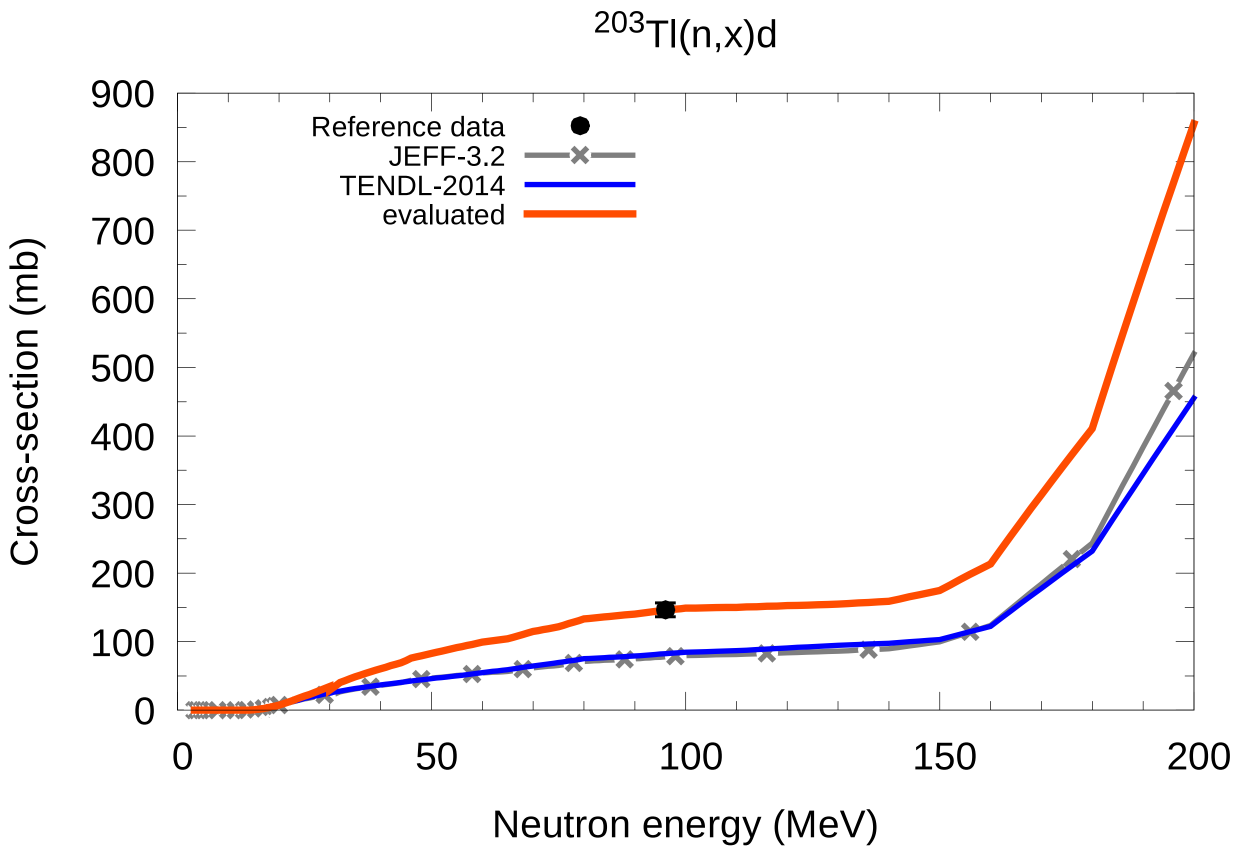
^{201}Hg(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
0
50
100
150
200



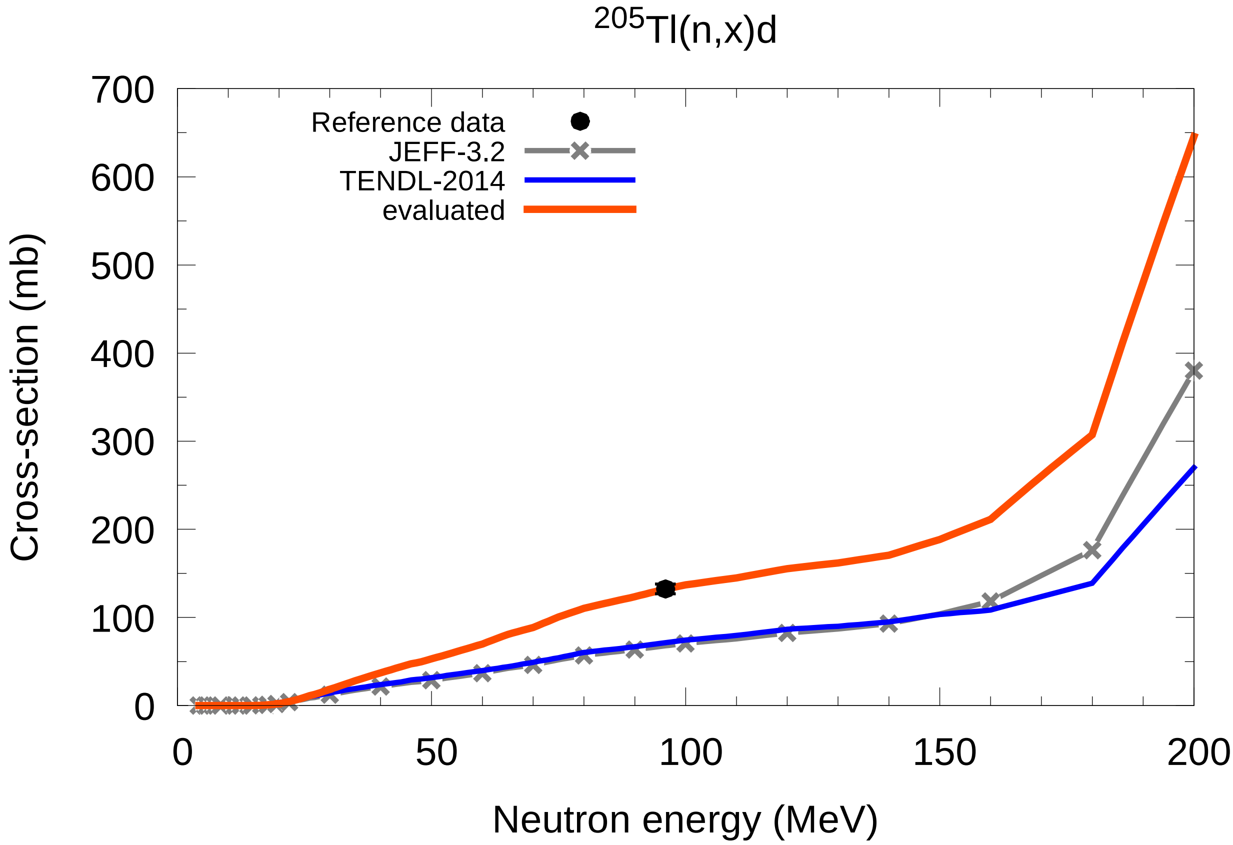
^{202}Hg(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
0
50
100
150
200

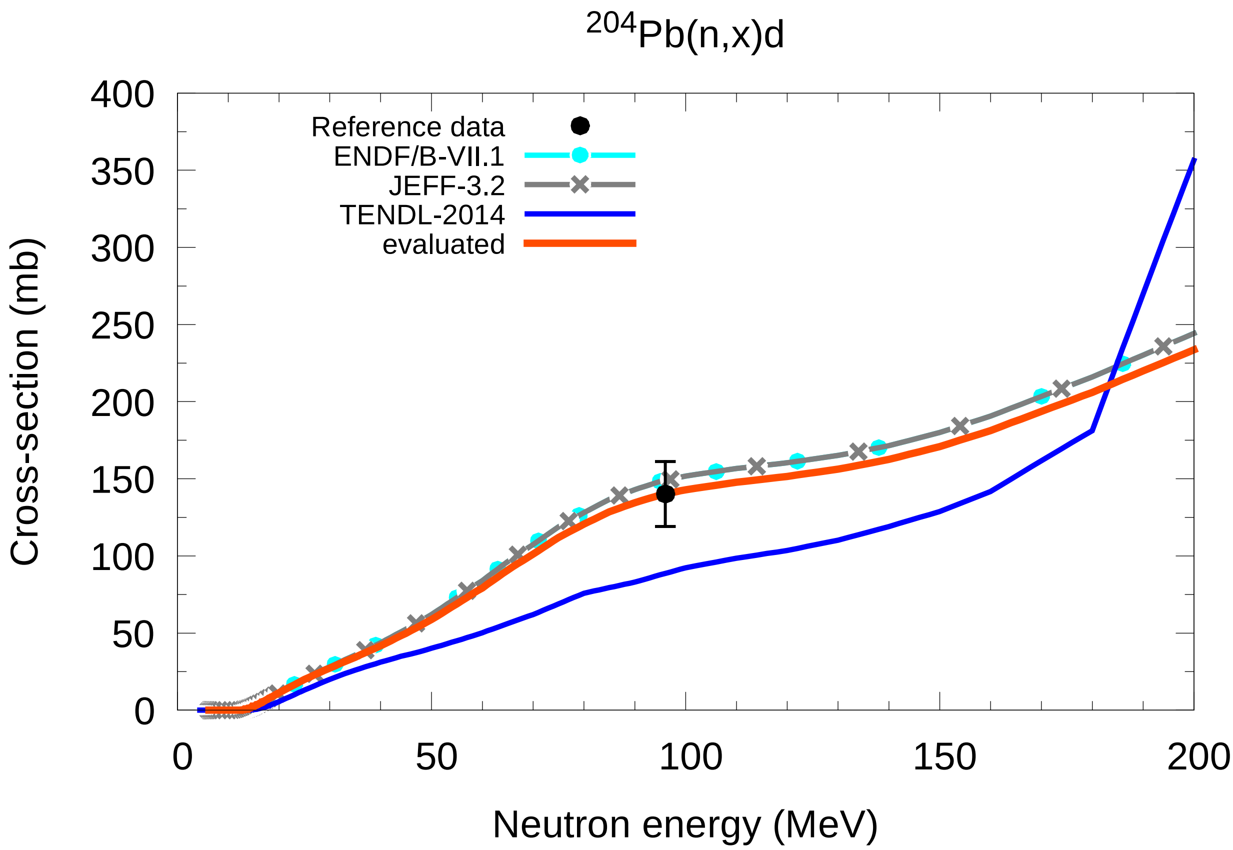


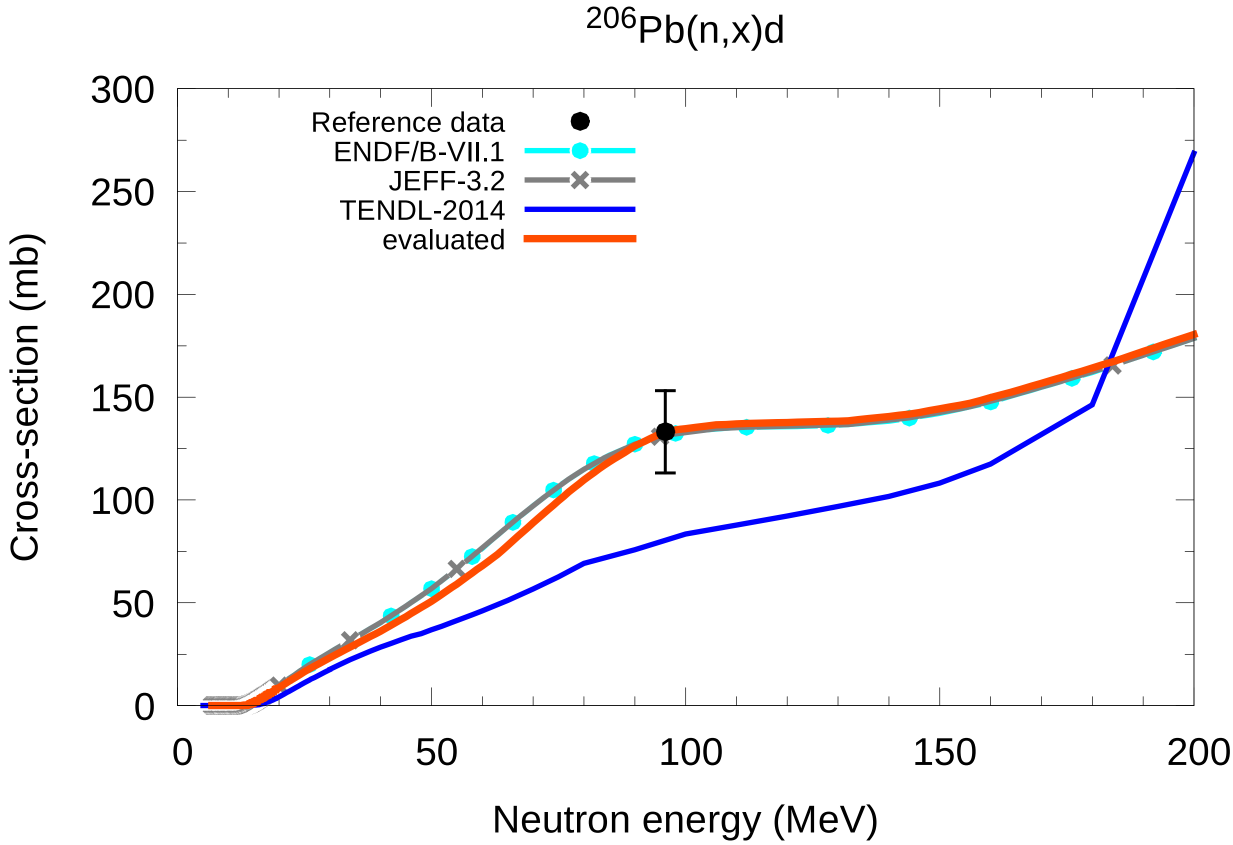
^{204}Hg(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)



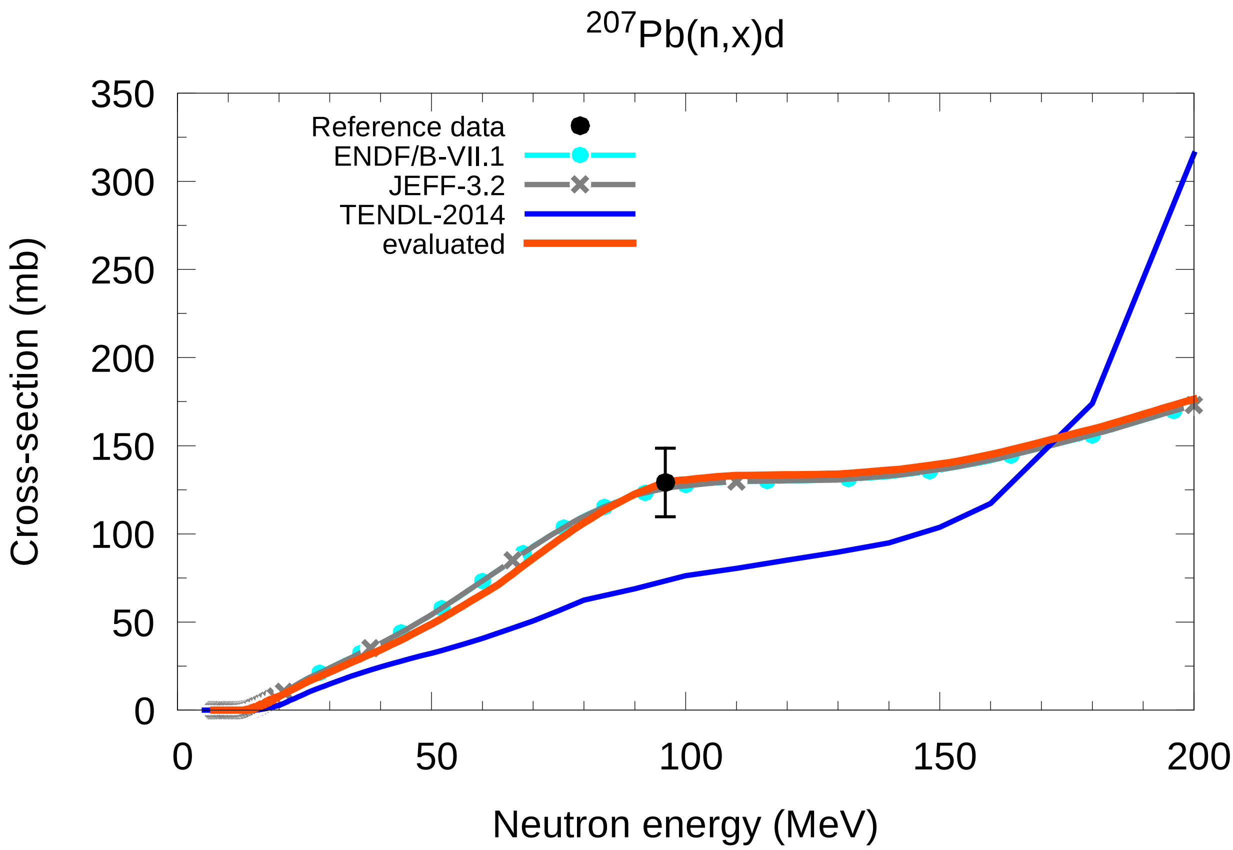
^{203}Tl(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)


205Tl(n,x)d
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
0
100
200
300
400
500
600
700
0
50
100
150
200
Neutron energy (MeV)

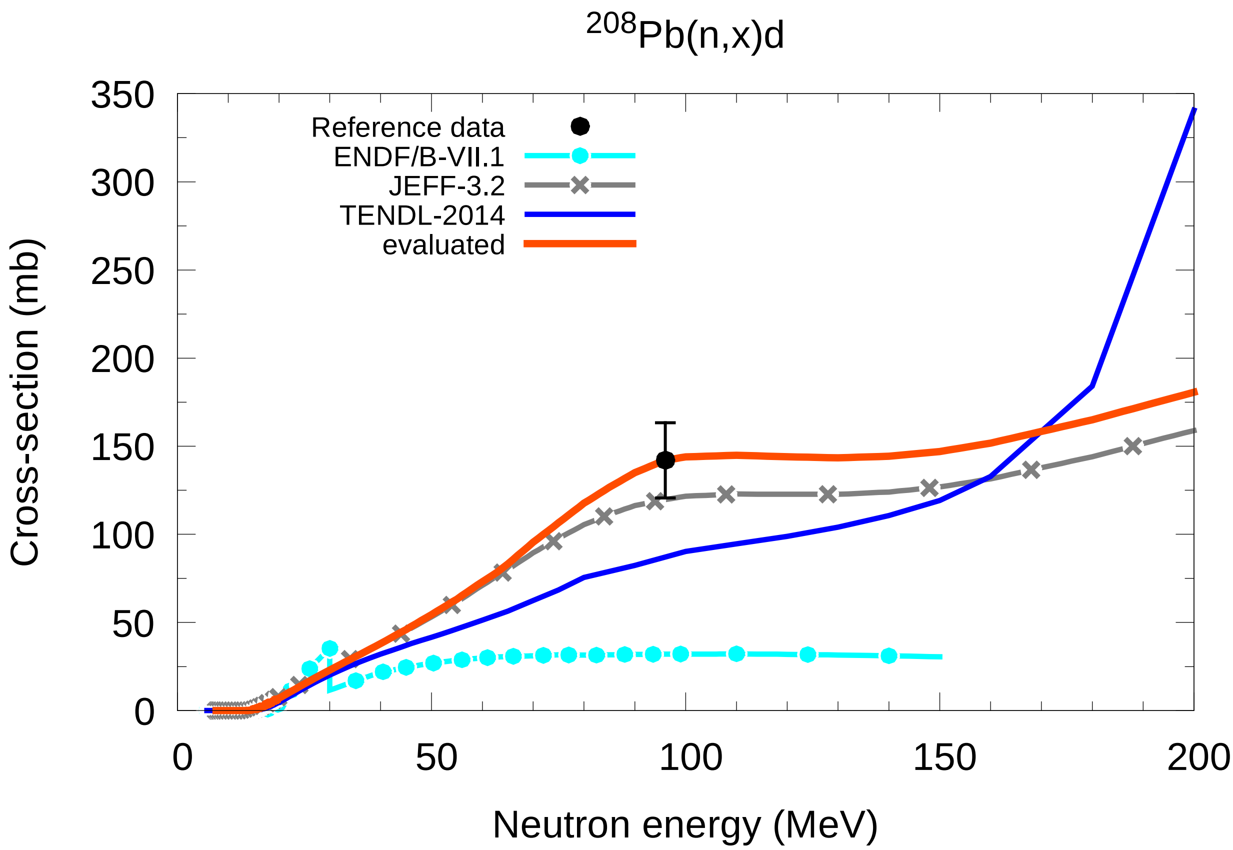

204Pb(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
0
50
100
150
200
250
300
350
400
0
50
100
150
200
Neutron energy (MeV)



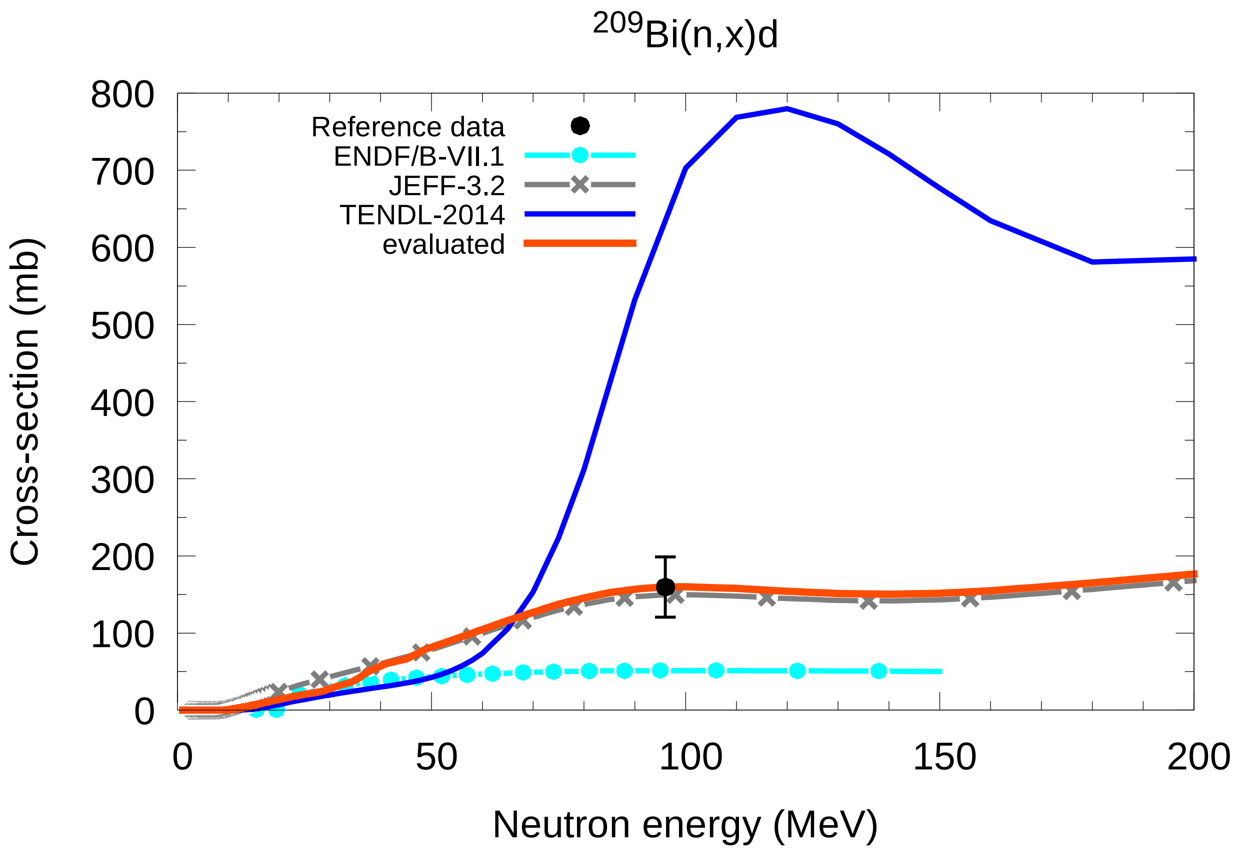
206Pb(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



207Pb(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



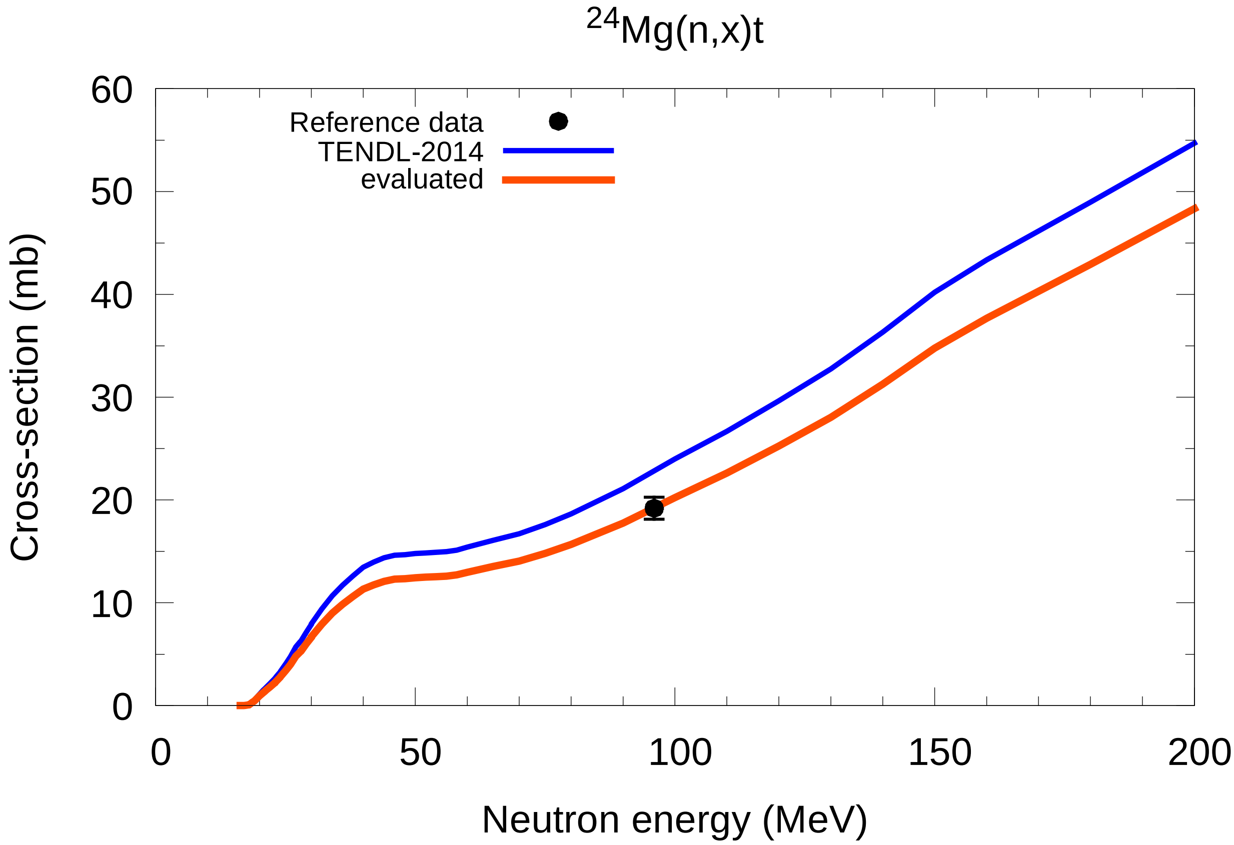
^{208}Pb(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



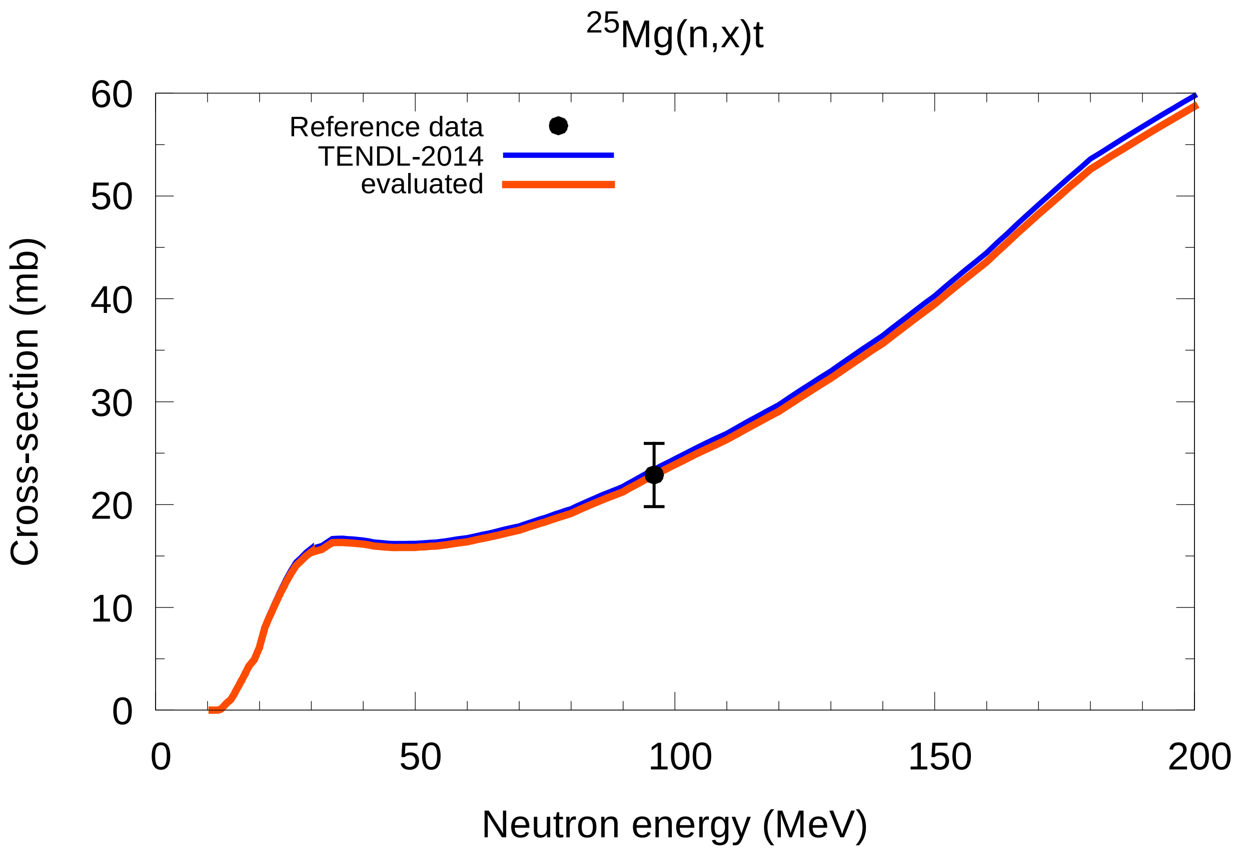
^{209}Bi(n,x)d
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800

Appendix C

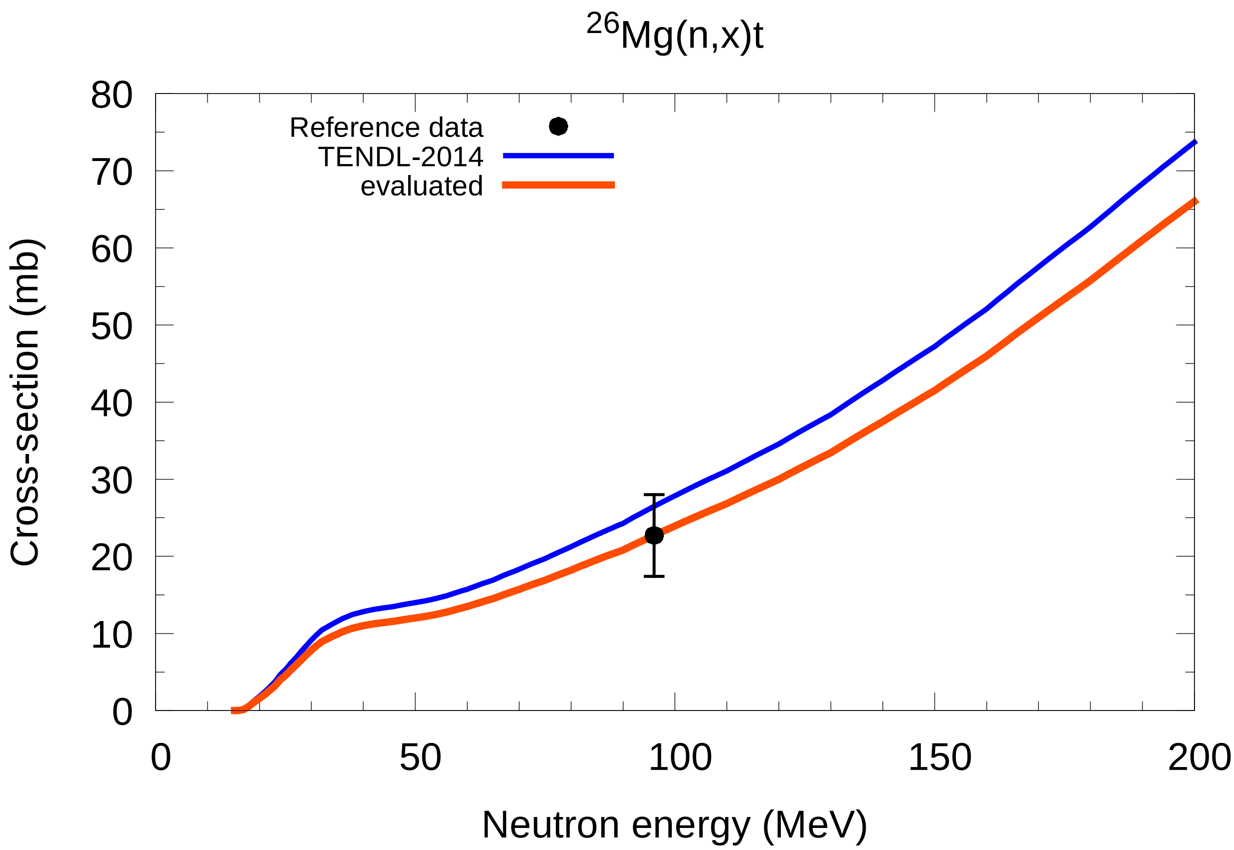
Evaluated triton production cross-sections, data from ENDF/B-VII.1, JEFF-3.2, and TENDL-2014, and cross-sections at 96 MeV estimated using the σ(A)- dependence



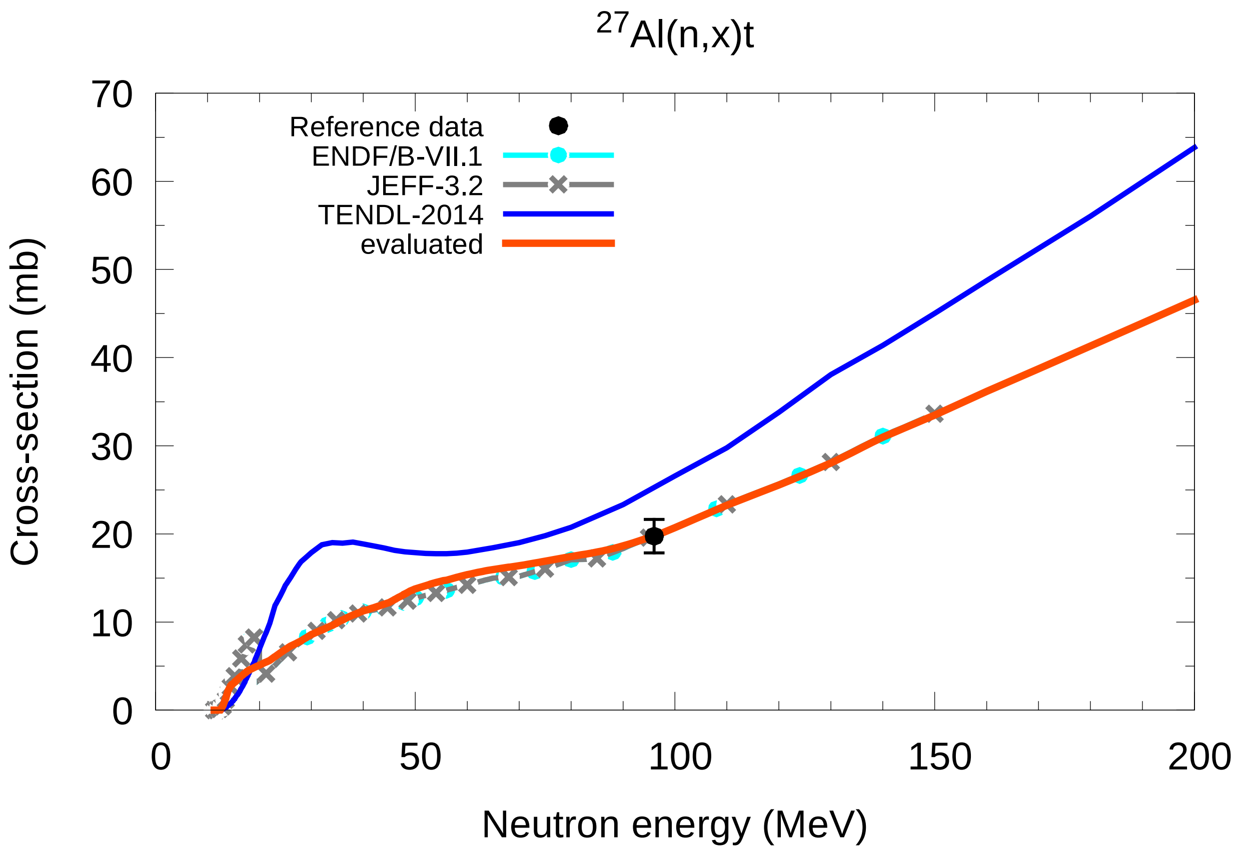
^{24}Mg(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
10
20
30
40
50
60
0
50
100
150
200



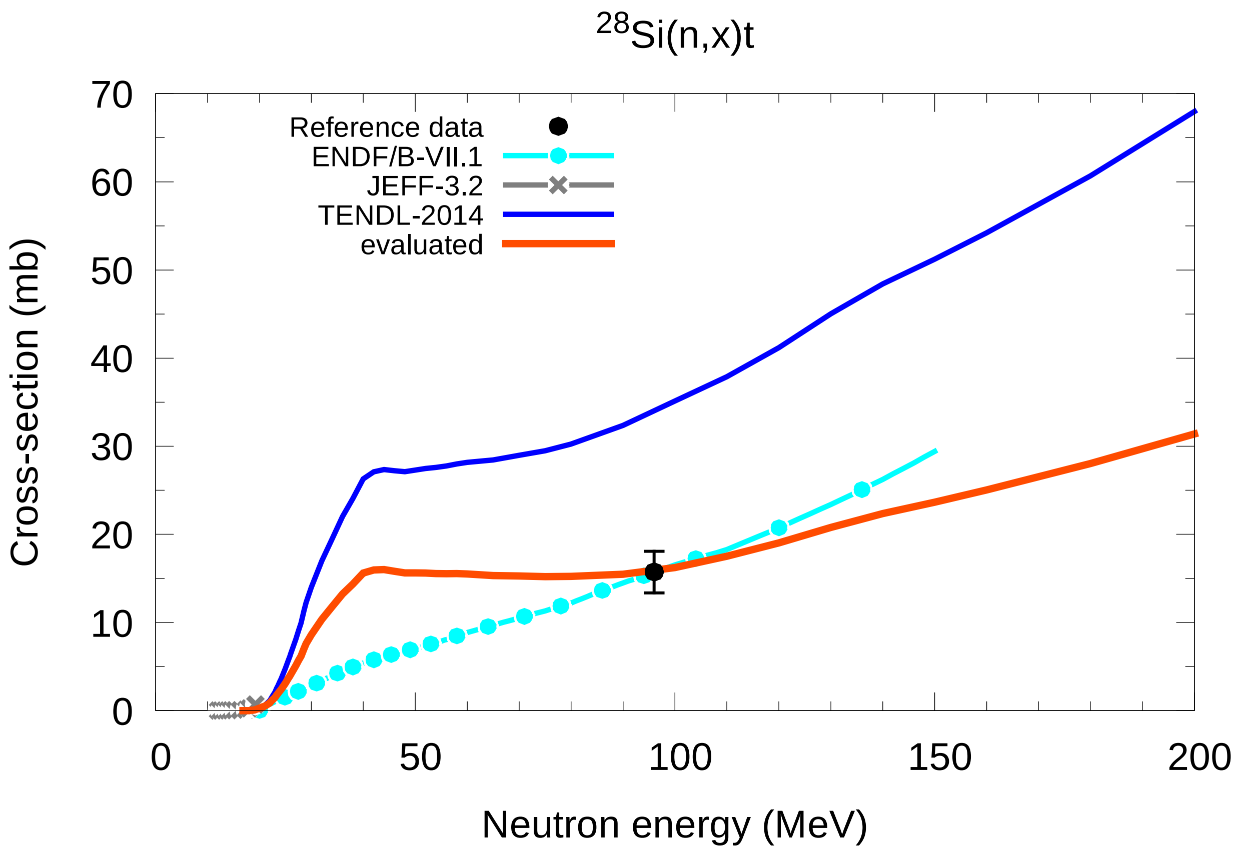
^{25}Mg(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
10
20
30
40
50
60
0
50
100
150
200



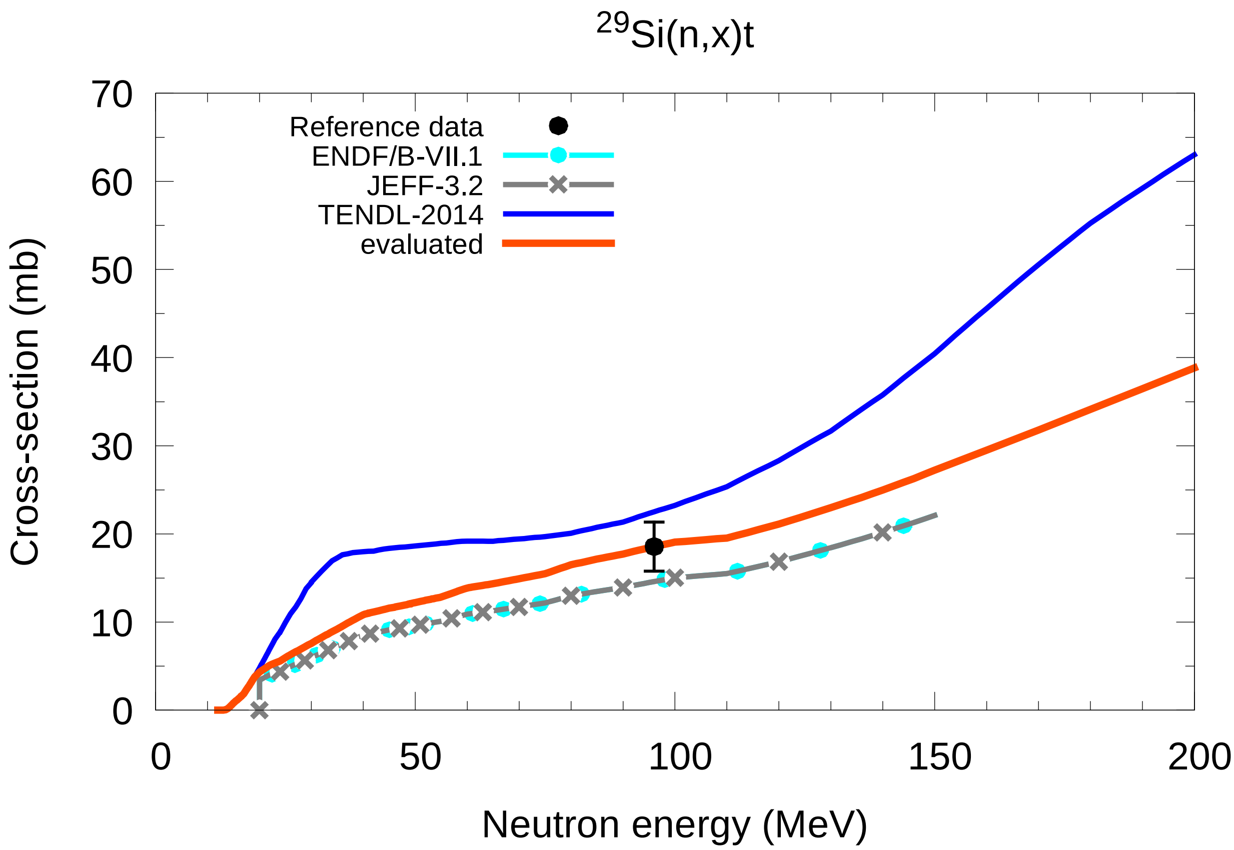
^{26}Mg(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
10
20
30
40
50
60
70
80
0
50
100
150
200



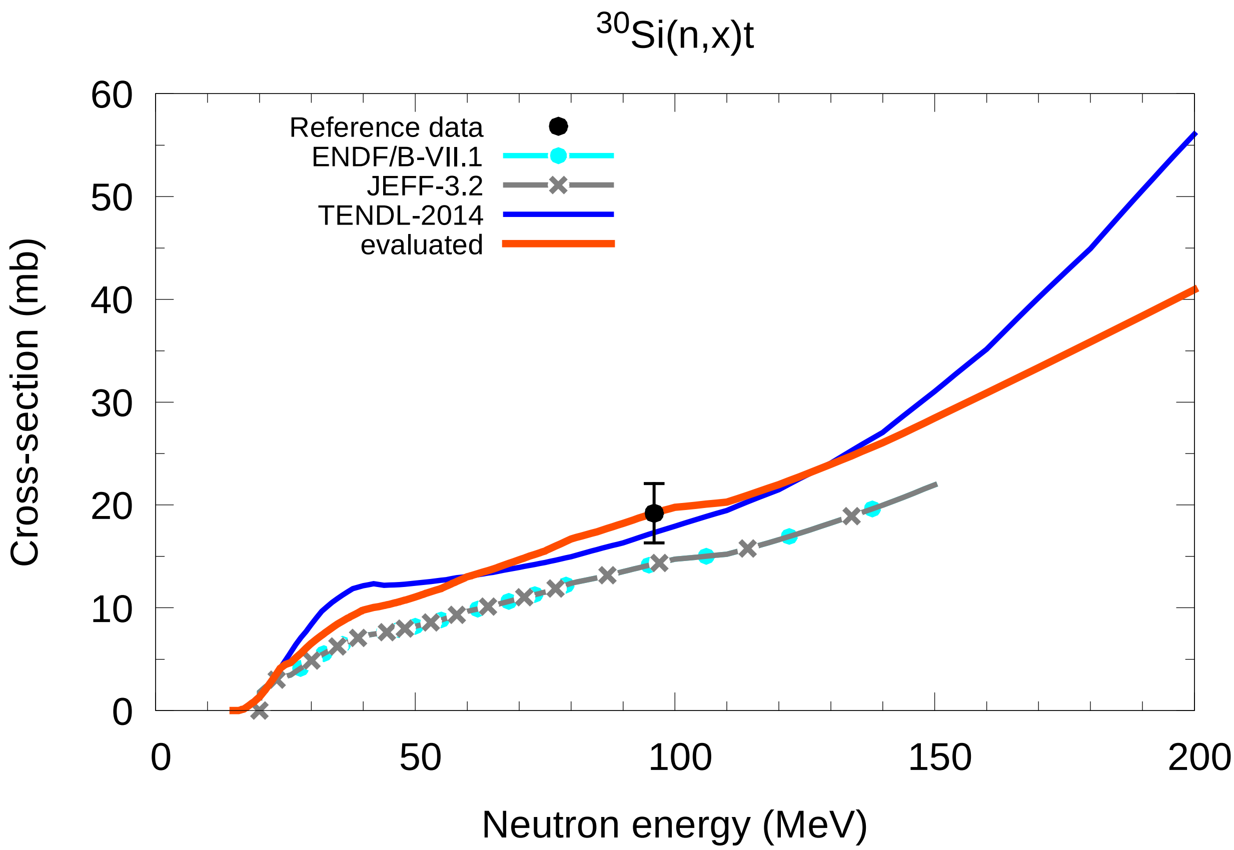
^{27}Al(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
10
20
30
40
50
60
70
0
50
100
150
200



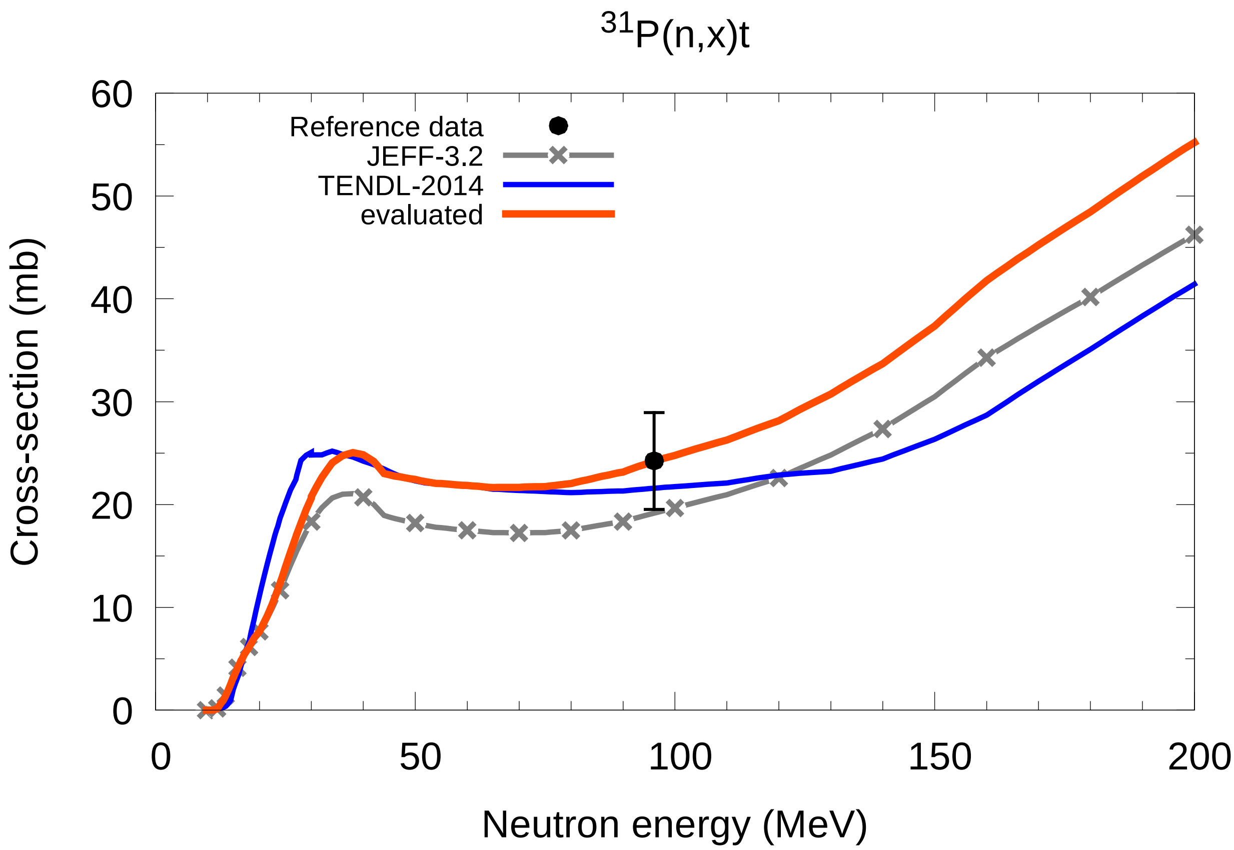
^{28}Si(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
10
20
30
40
50
60
70
0
50
100
150
200



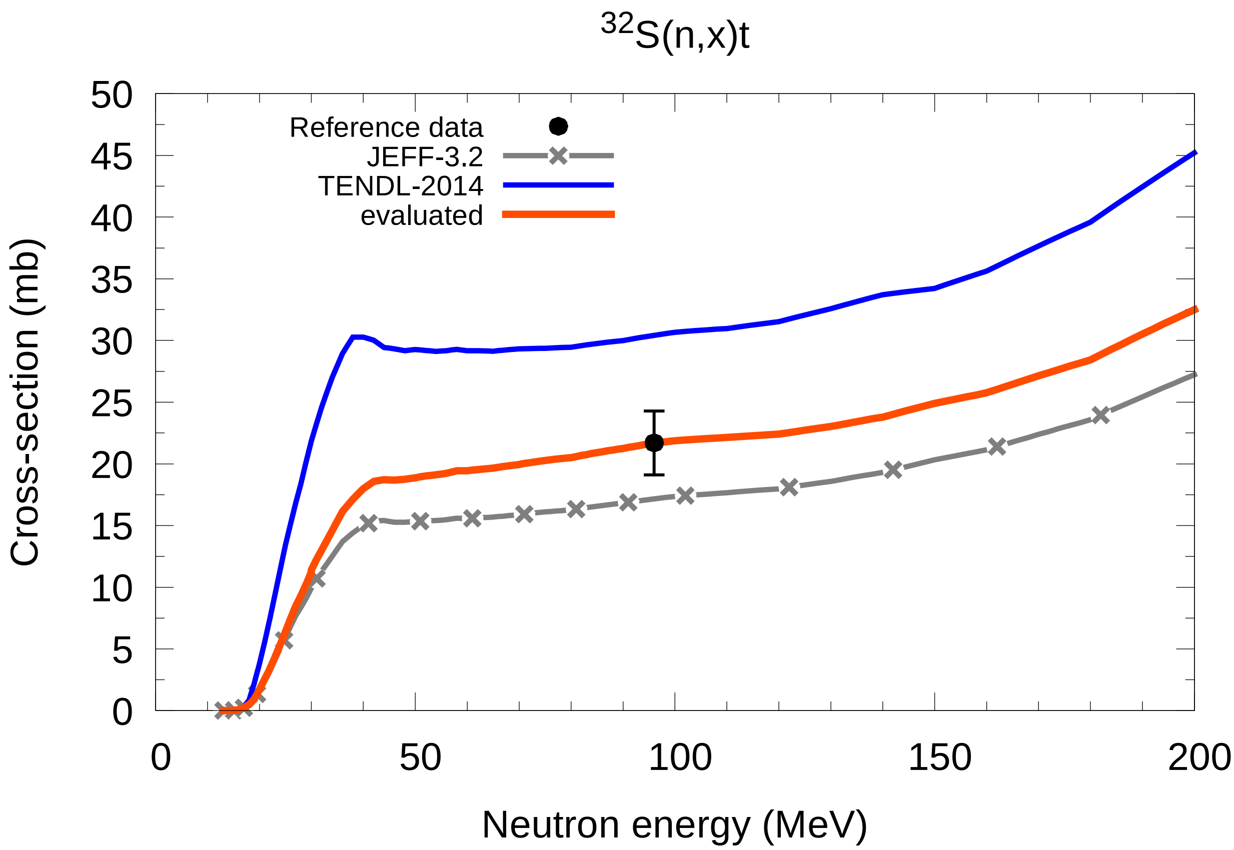
^{29}Si(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
10
20
30
40
50
60
70
0
50
100
150
200



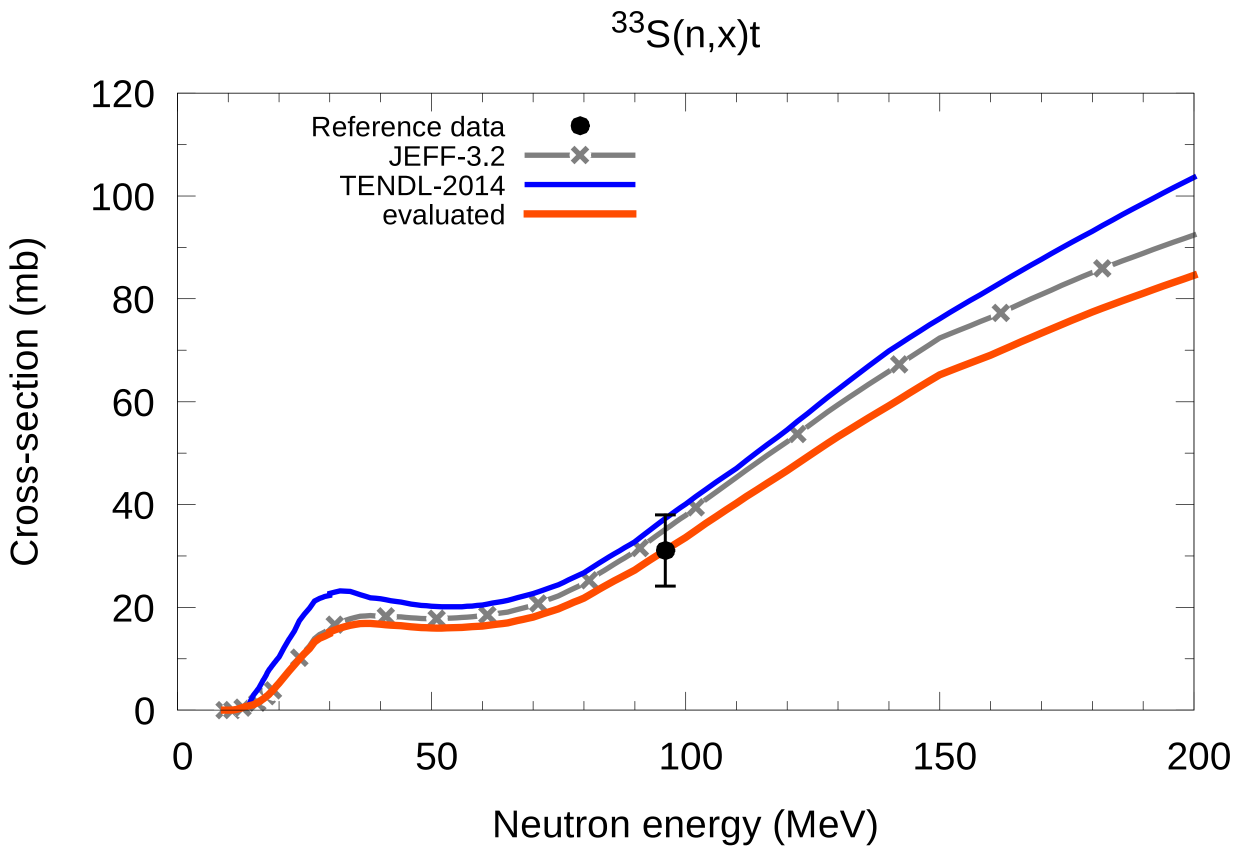
$^{30}Si(n,x)t$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
10
20
30
40
50
60
0
50
100
150
200



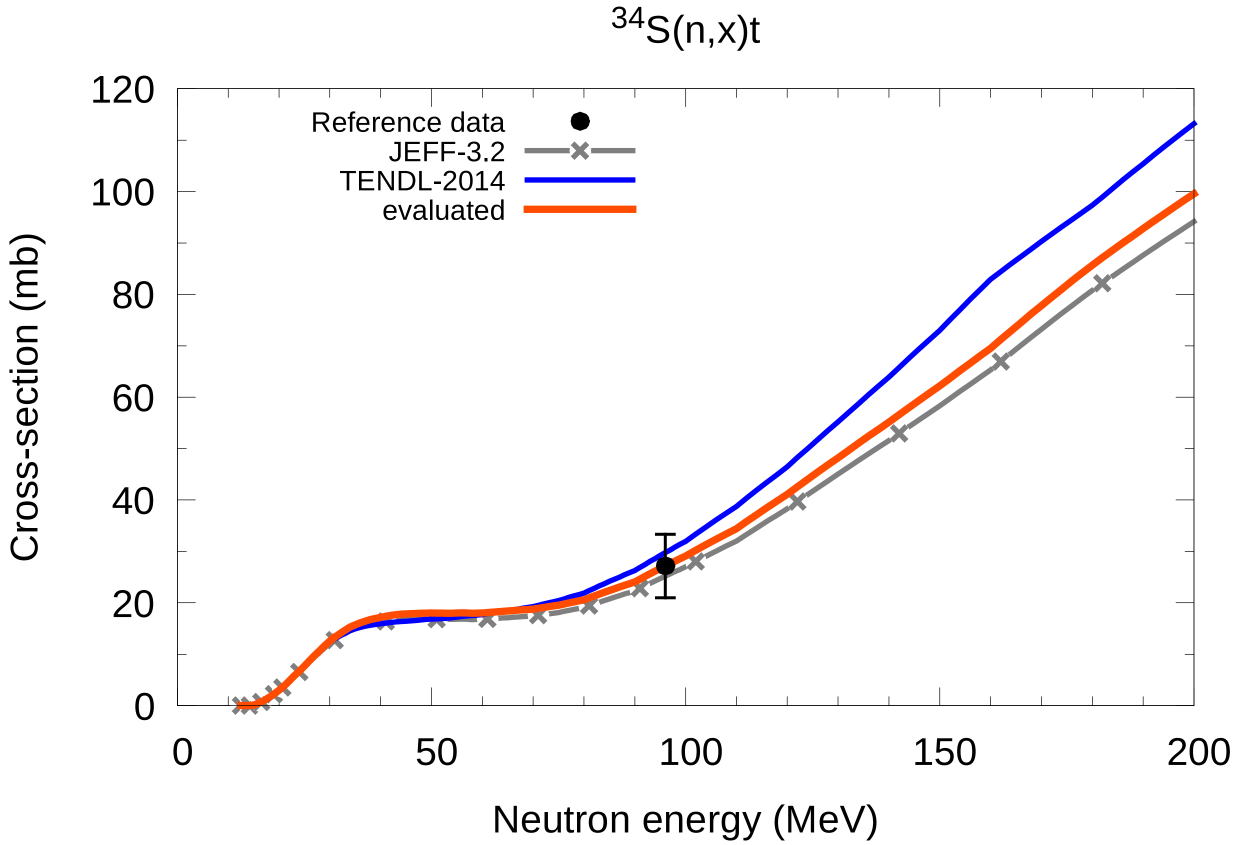
$^{31}P(n,x)t$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
10
20
30
40
50
60
0
50
100
150
200



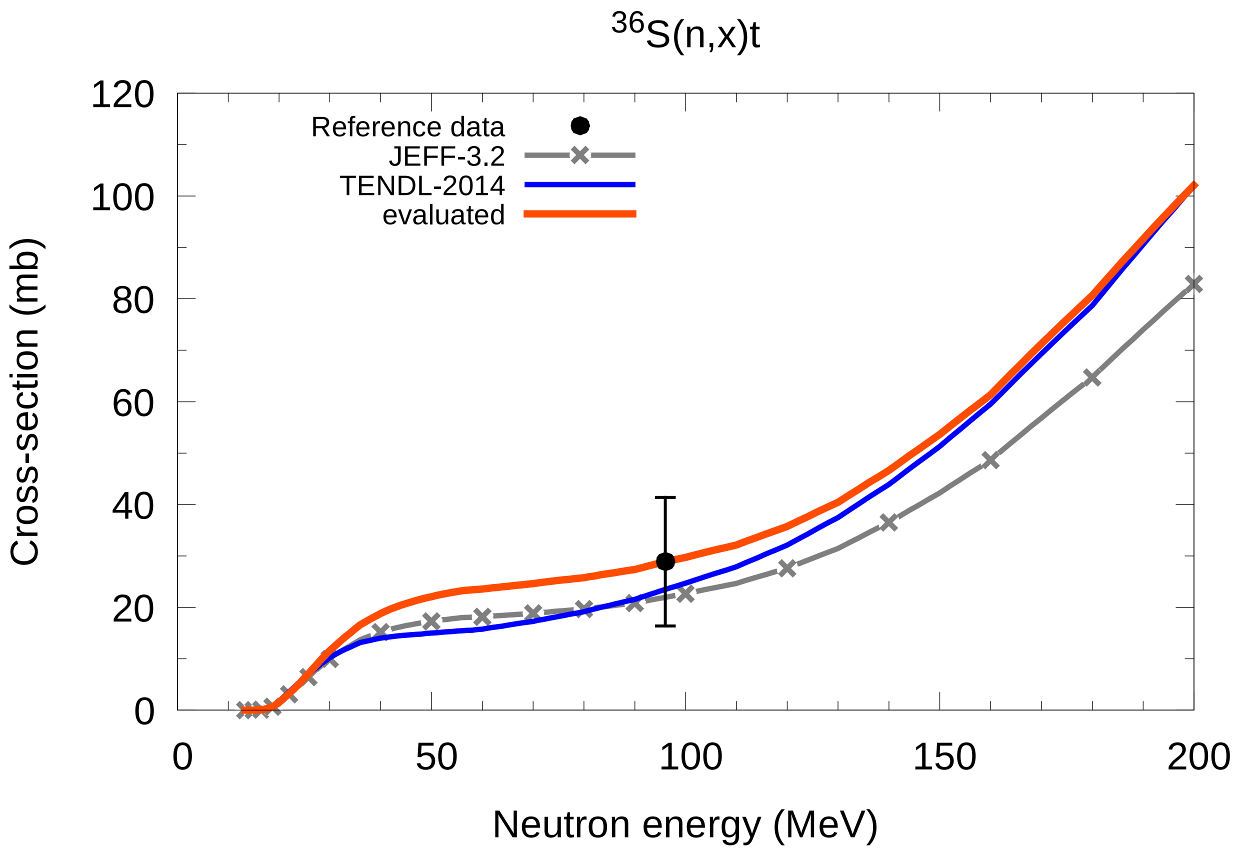
^{32}S(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)



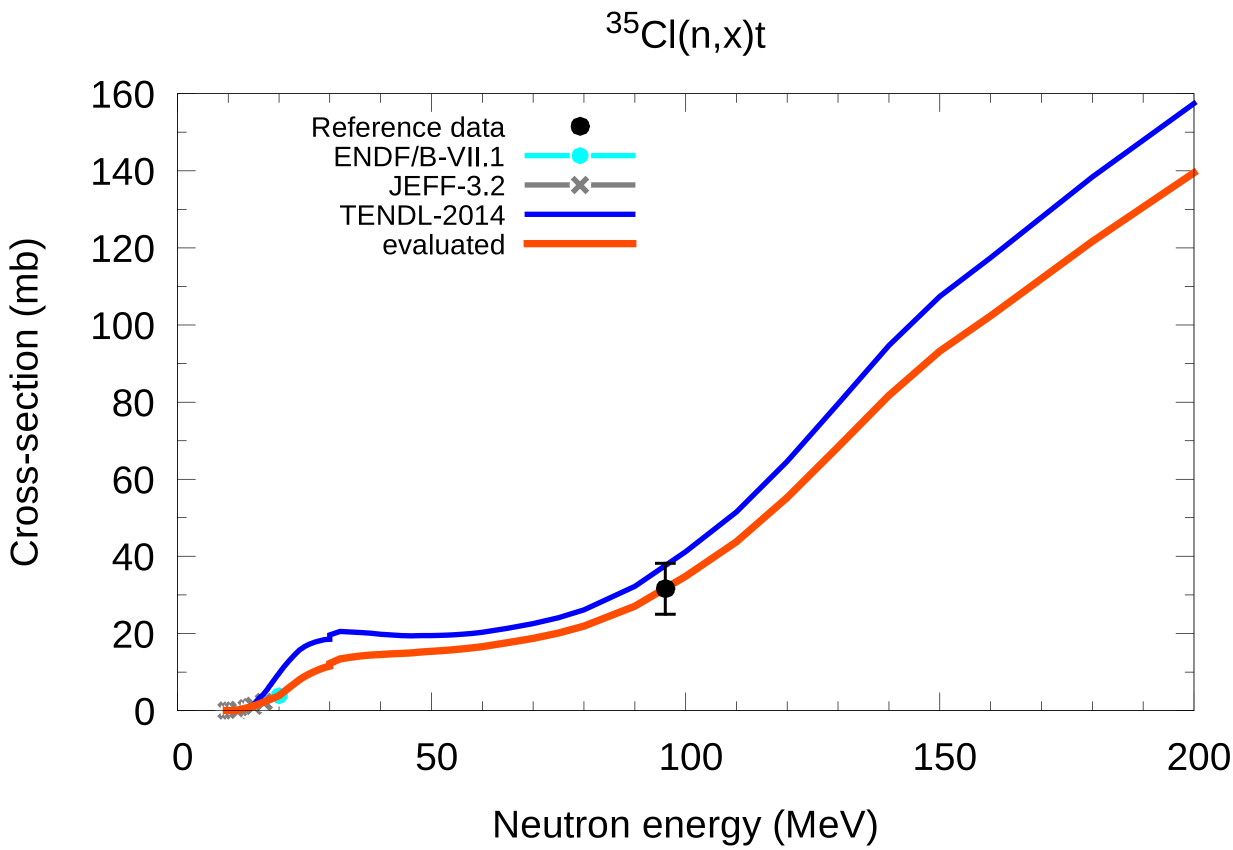
^{33}S(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)



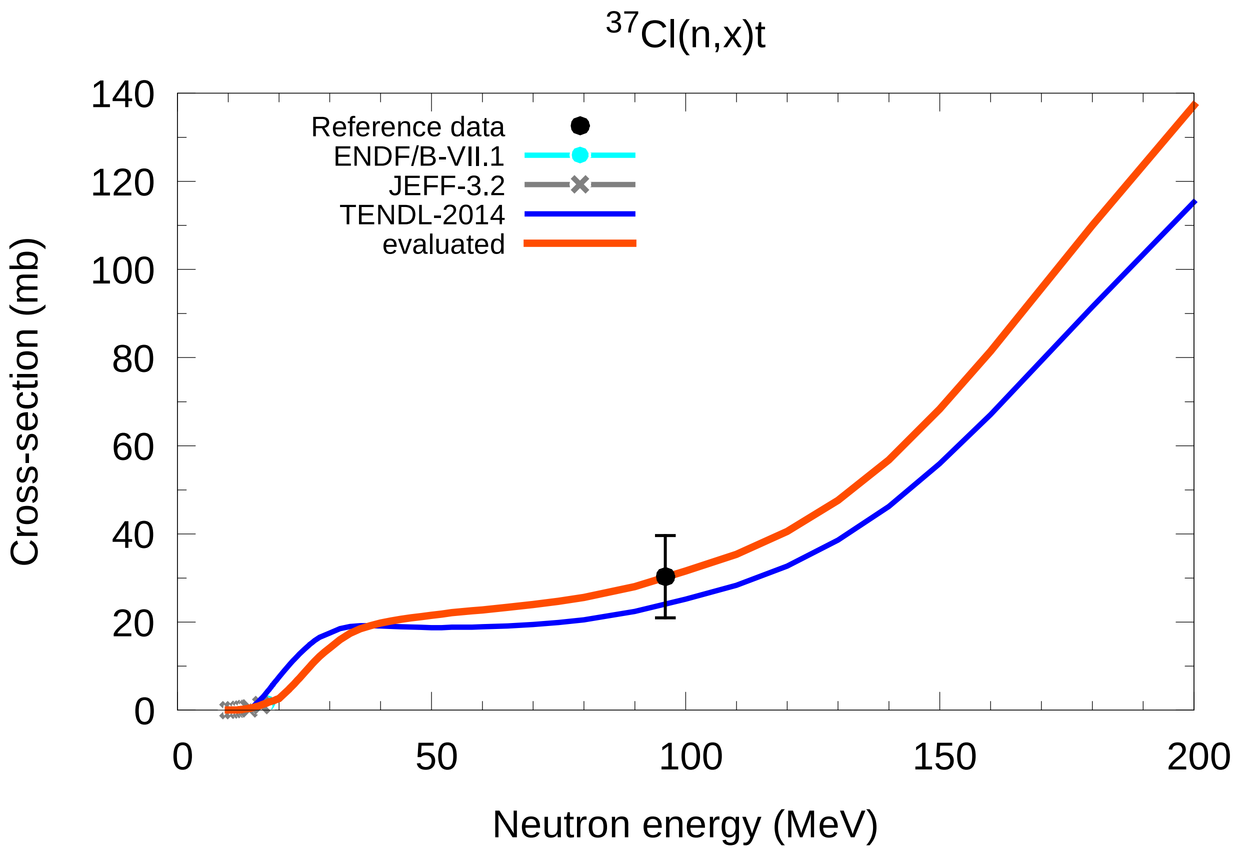
$^{34}S(n,x)t$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
0
50
100
150
200



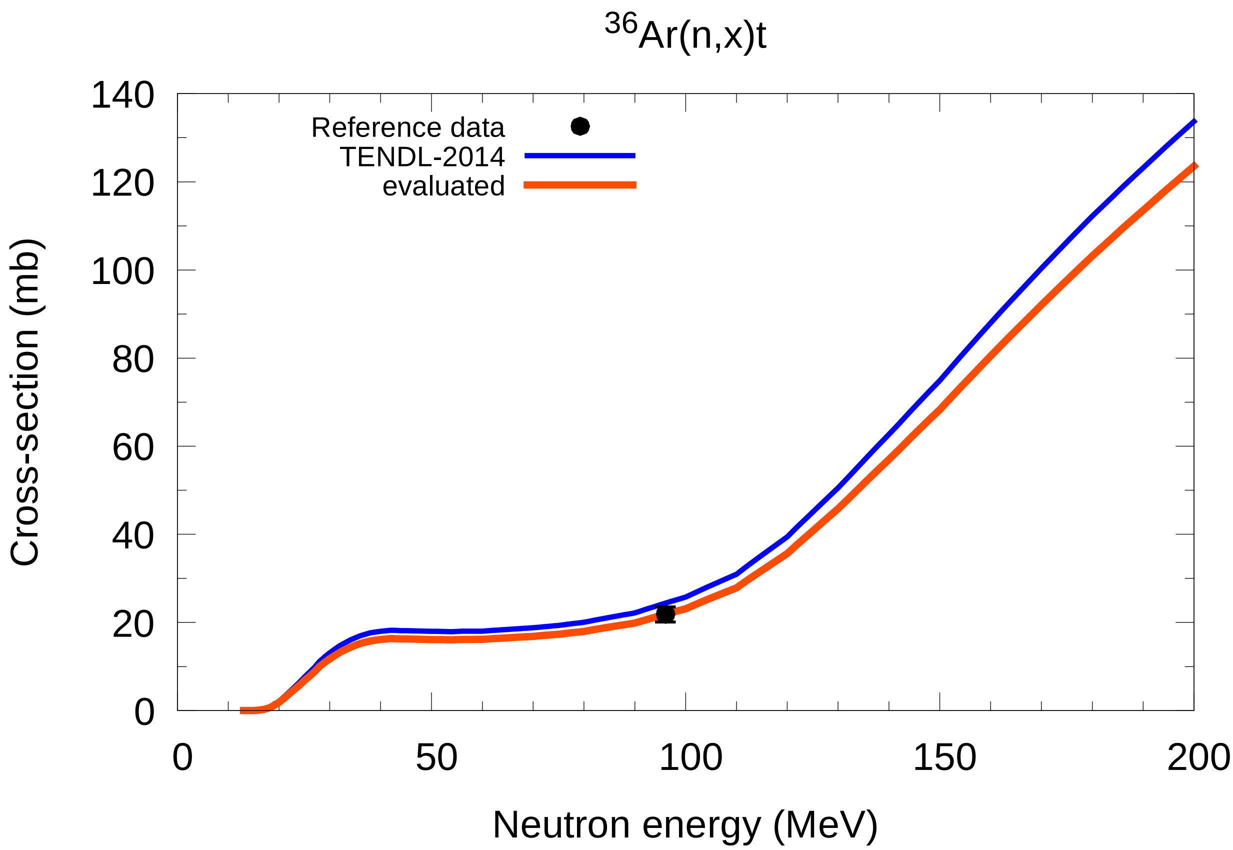
$^{36}S(n,x)t$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
0
50
100
150
200



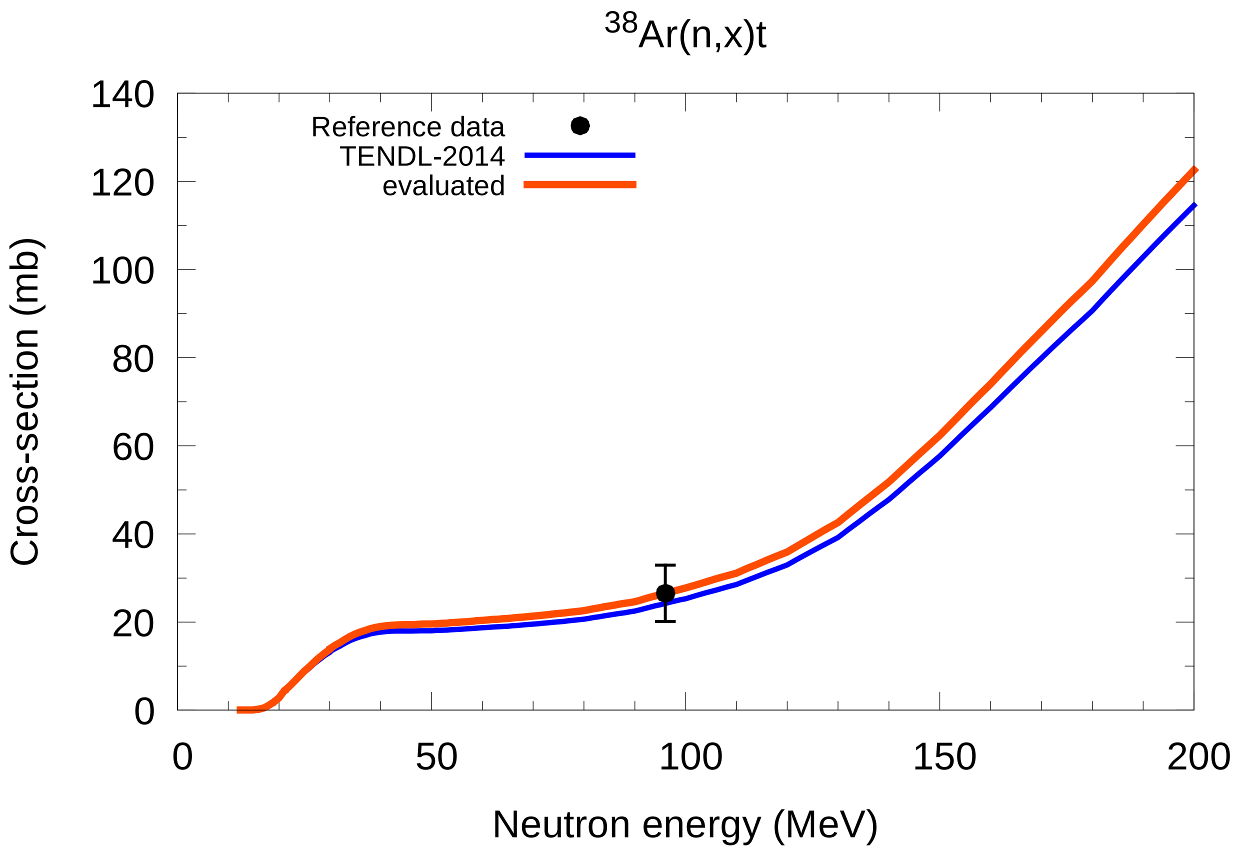
^{35}Cl(n,x)t
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
20
40
60
80
100
120
140
160
0
50
100
150
200



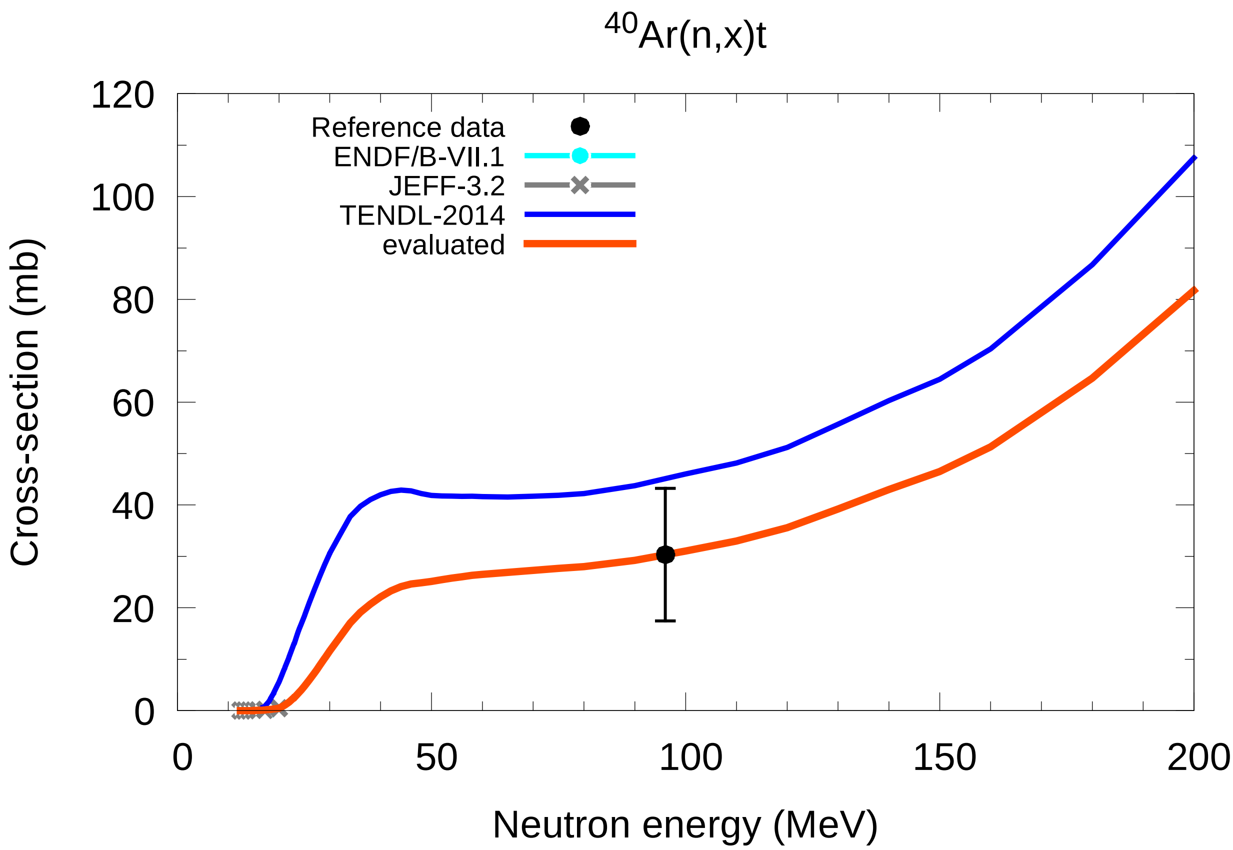
^{37}Cl(n,x)t
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
20
40
60
80
100
120
140
0
50
100
150
200



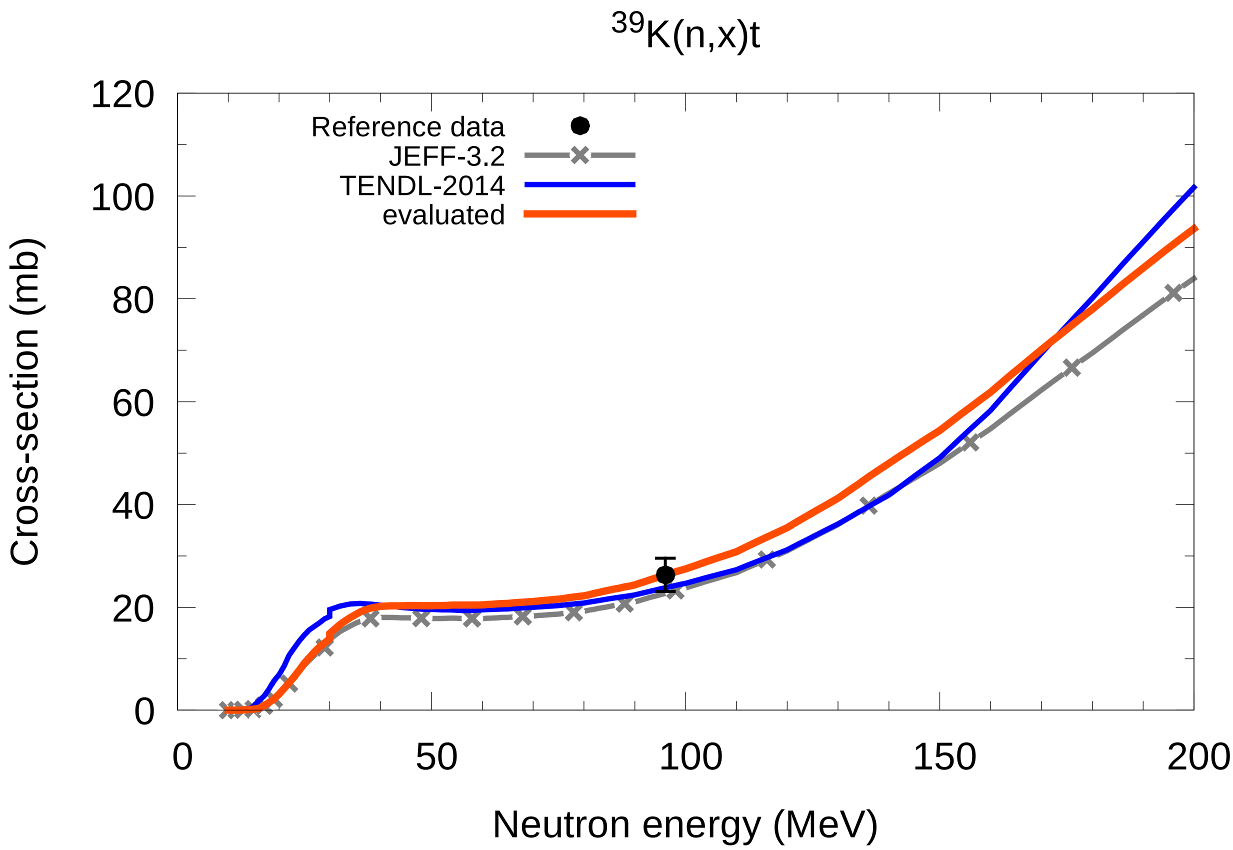
^{36}Ar(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
0
20
40
60
80
100
120
140
0
50
100
150
200
Neutron energy (MeV)



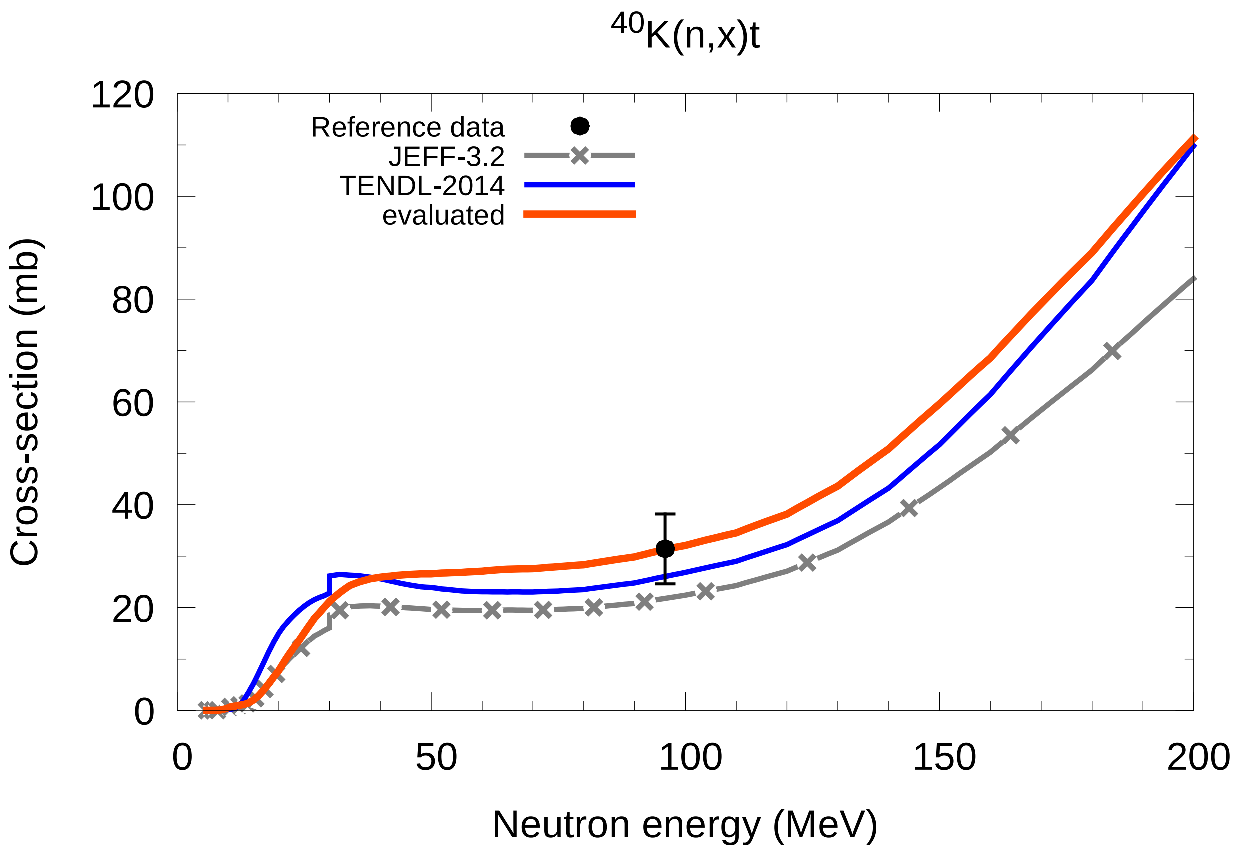
^{38}Ar(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
0
20
40
60
80
100
120
140
0
50
100
150
200
Neutron energy (MeV)



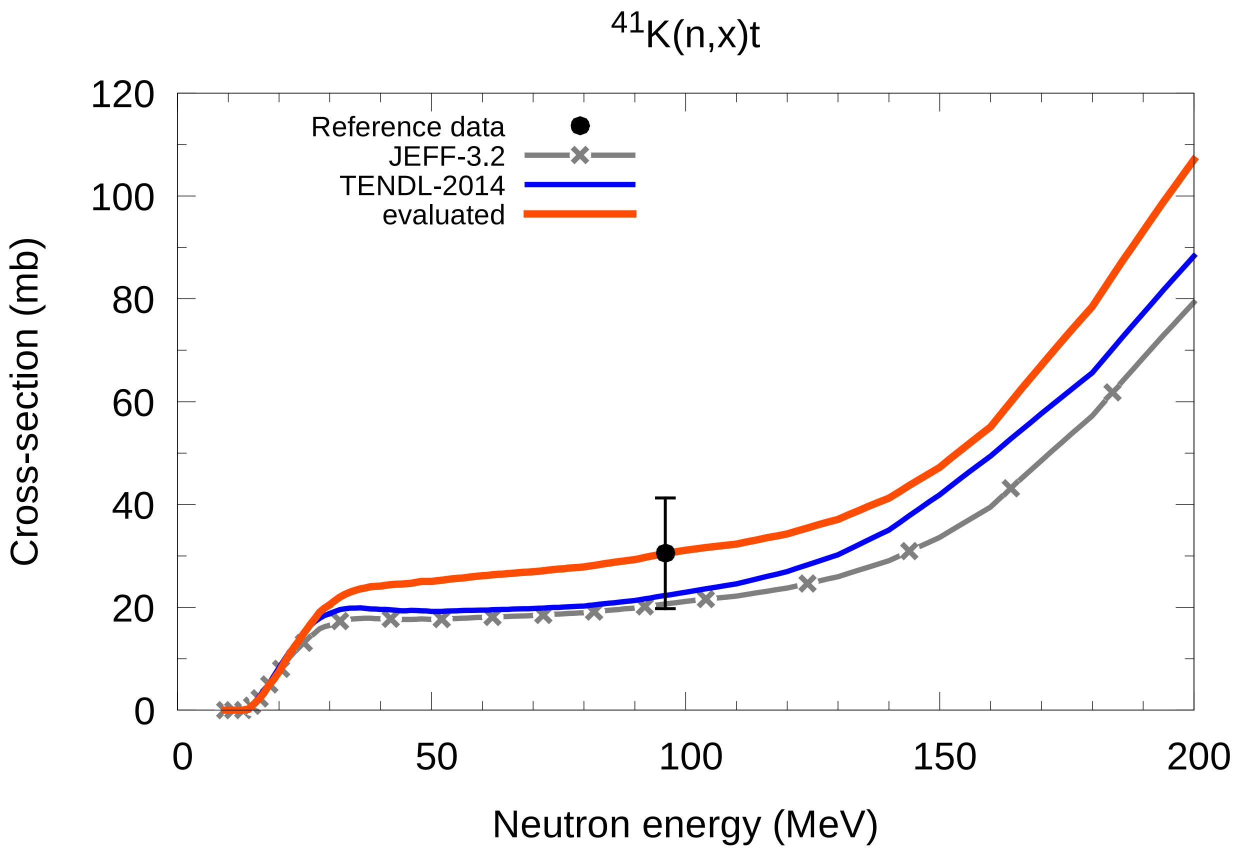
^{40}Ar(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
0
50
100
150
200



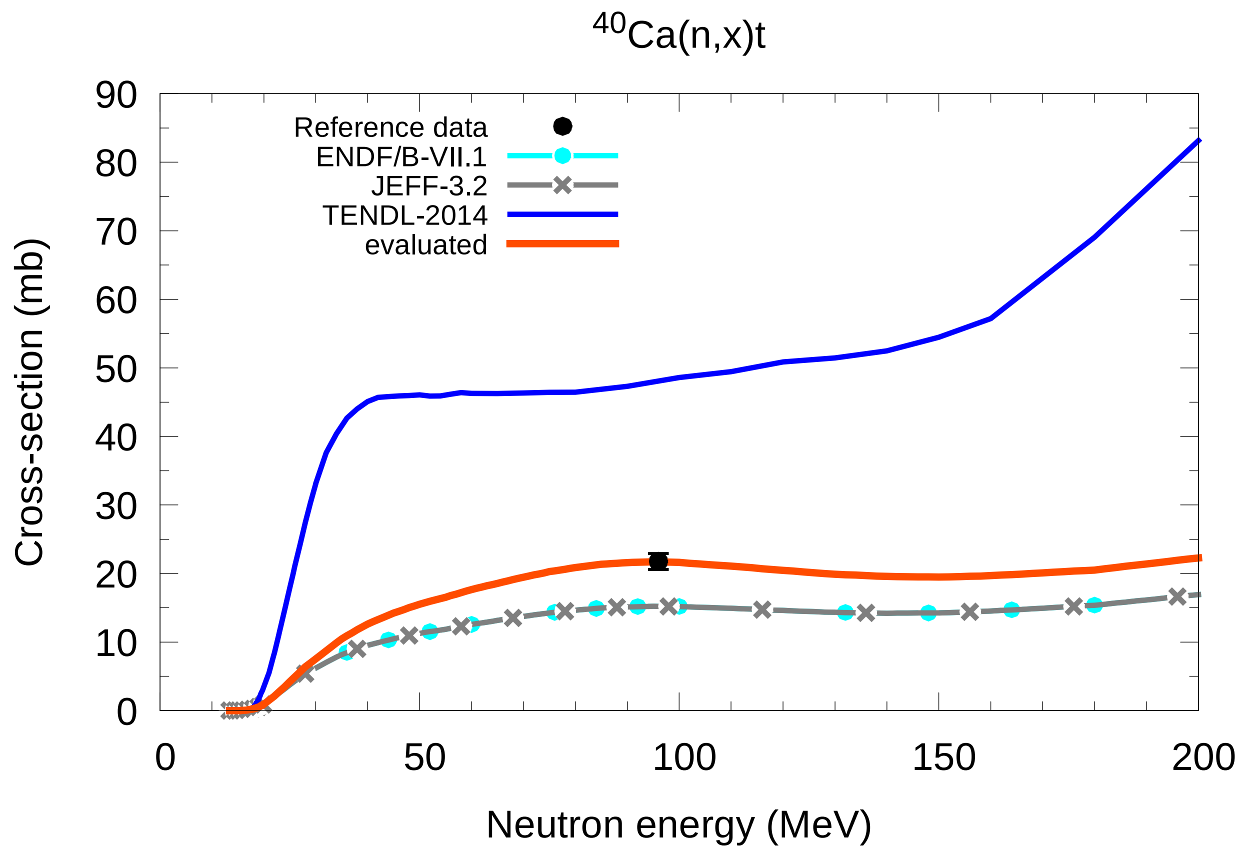
^{39}K(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
0
50
100
150
200



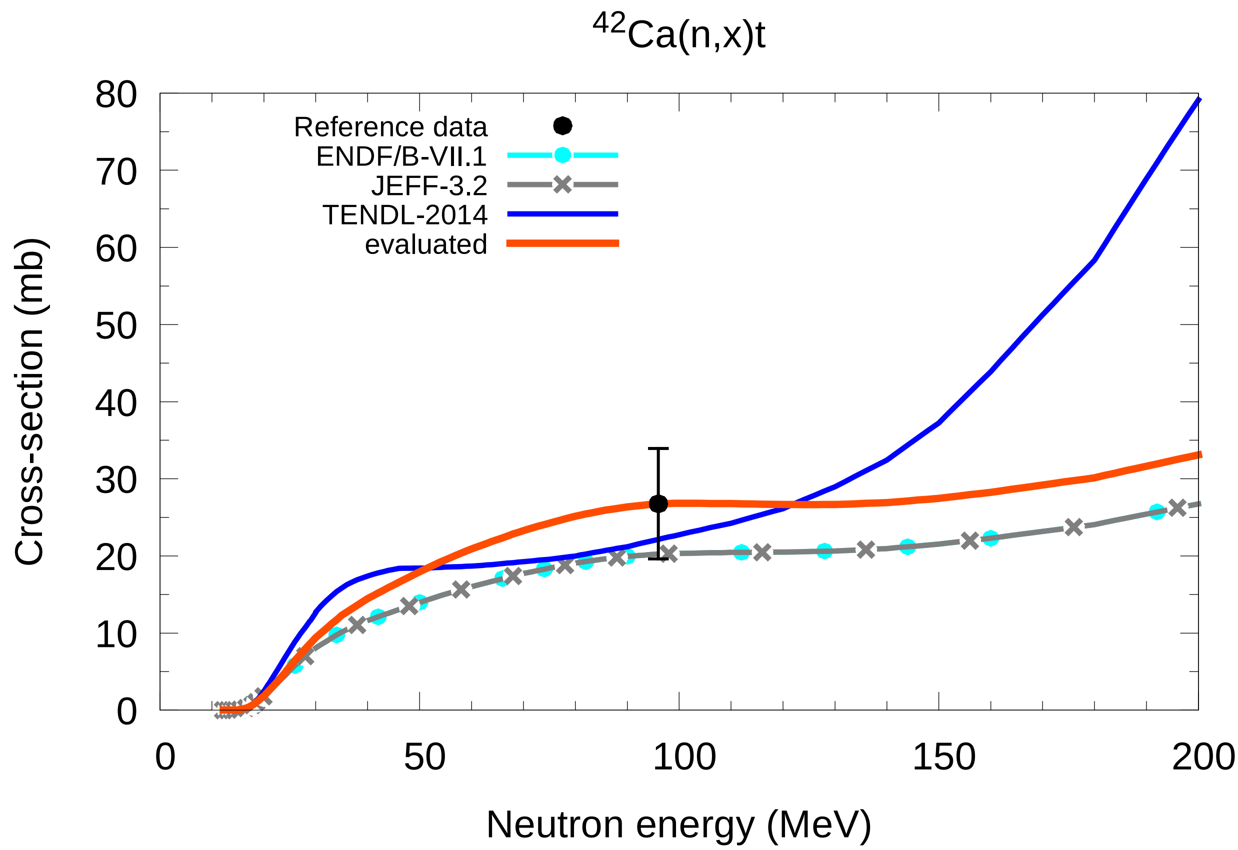
^{40}K(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
50
150
200



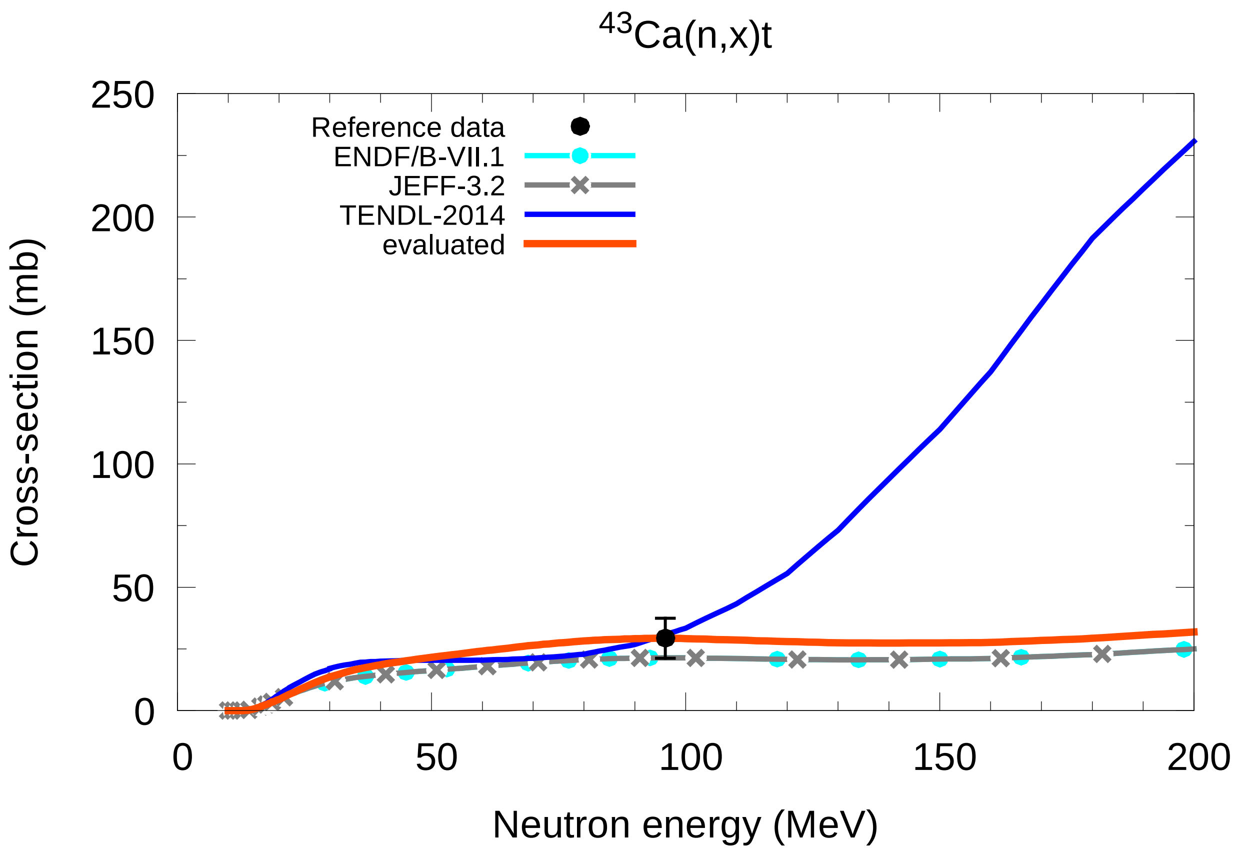
^{41}K(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
50
150
200



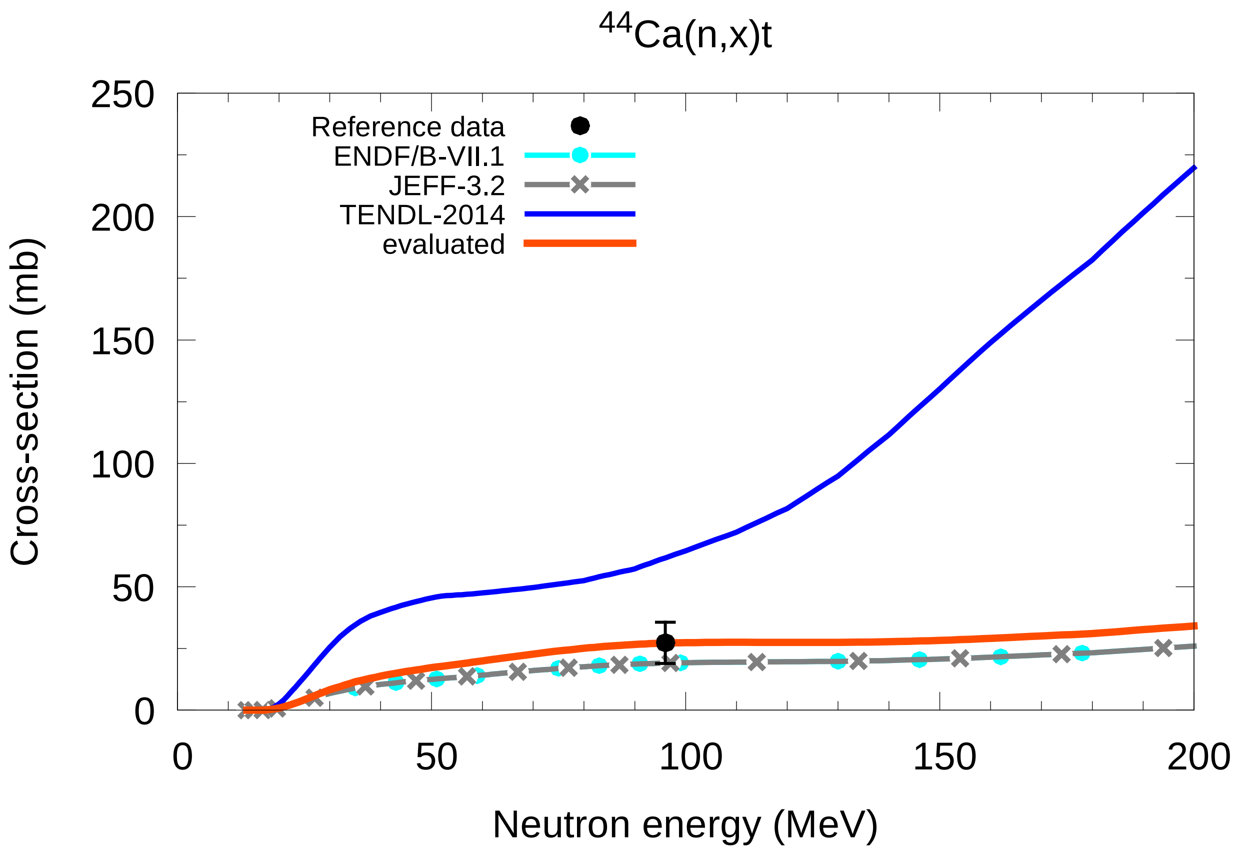
^{40}Ca(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
10
20
30
40
50
60
70
80
90
0
50
100
150
200



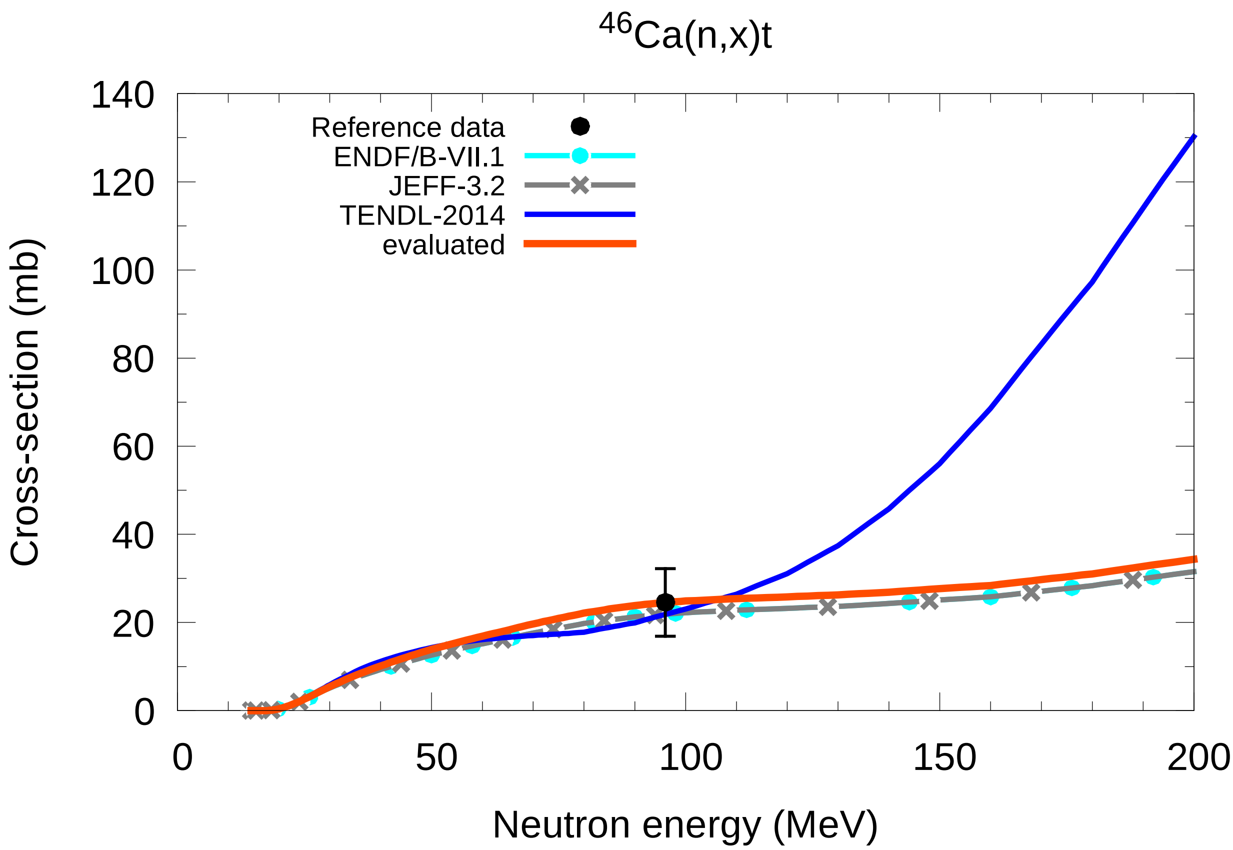
^{42}Ca(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
10
20
30
40
50
60
70
80
0
50
100
150
200



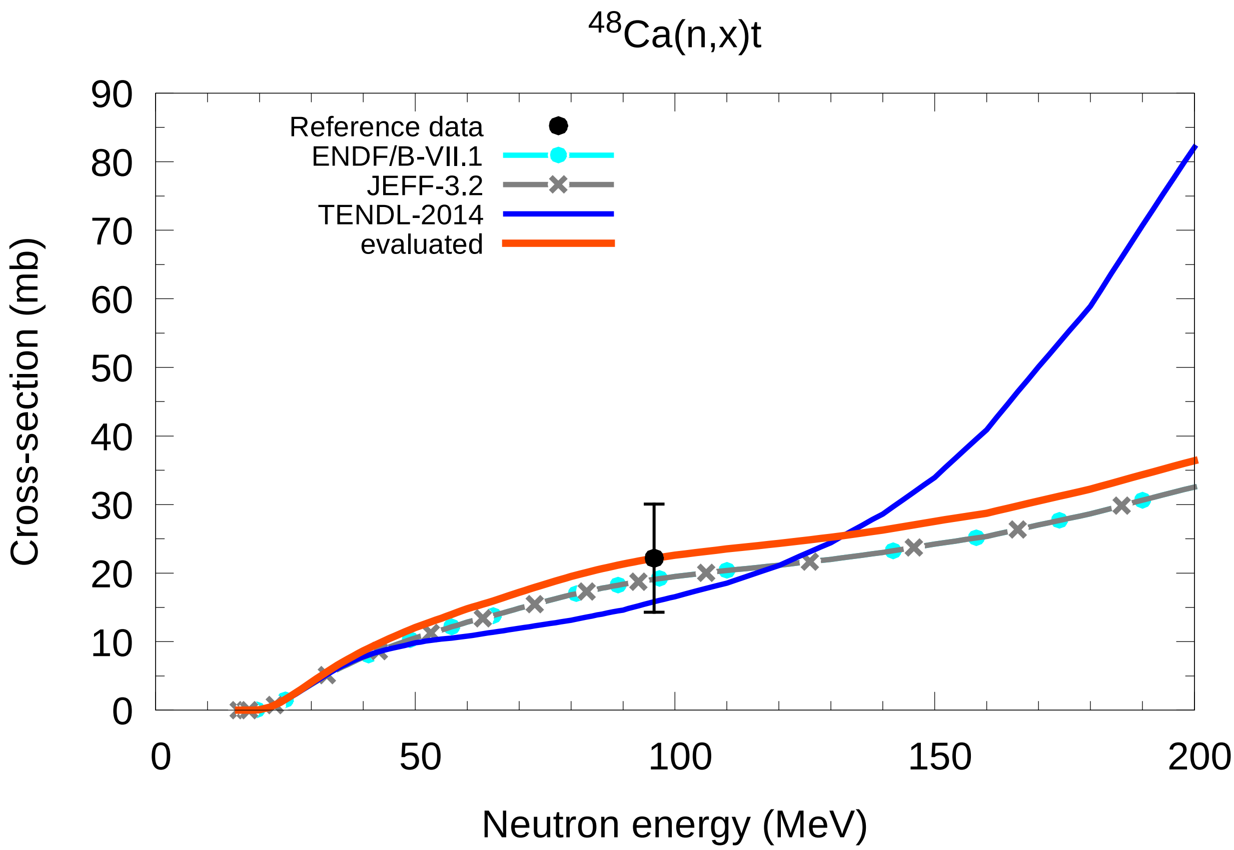
^{43}Ca(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
0
50
100
150
200
250
0
50
100
150
200
Neutron energy (MeV)



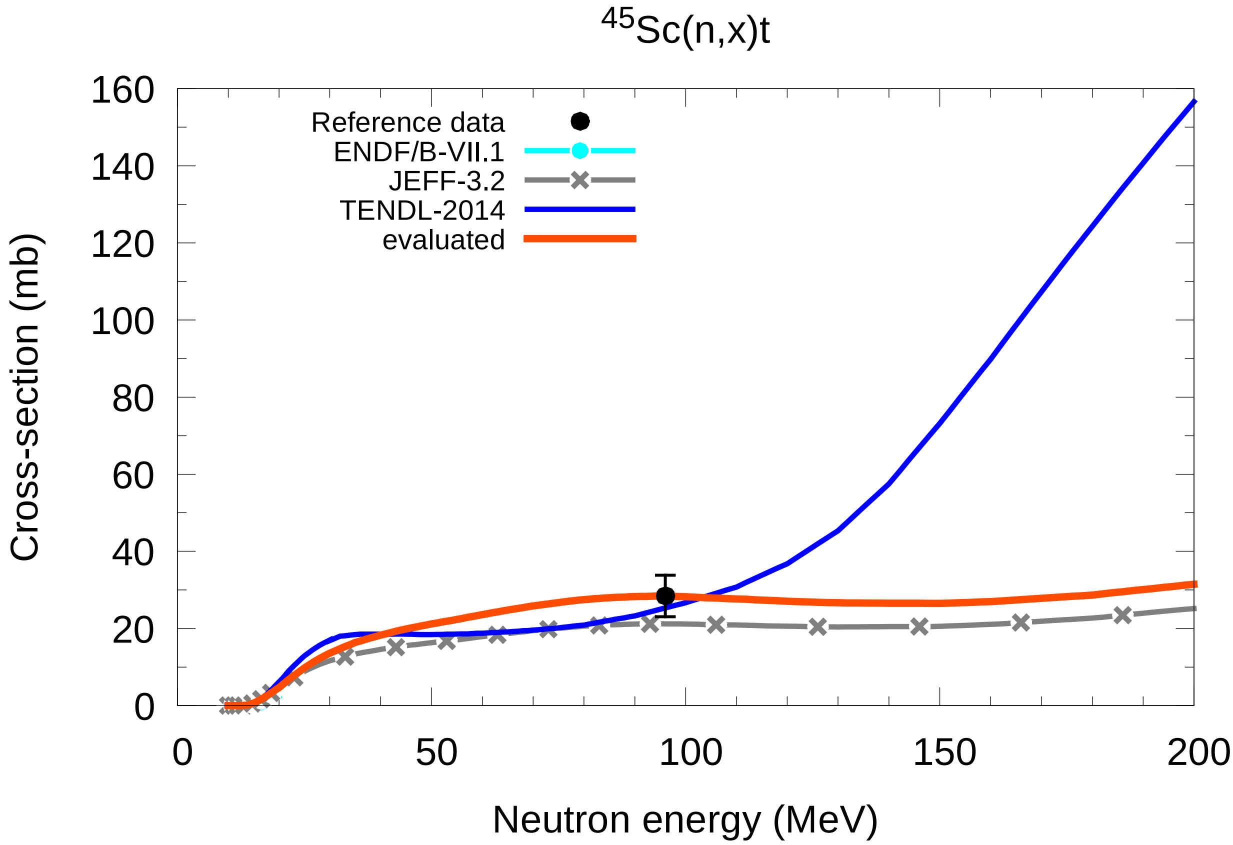
^{44}Ca(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
0
50
100
150
200
250
0
50
100
150
200
Neutron energy (MeV)



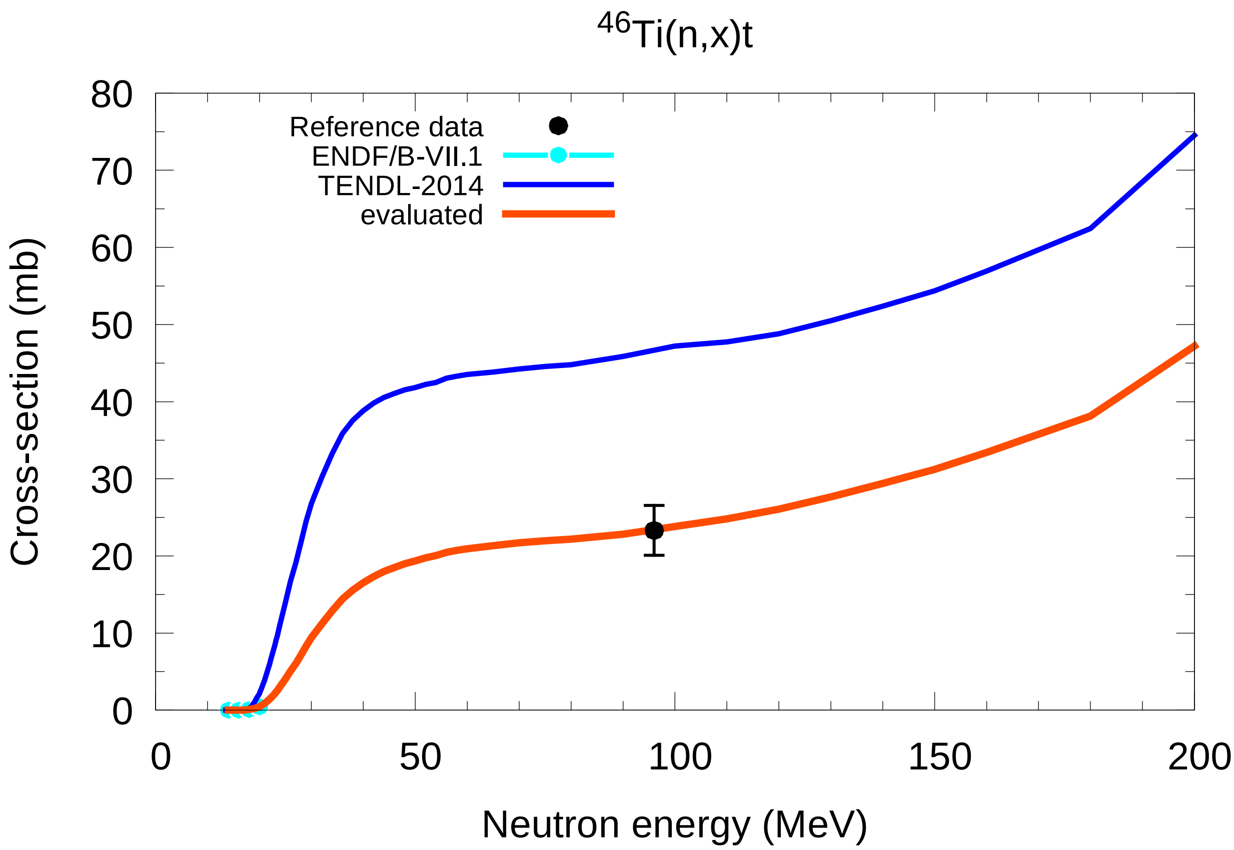
^{46}Ca(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
0
50
100
150
200



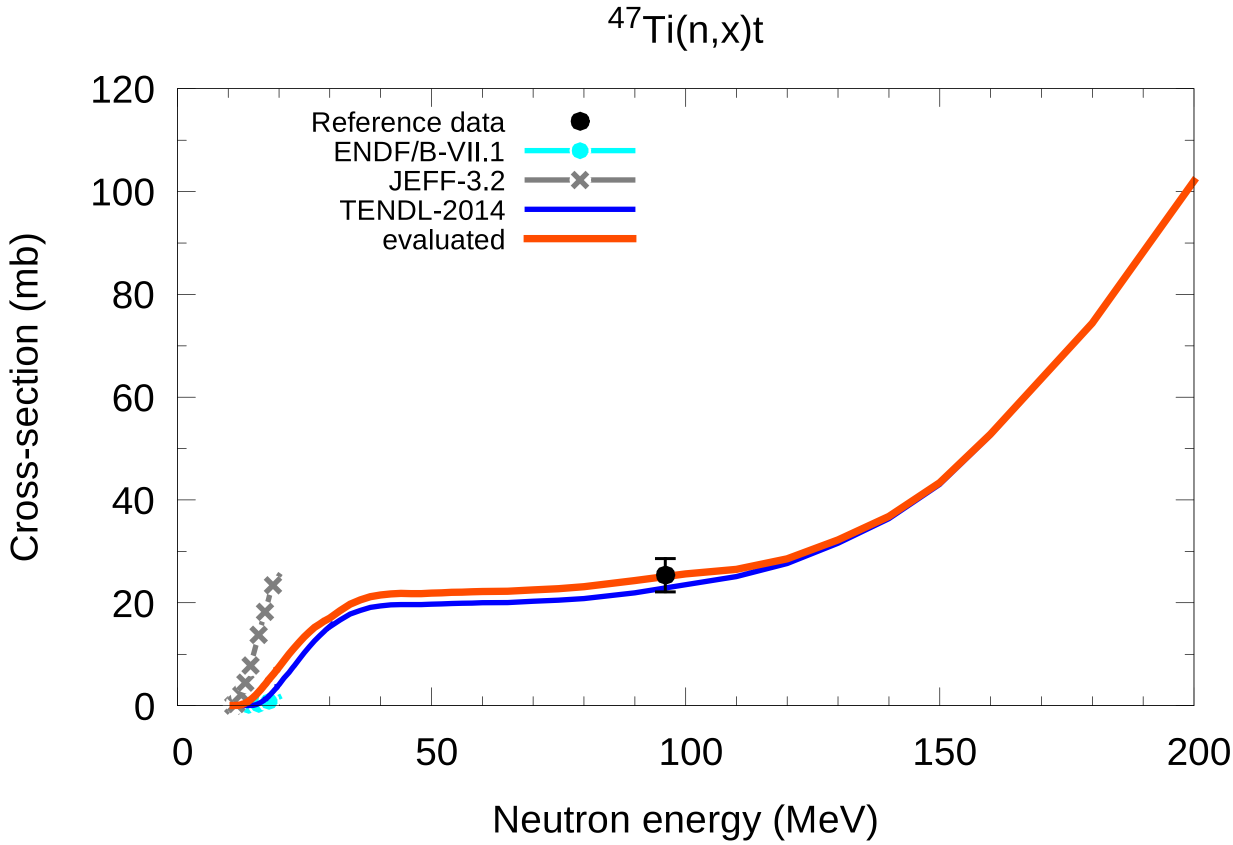
^{48}Ca(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
10
20
30
40
50
60
70
80
90
0
50
100
150
200



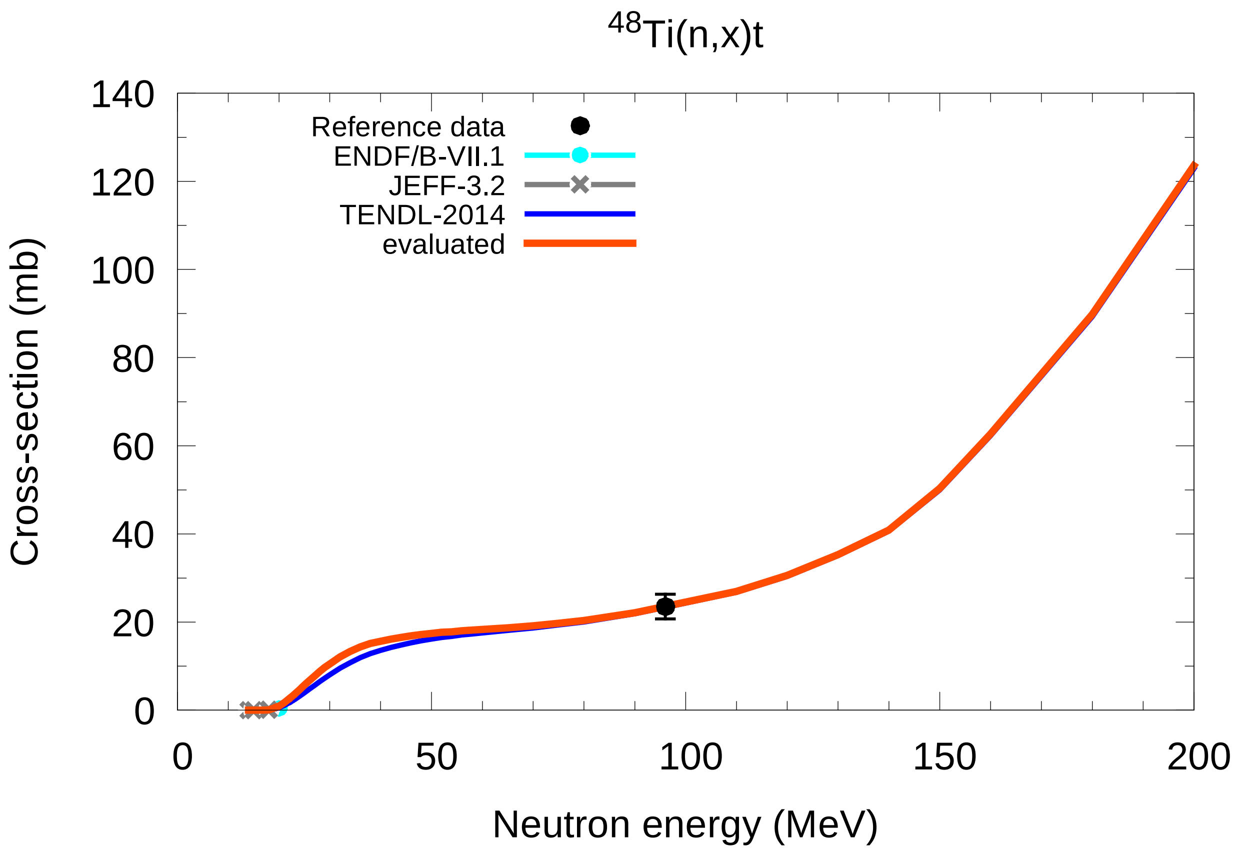
^{45}Sc(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
0
50
100
150
200



^{46}Ti(n,x)t
Reference data
ENDF/B-VII.1
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
10
20
30
40
50
60
70
80
0
50
100
150
200



^{47}Ti(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
0
50
100
150
200



^{48}Ti(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
0
50
100
150
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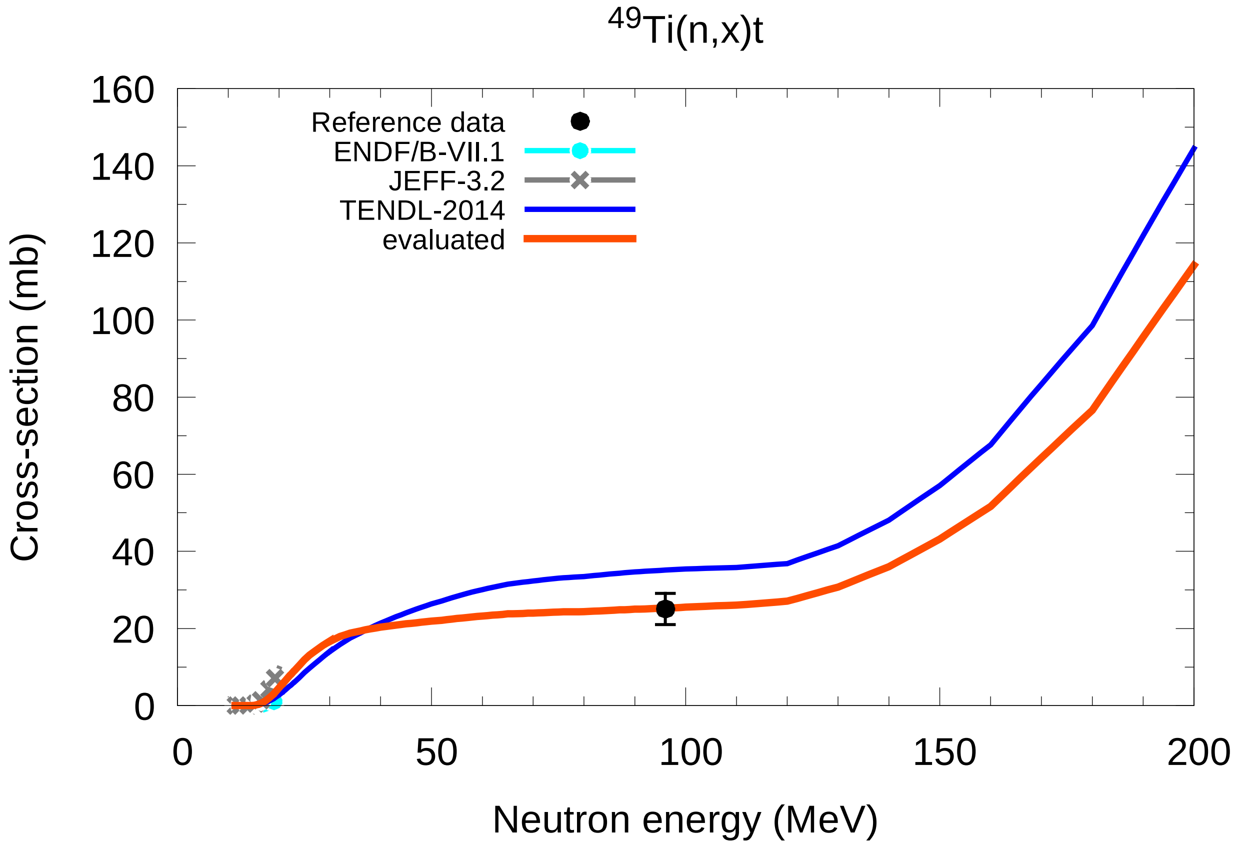
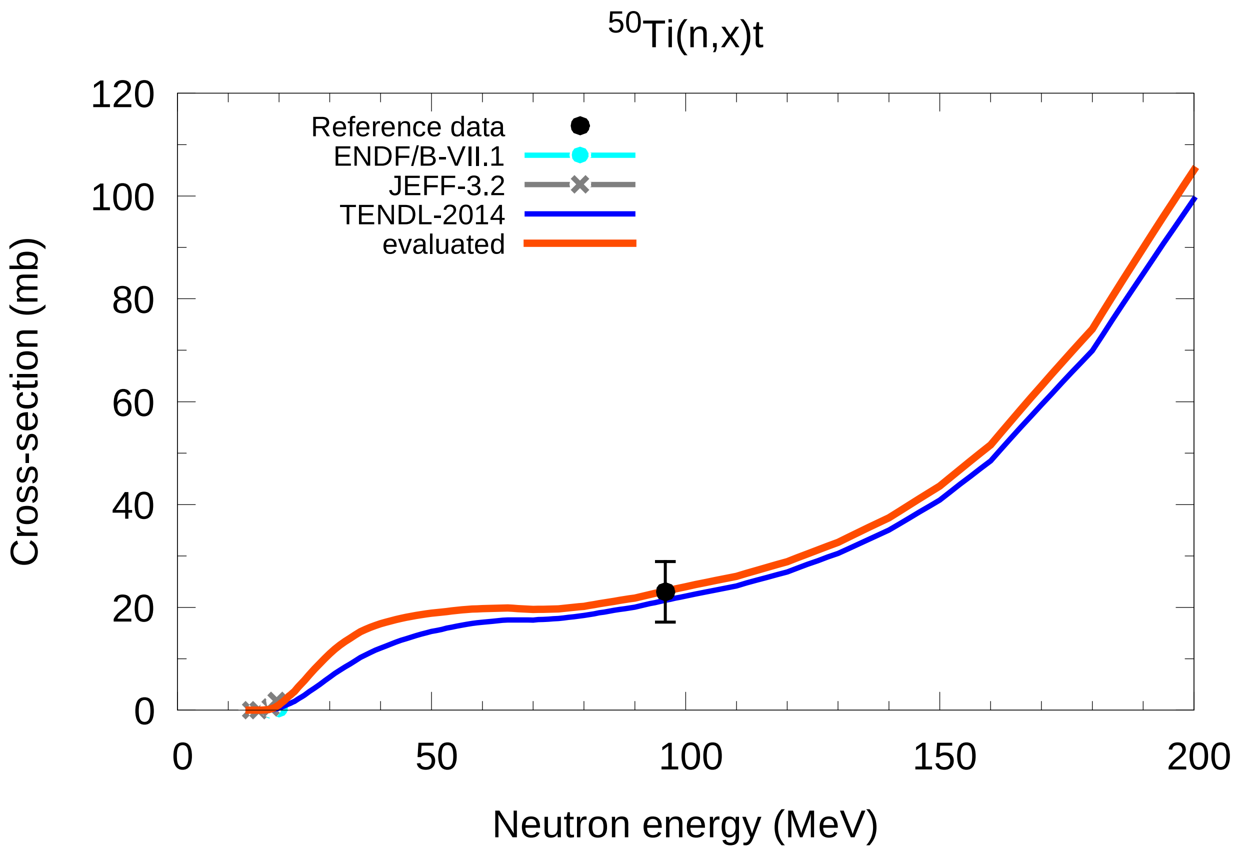


^{49}Ti(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
0
50
100
150
200



^{50}Ti(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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80
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120
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100
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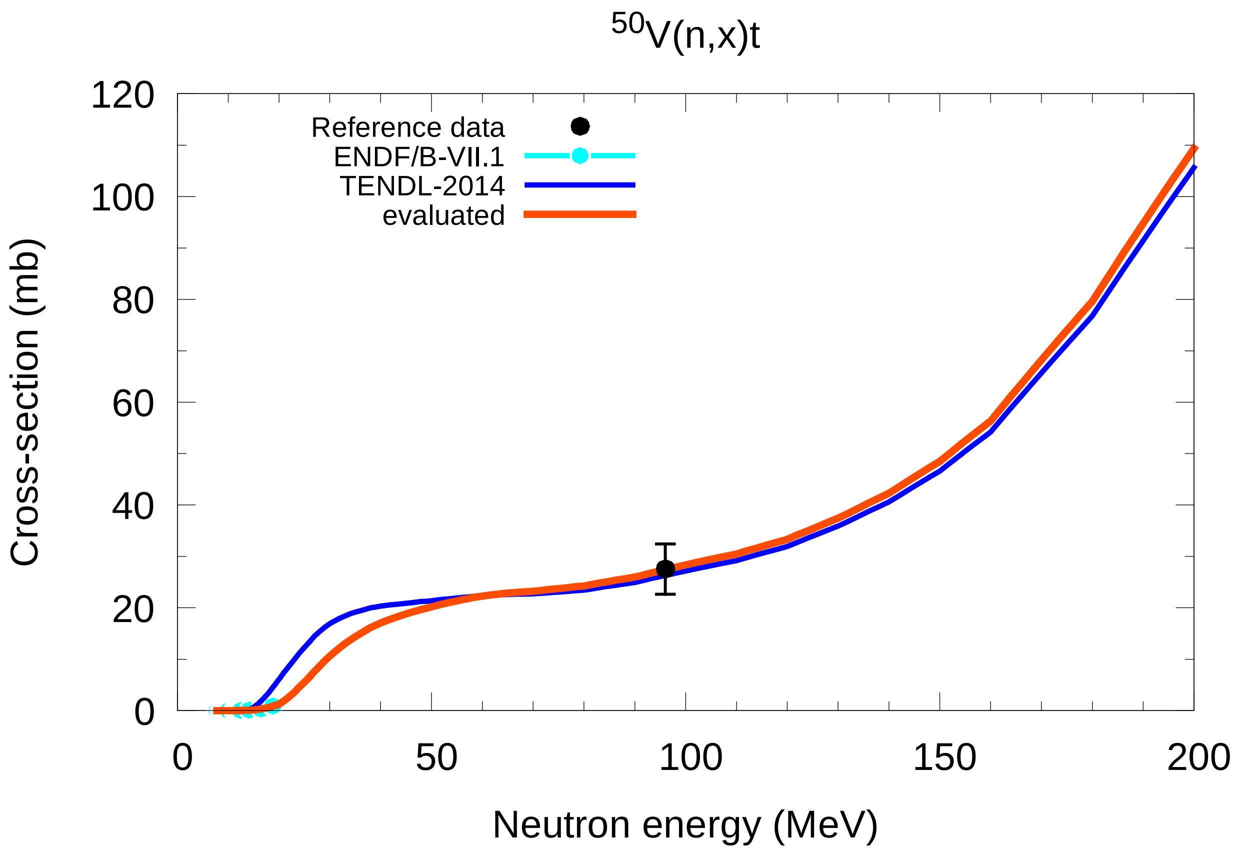

^{50}V(n,x)t
Reference data
ENDF/B-VII.1
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
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80
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0
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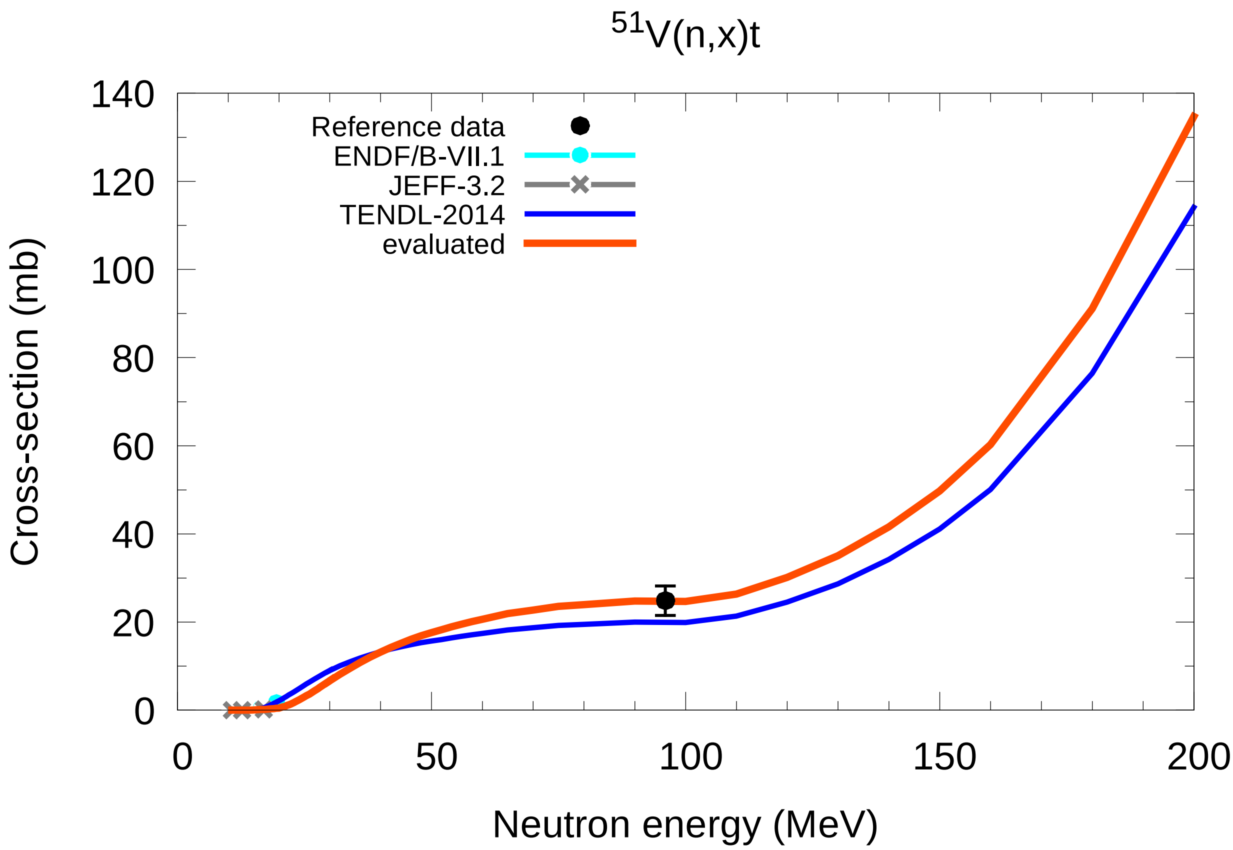
100
150
200



^{51}V(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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100
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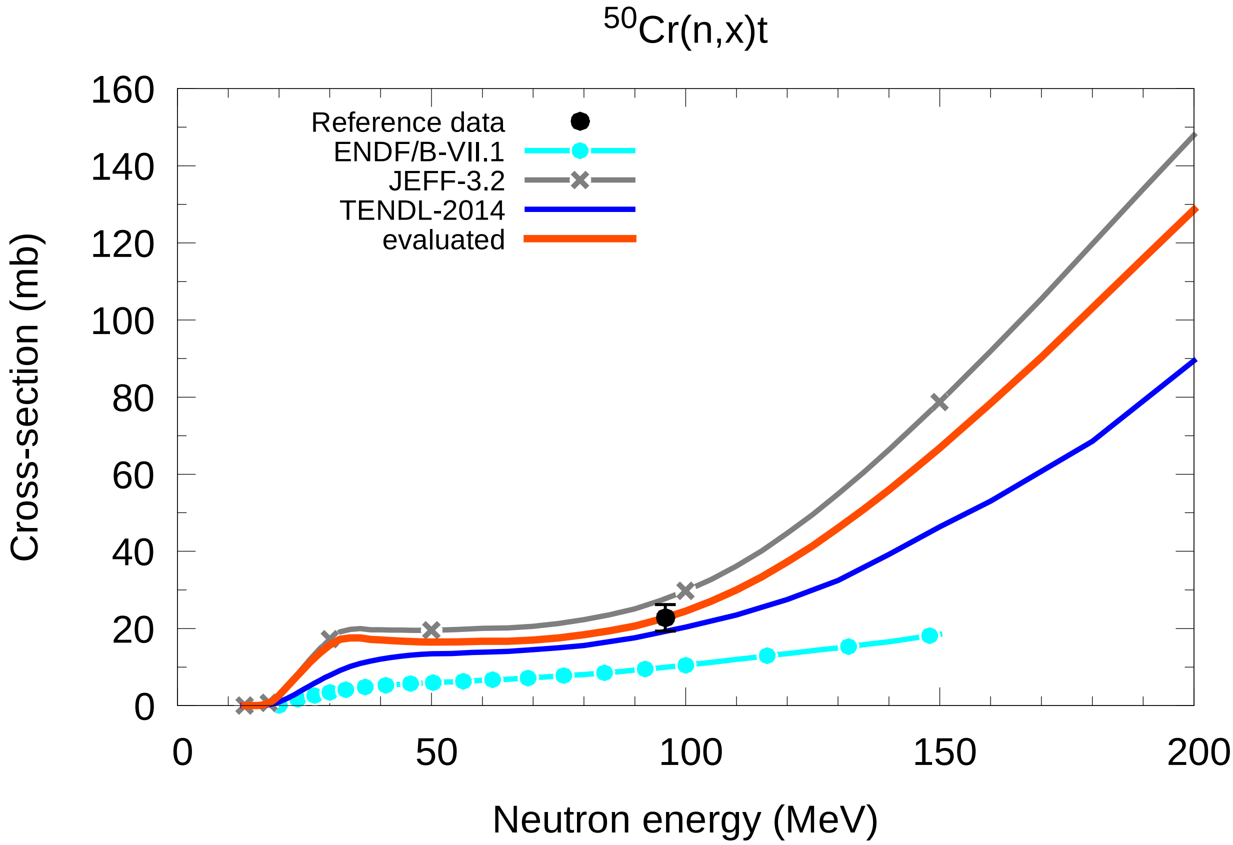

^{50}Cr(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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40
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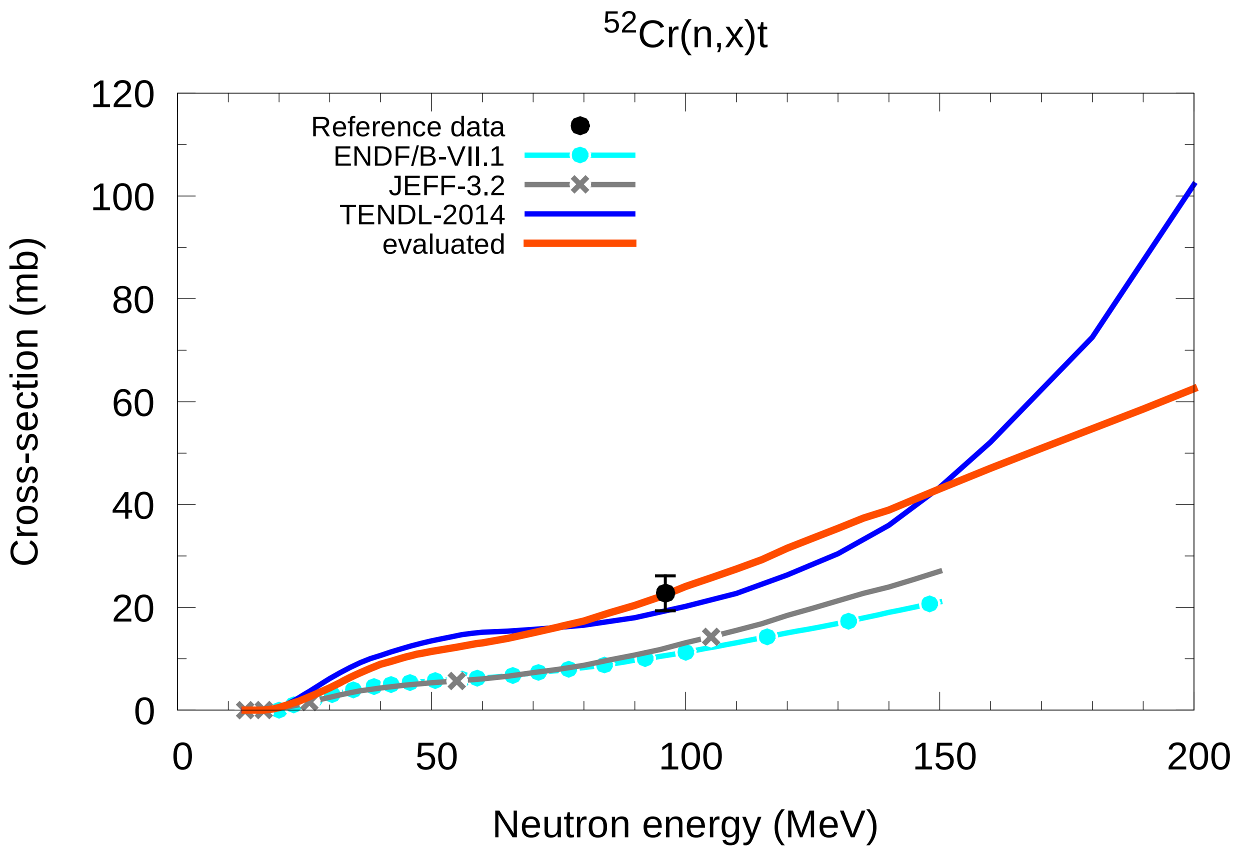

^{52}Cr(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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40
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80
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0
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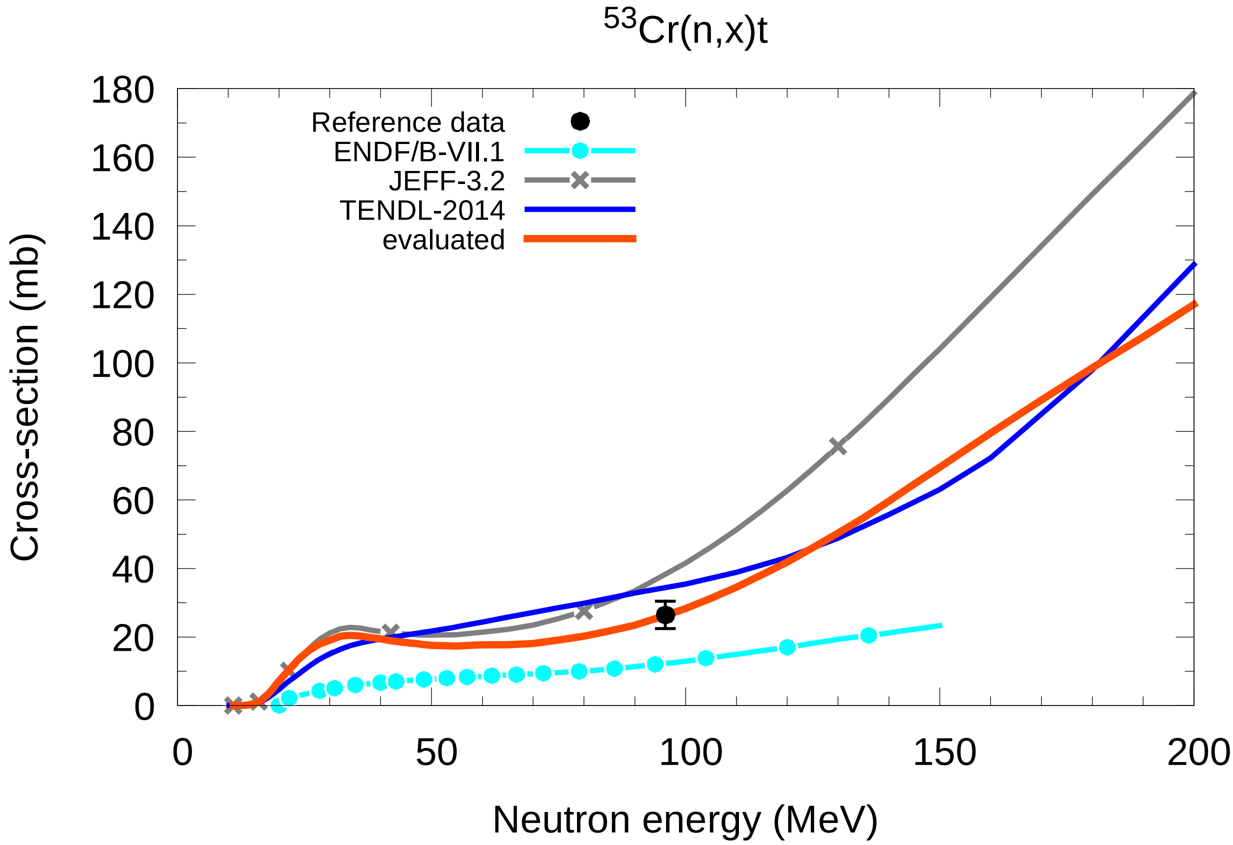
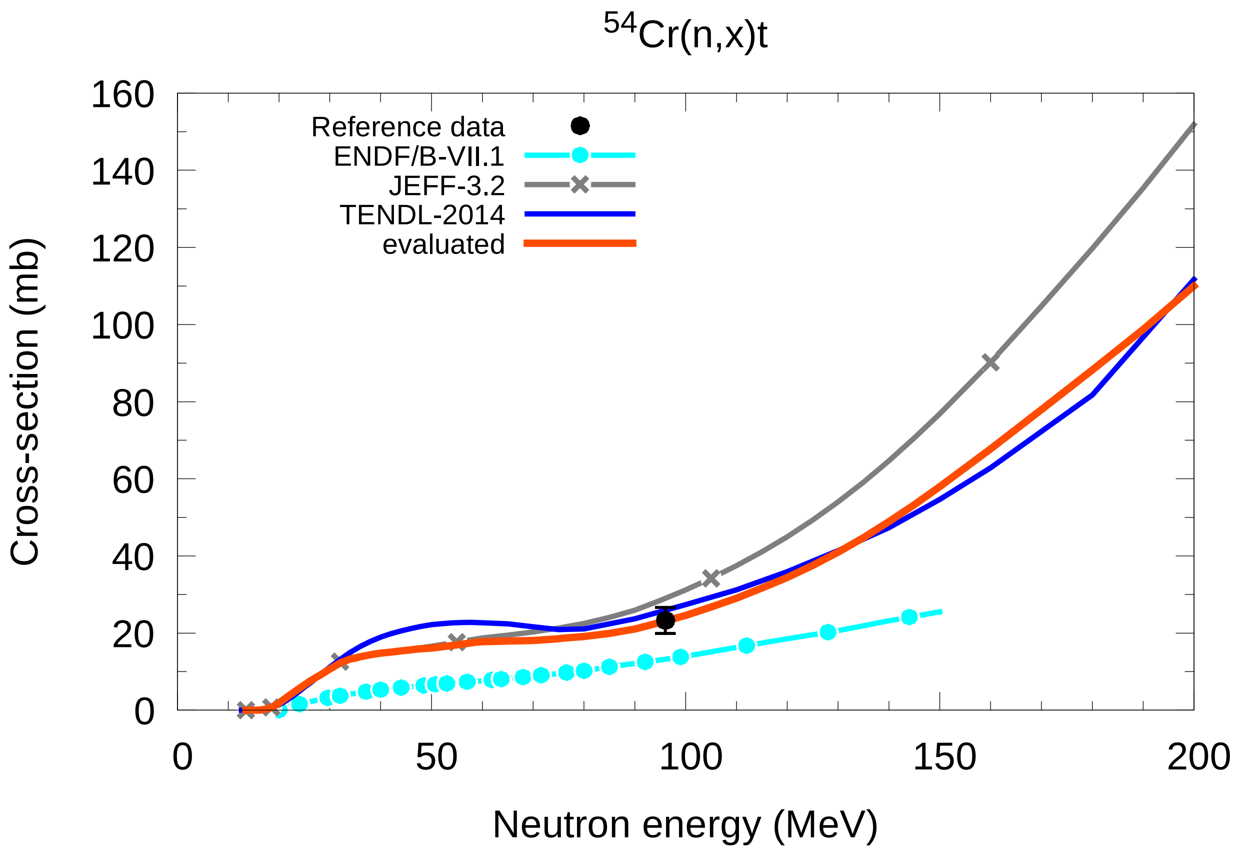


^{53}Cr(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
0
50
100
150
200



^{54}Cr(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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40
60
80
100
120
140
160
0
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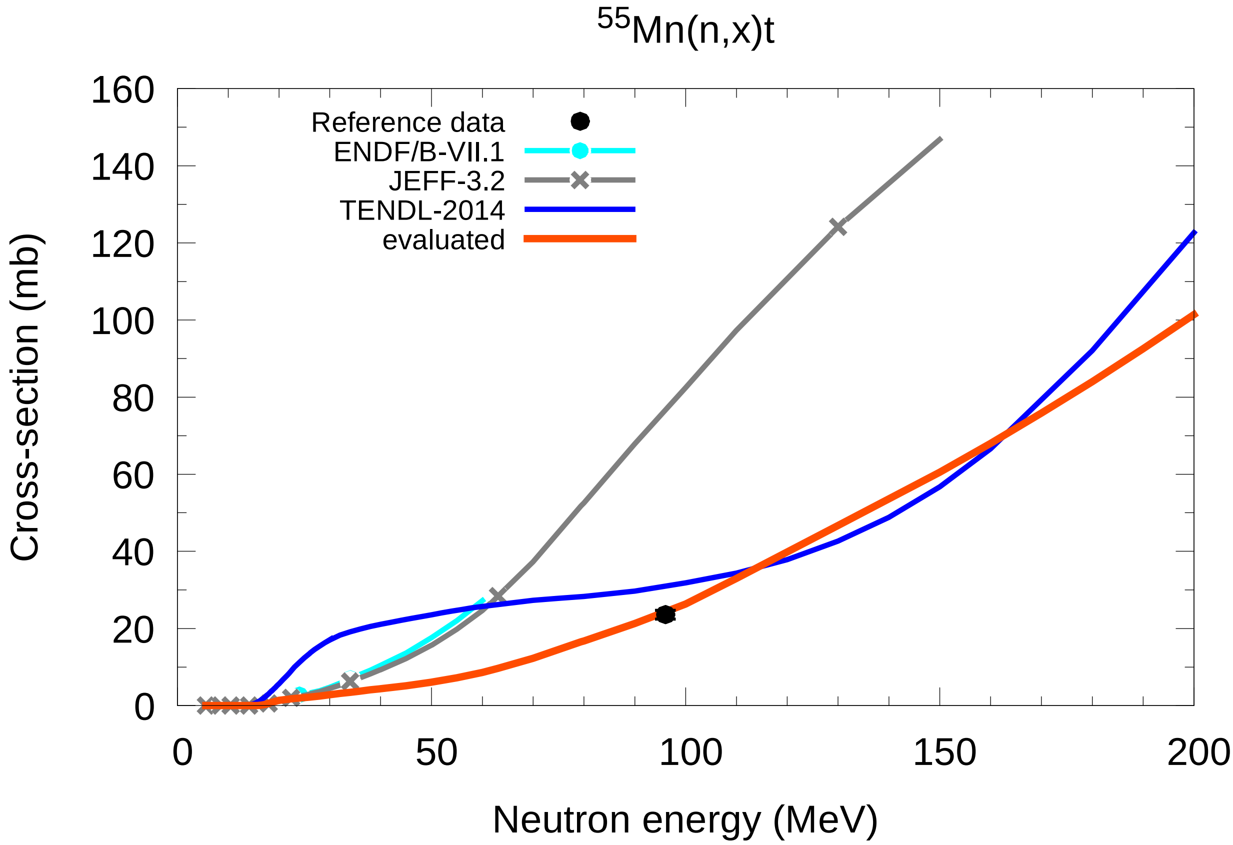
100
150
200



^{55}Mn(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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40
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80
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120
140
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0
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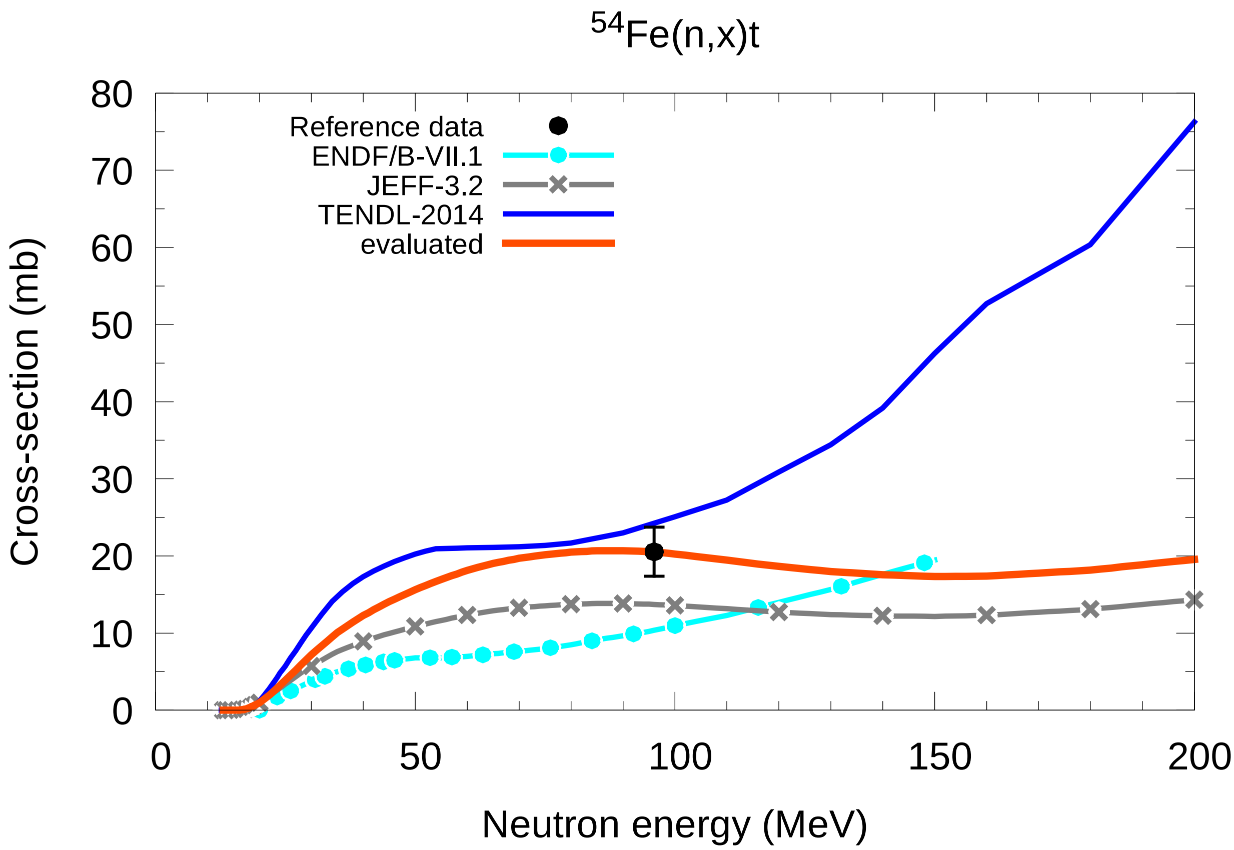
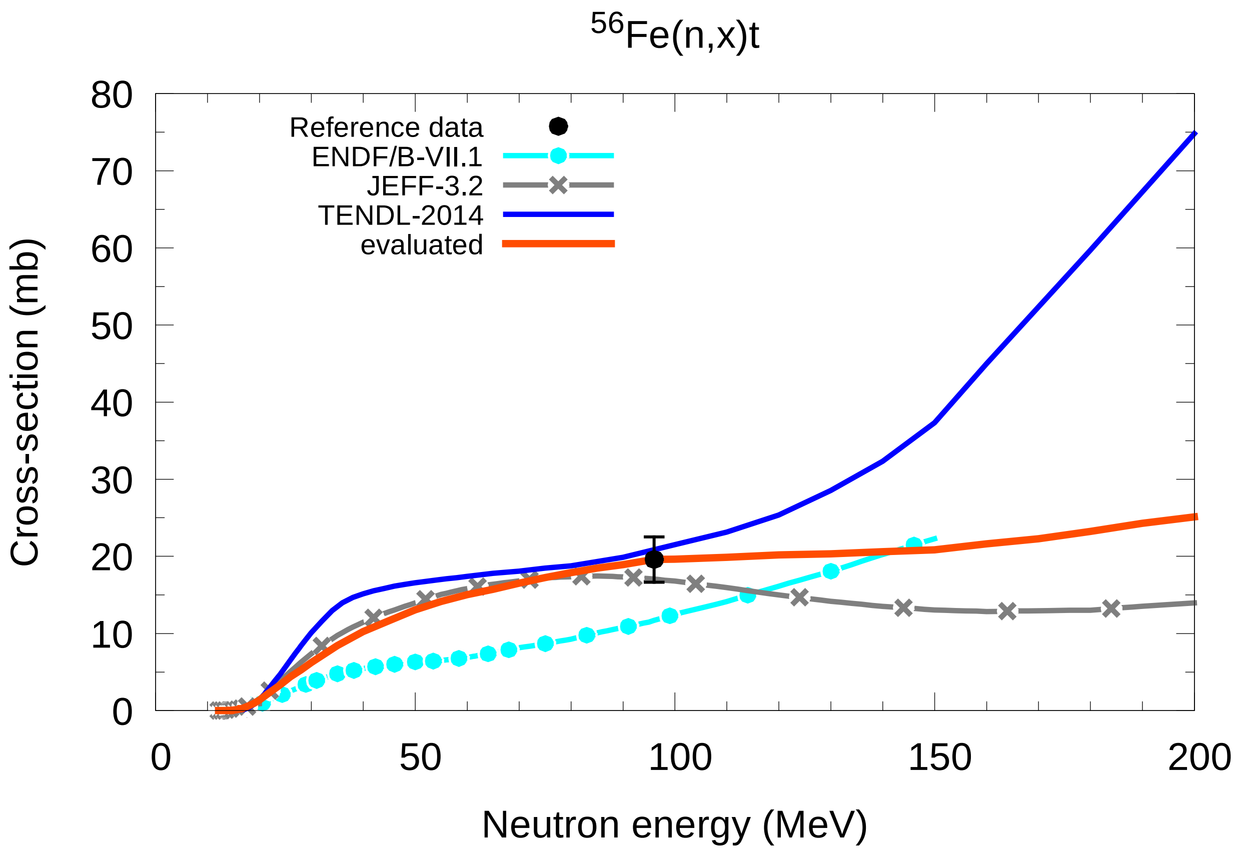
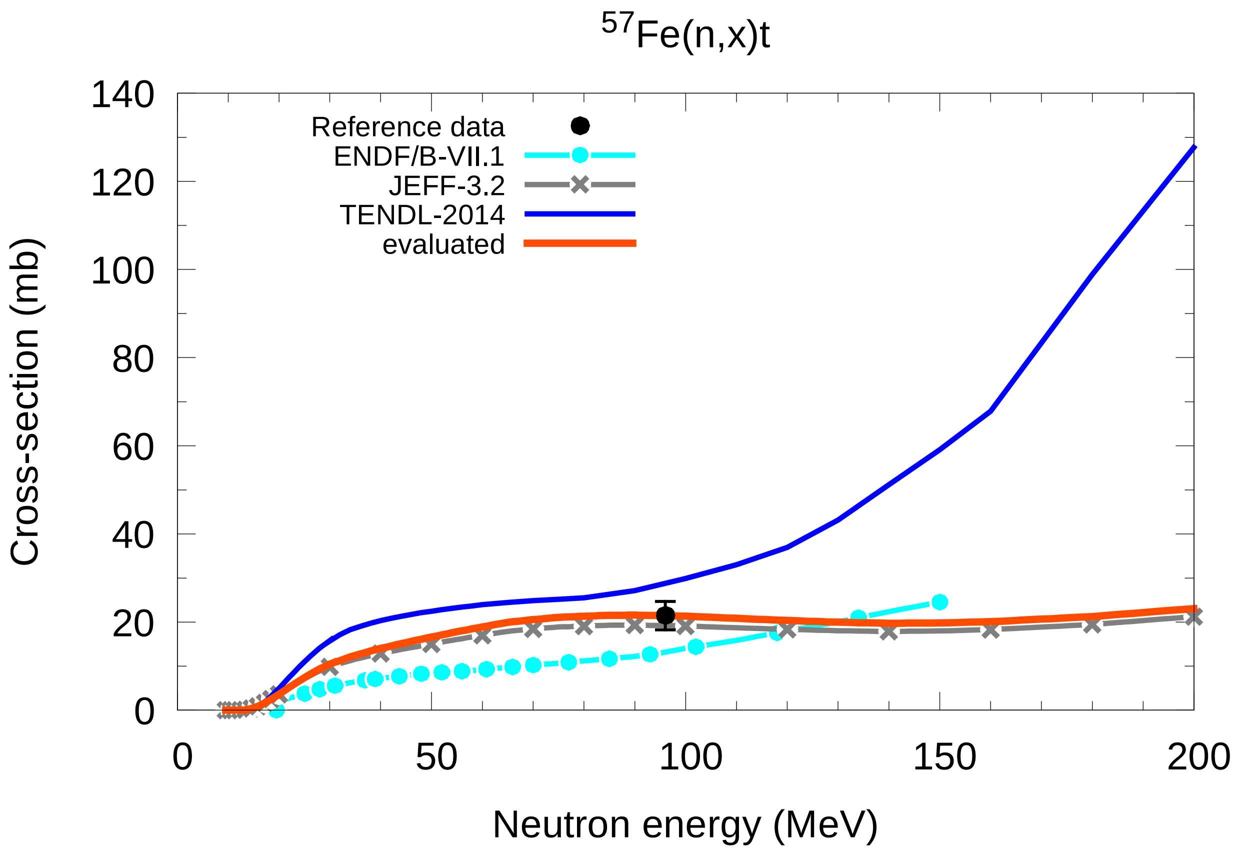
150
200



^{54}Fe(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
10
20
30
40
50
60
70
80
0
50
100
150
200


56Fe(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
10
20
30
40
50
60
70
80
0
50
100
150
200


57Fe(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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20
40
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100
120
140
0
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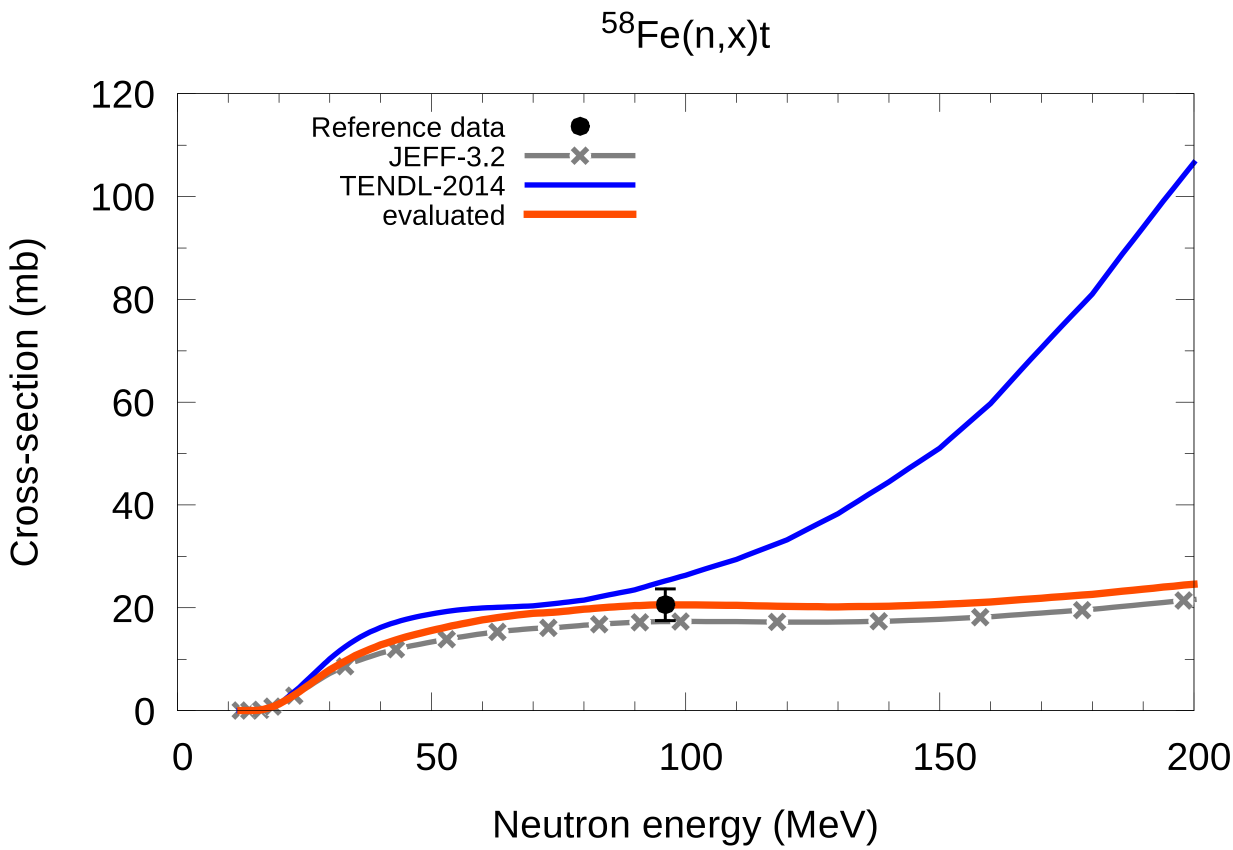
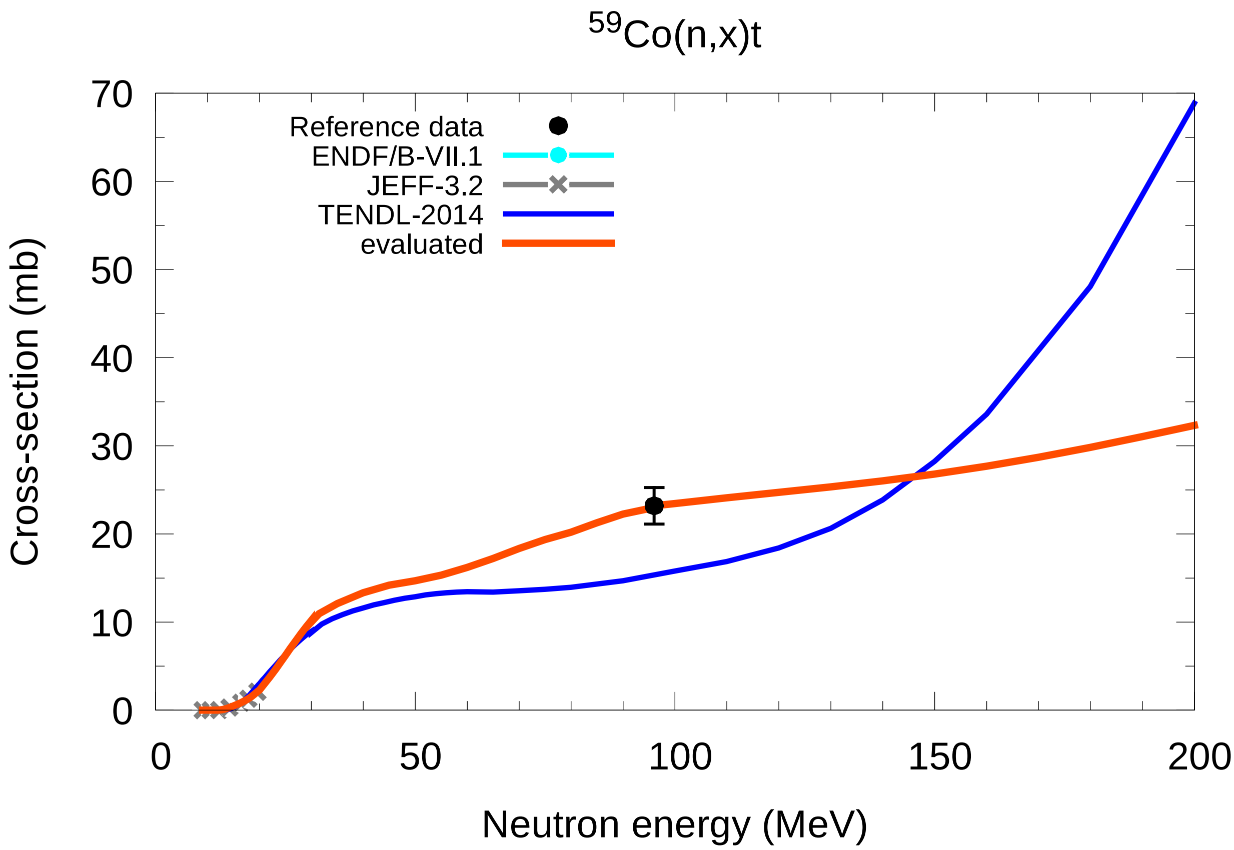
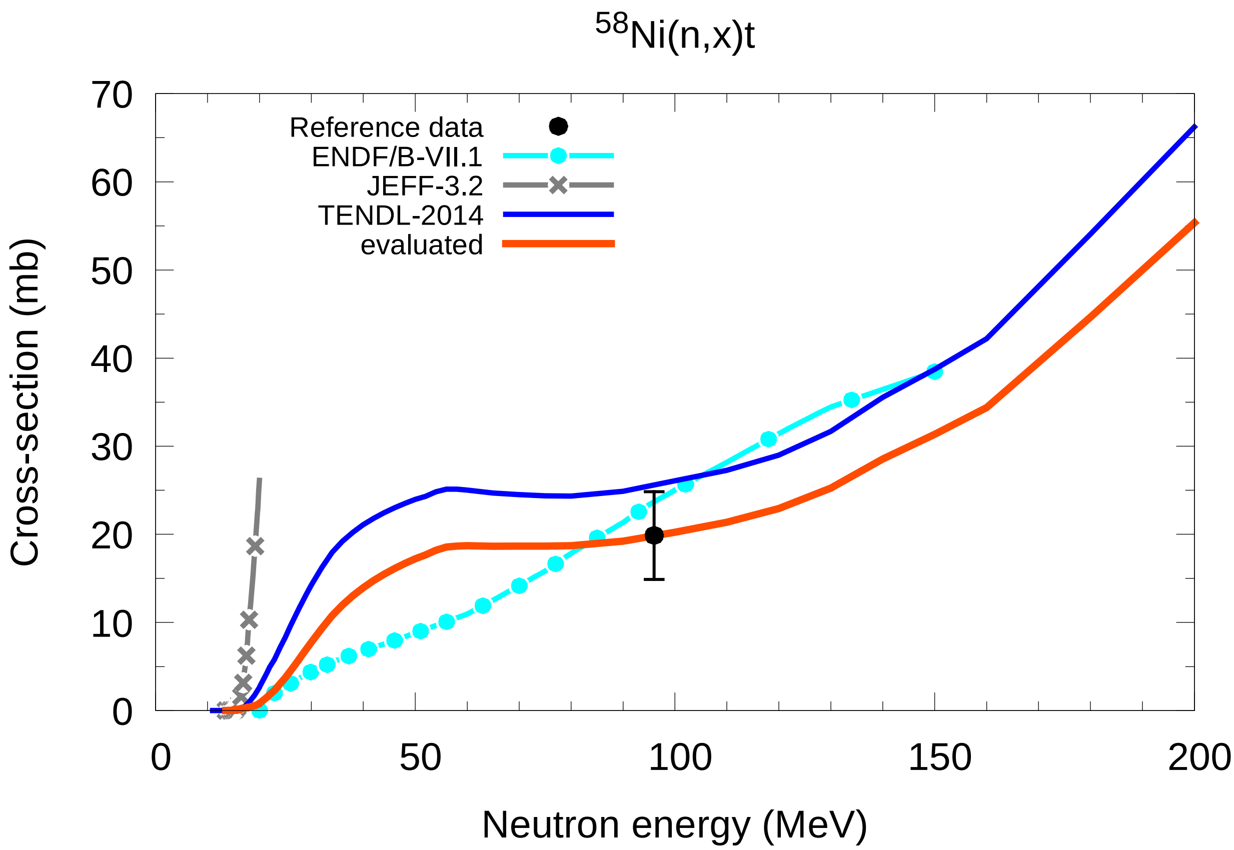
200



^{58}Fe(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
0
20
40
60
80
100
120
0
50
100
150
200
Neutron energy (MeV)



^{59}Co(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
0
10
20
30
40
50
60
70
0
50
100
150
200
Neutron energy (MeV)



58Ni(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
10
20
30
40
50
60
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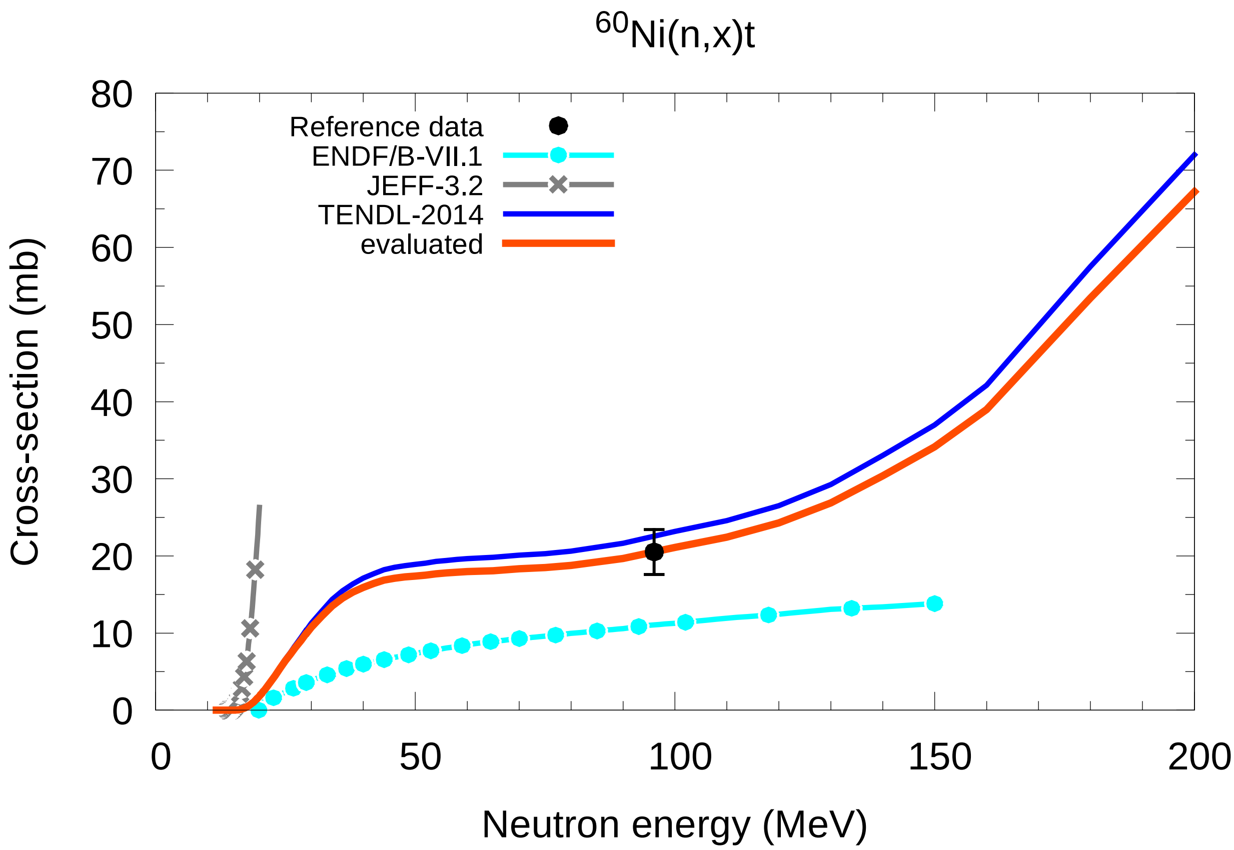
0
50
100
150
200



60Ni(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
10
20
30
40
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60
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80
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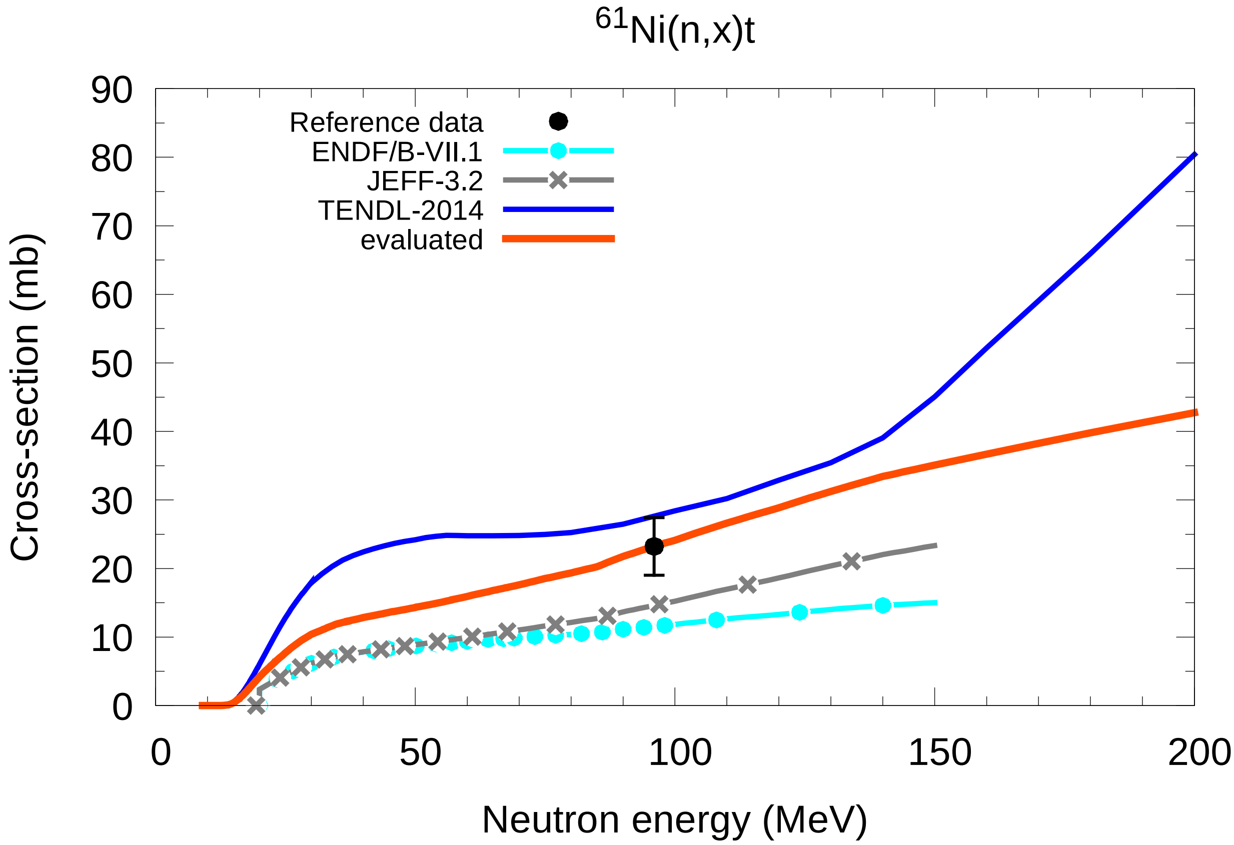
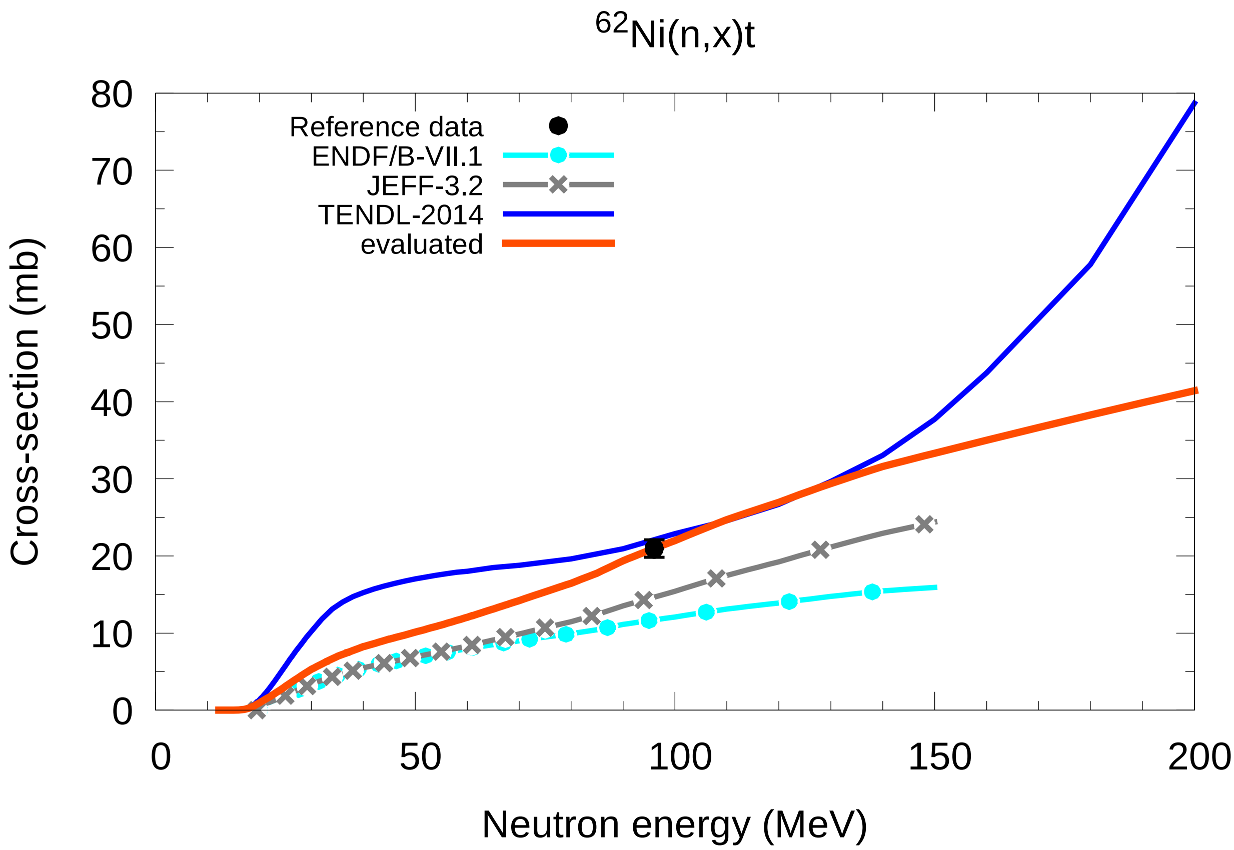
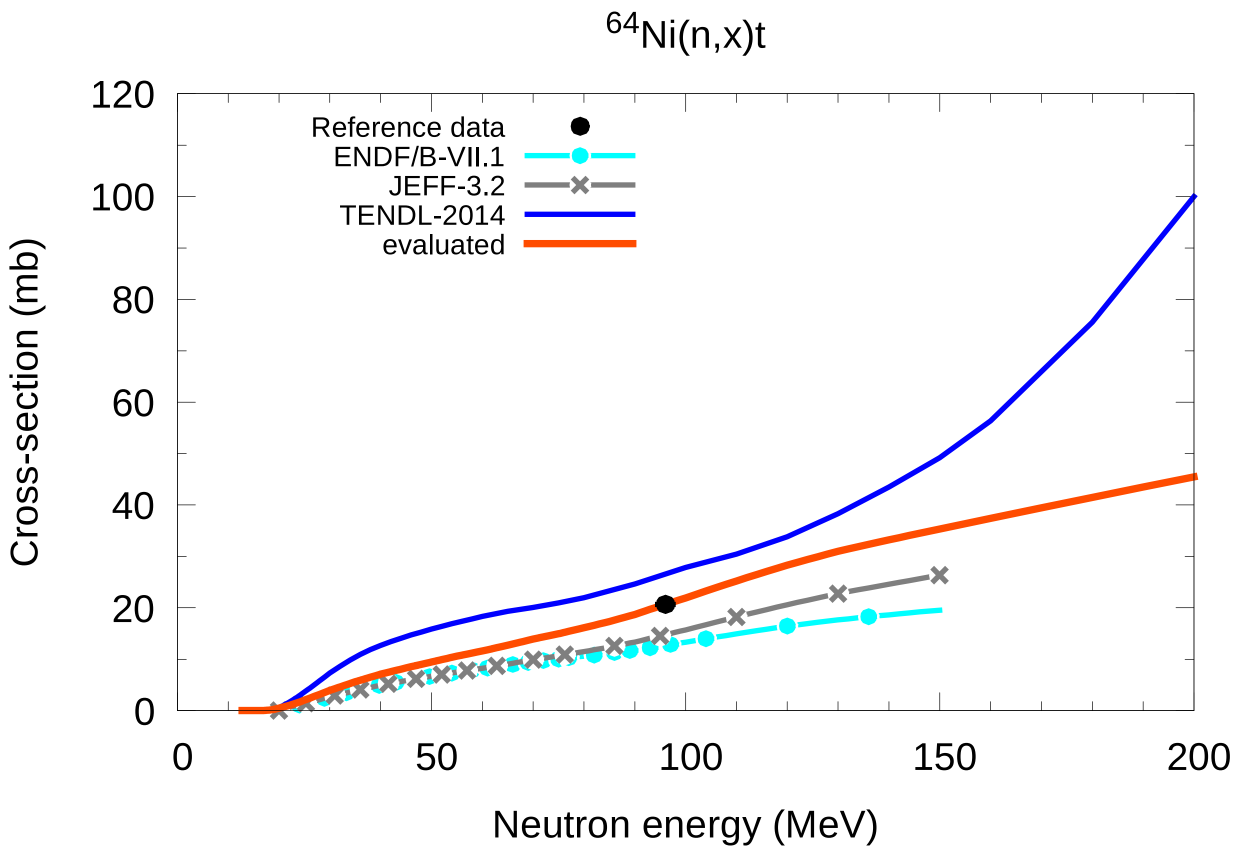
50
100
150
200



^{61}Ni(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
10
20
30
40
50
60
70
80
90
0
50
100
150
200



^{62}Ni(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
10
20
30
40
50
60
70
80
0
50
100
150
200



^{64}Ni(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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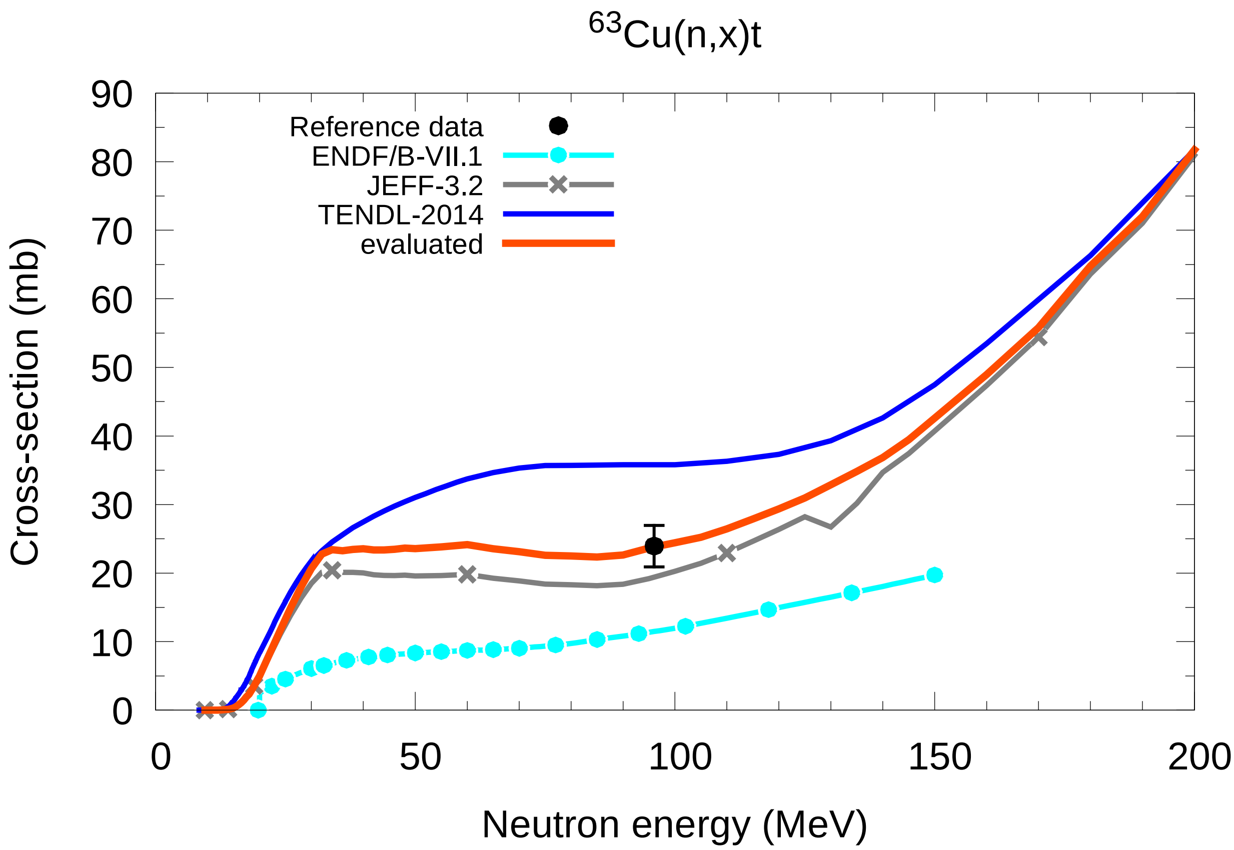

^{63}Cu(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
10
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30
40
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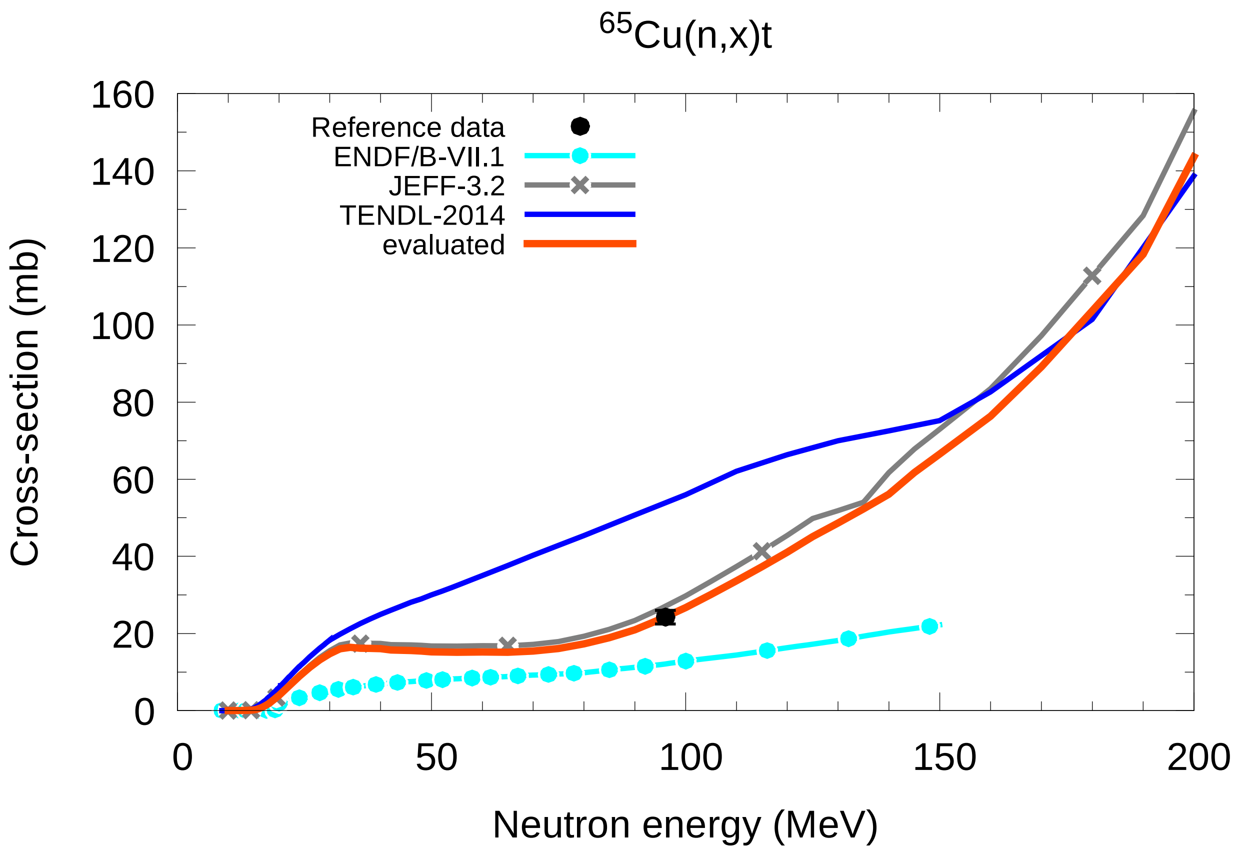

^{65}Cu(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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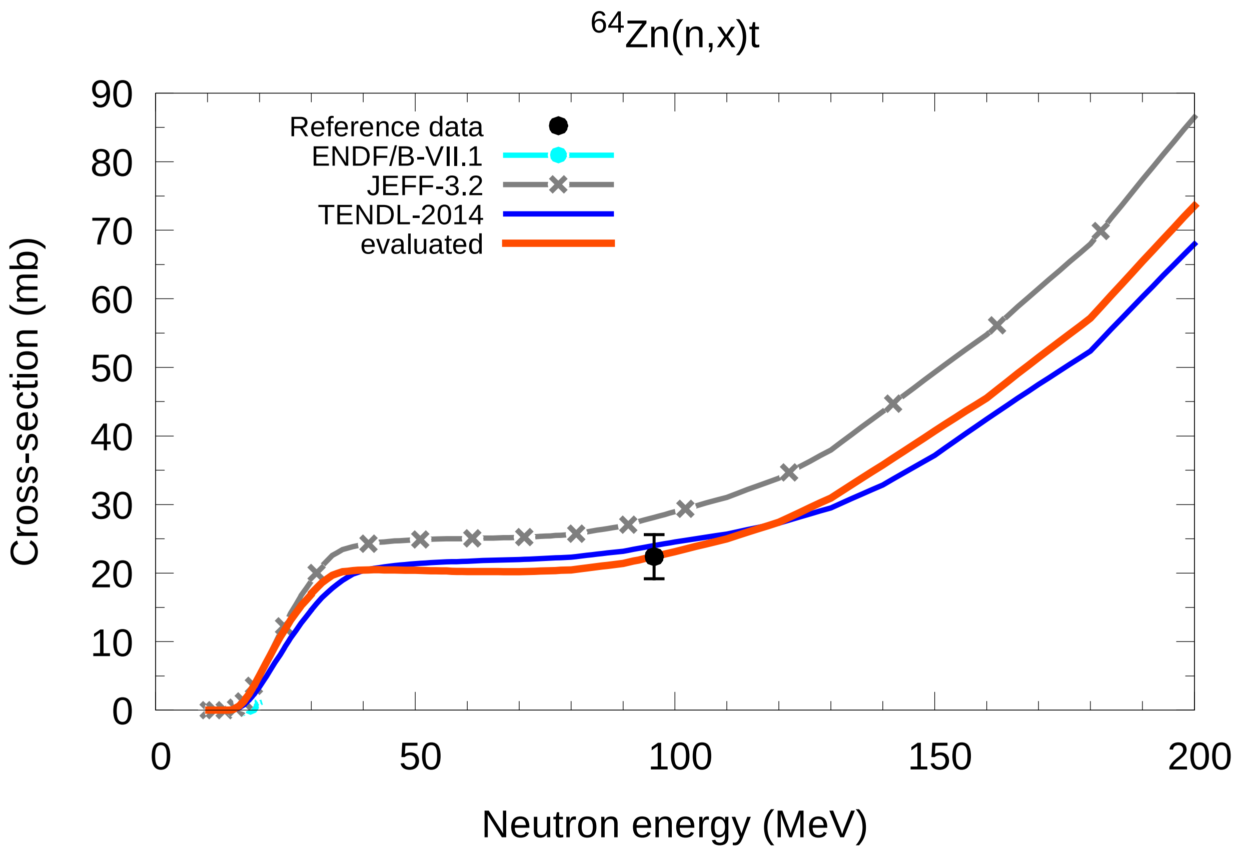

^{64}Zn(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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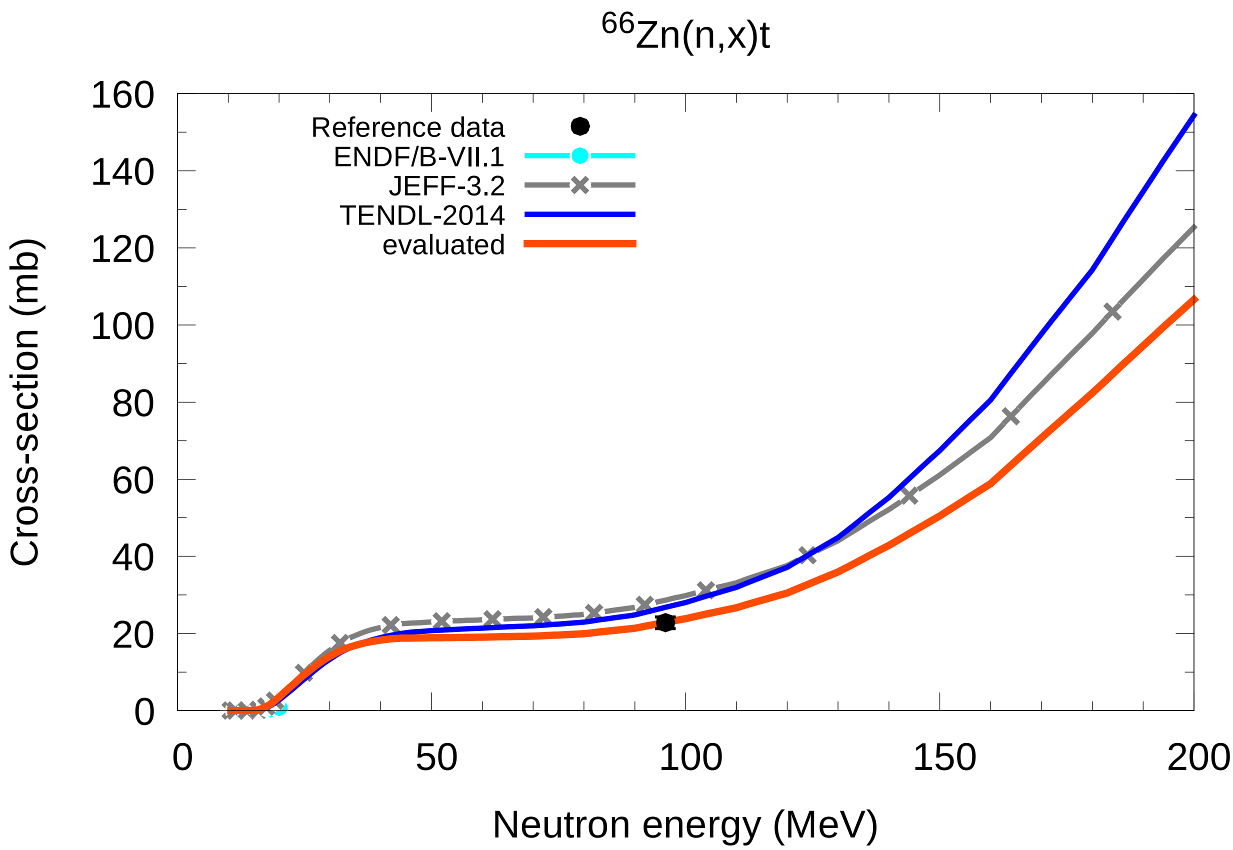

66Zn(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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60
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120
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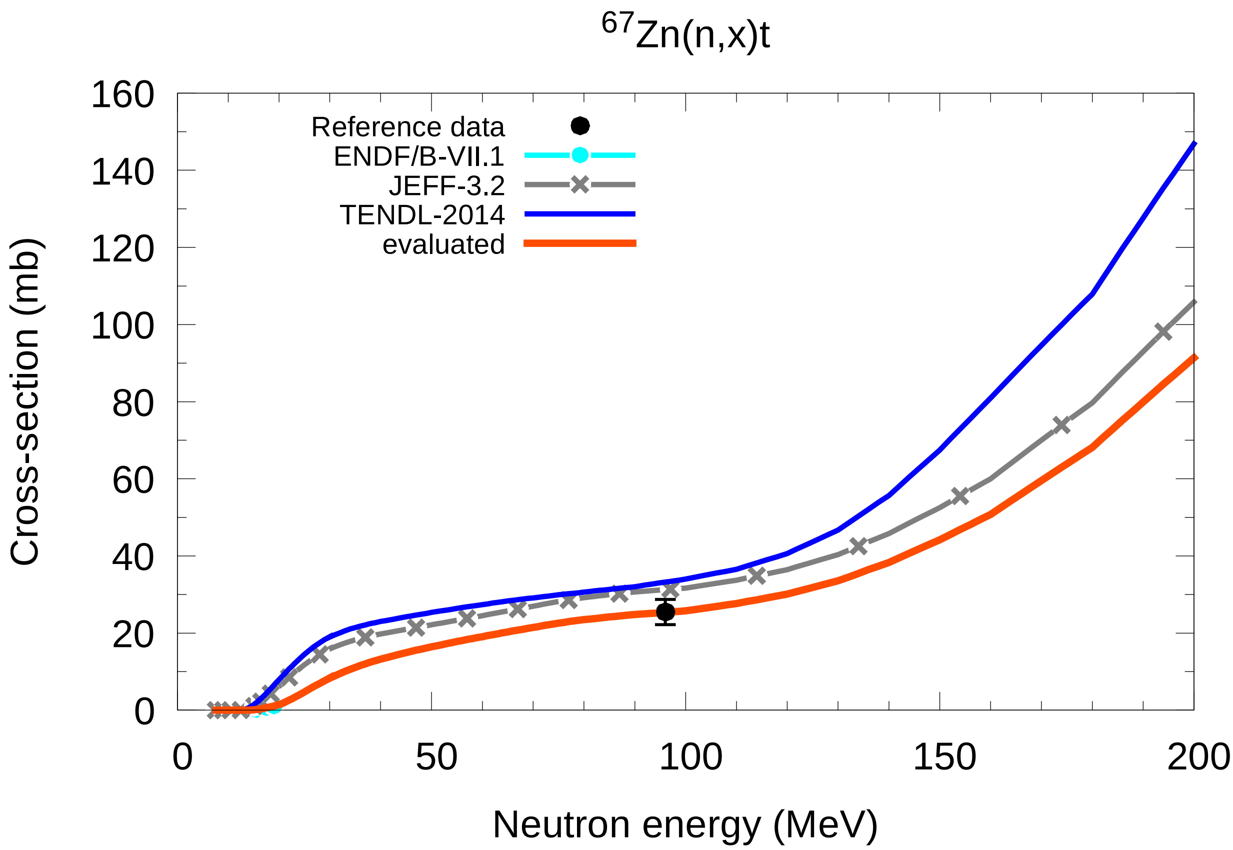

67Zn(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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60
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120
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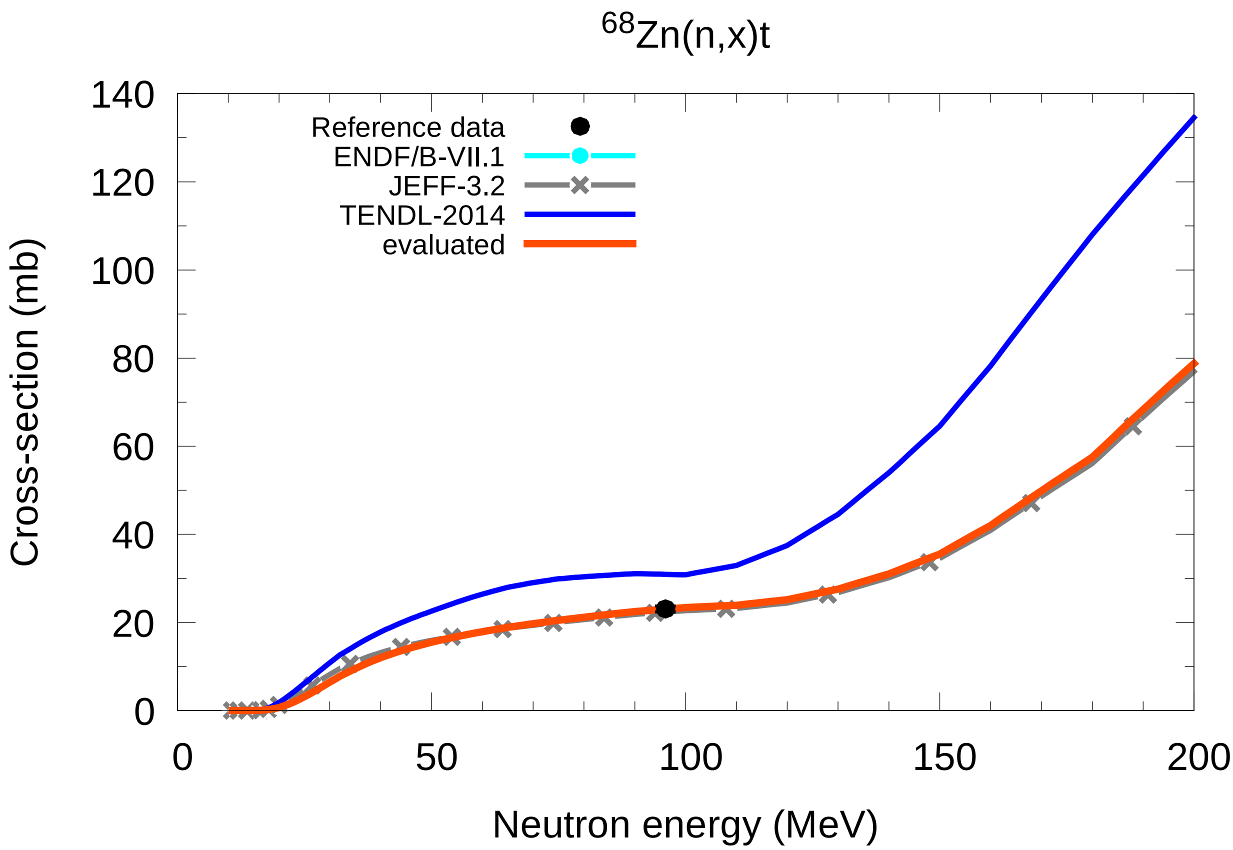

^{68}Zn(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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60
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100
120
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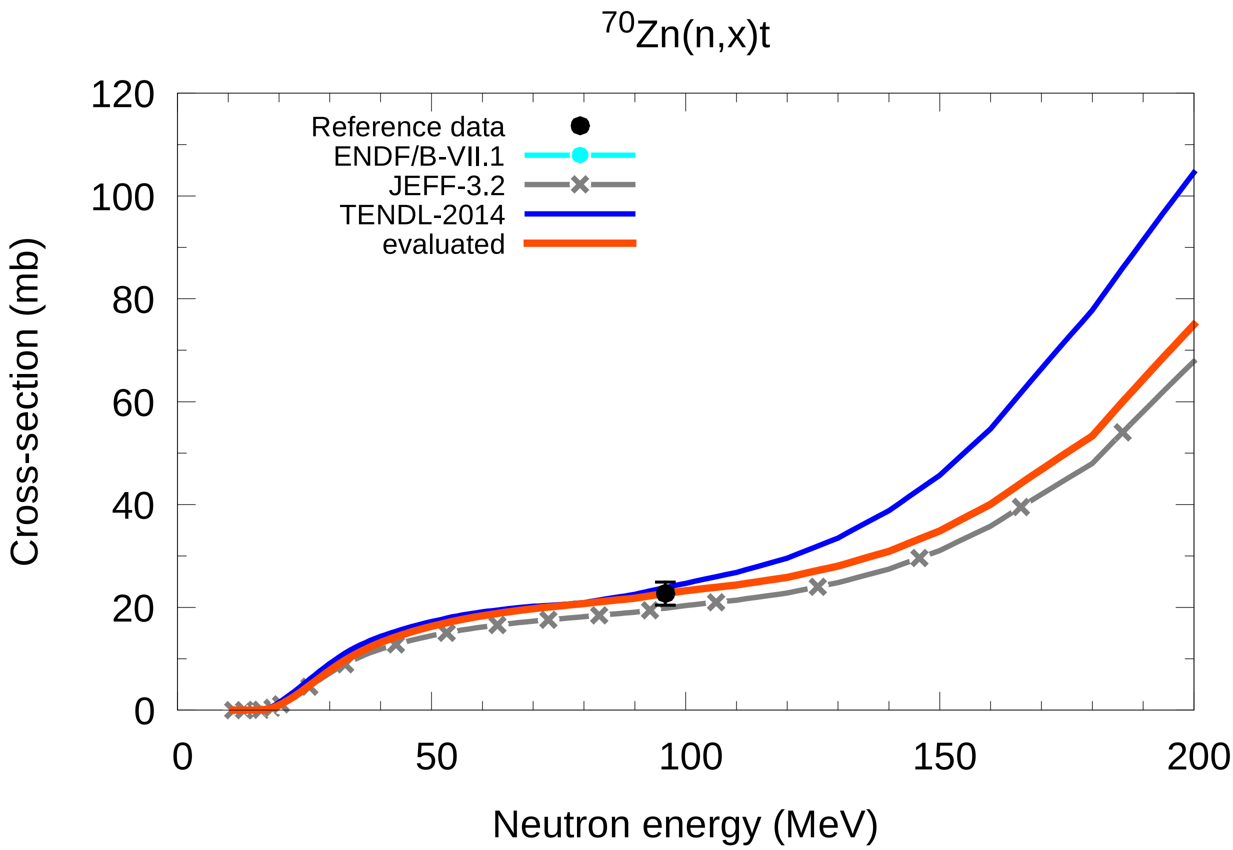
150
200



^{70}Zn(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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80
100
120
0
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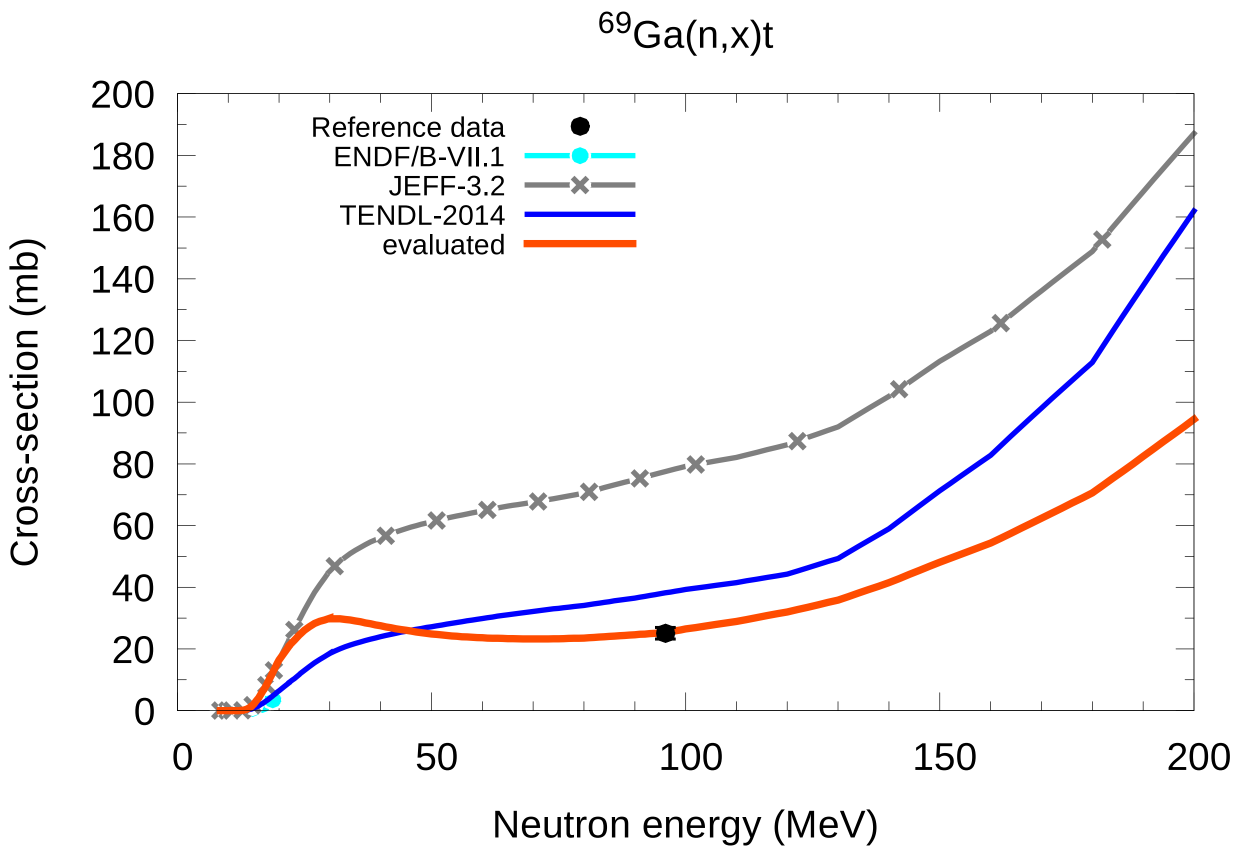
100
150
200



^{69}Ga(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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60
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160
180
200
0
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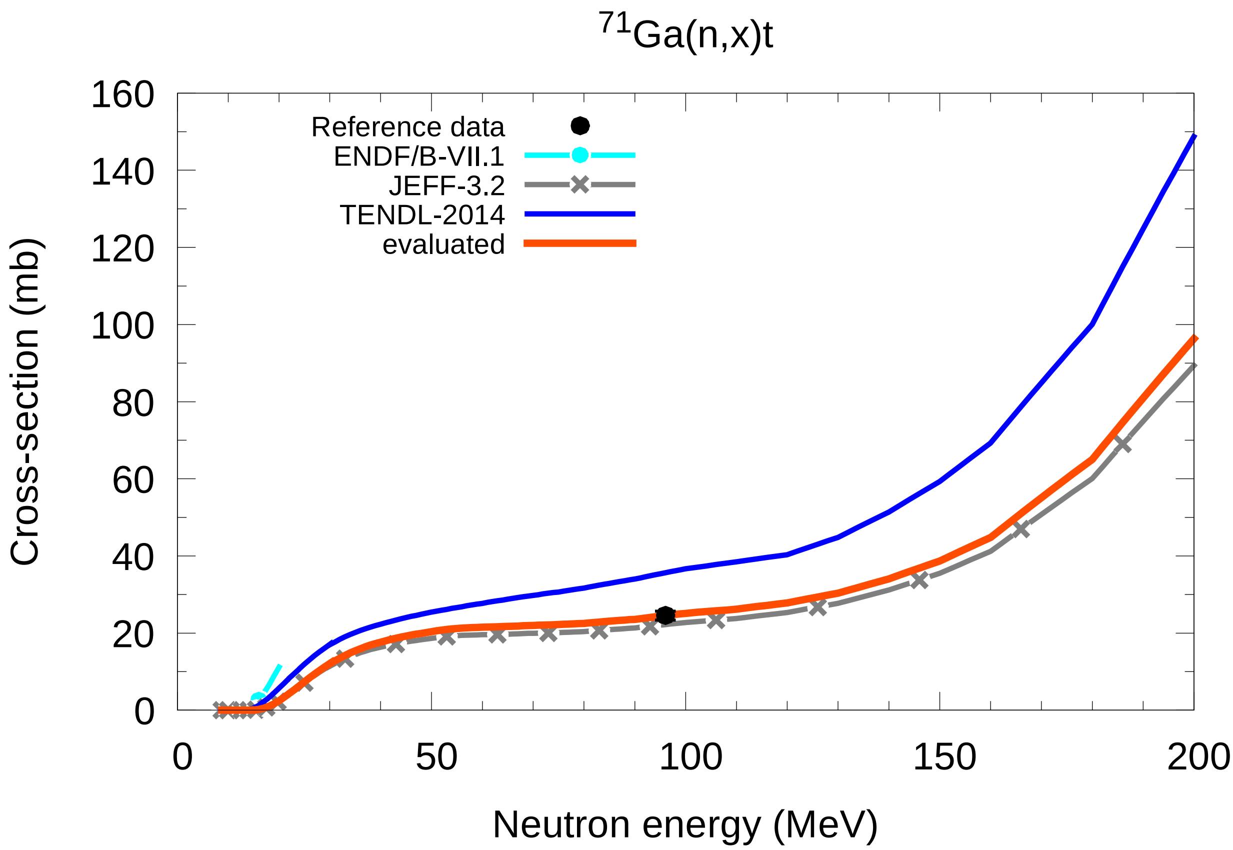
150
200



^{71}Ga(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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40
60
80
100
120
140
160
0
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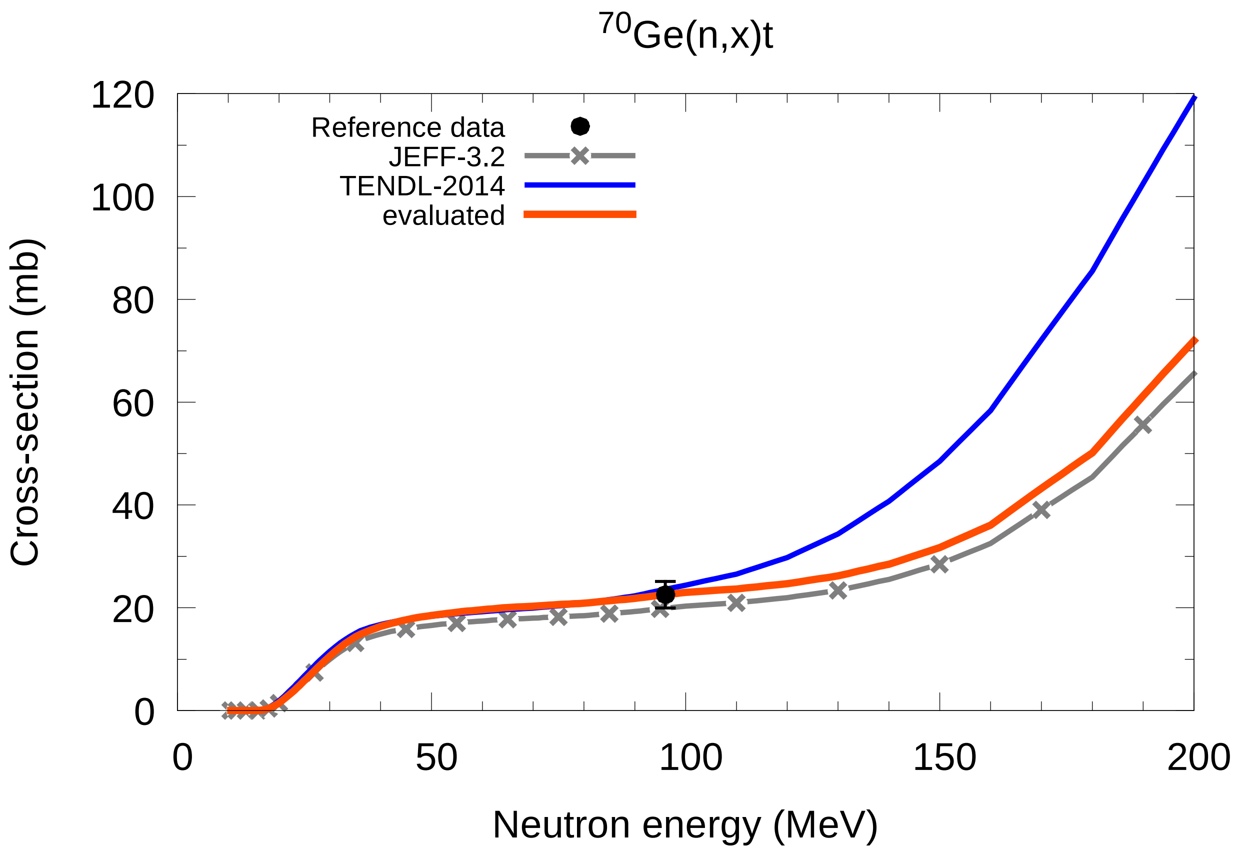
100
150
200



^{70}Ge(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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80
100
120
0
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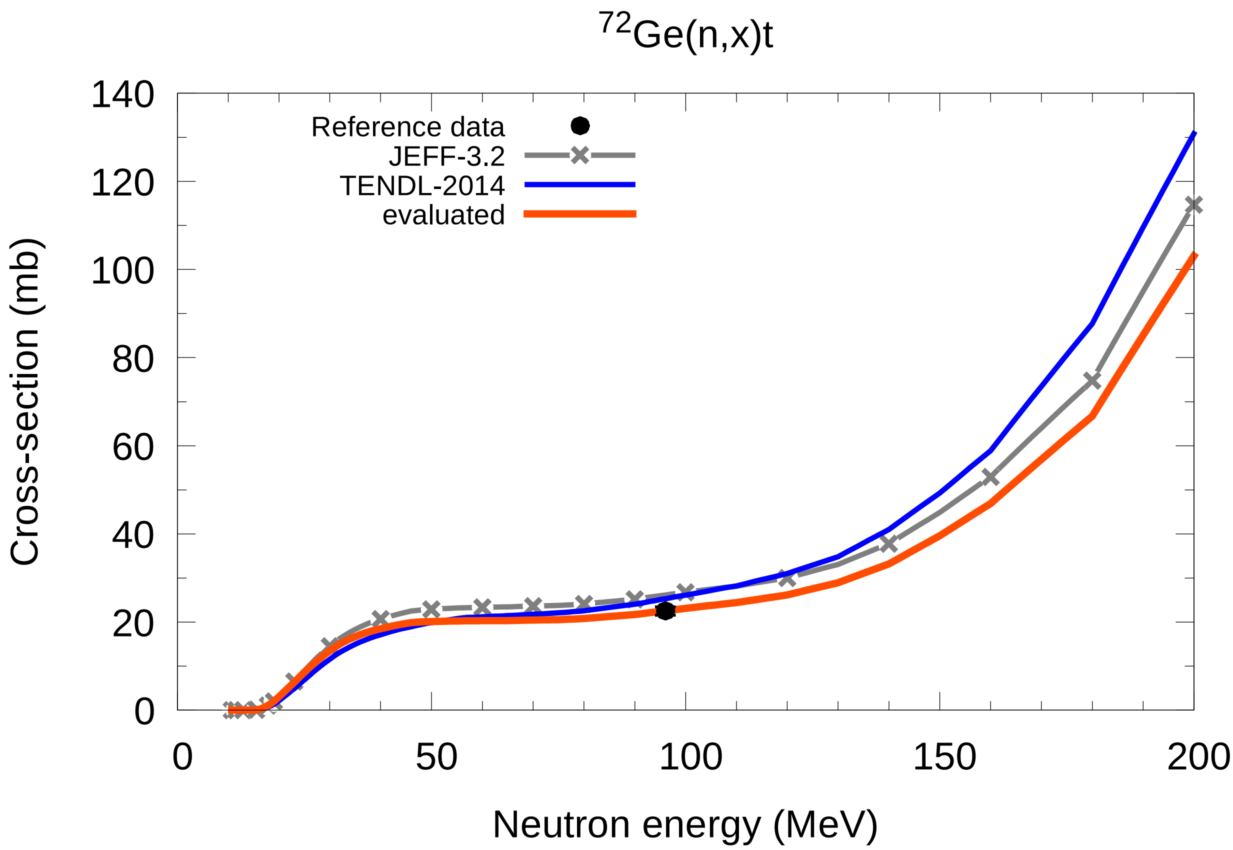
100
150
200



^{72}Ge(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
0
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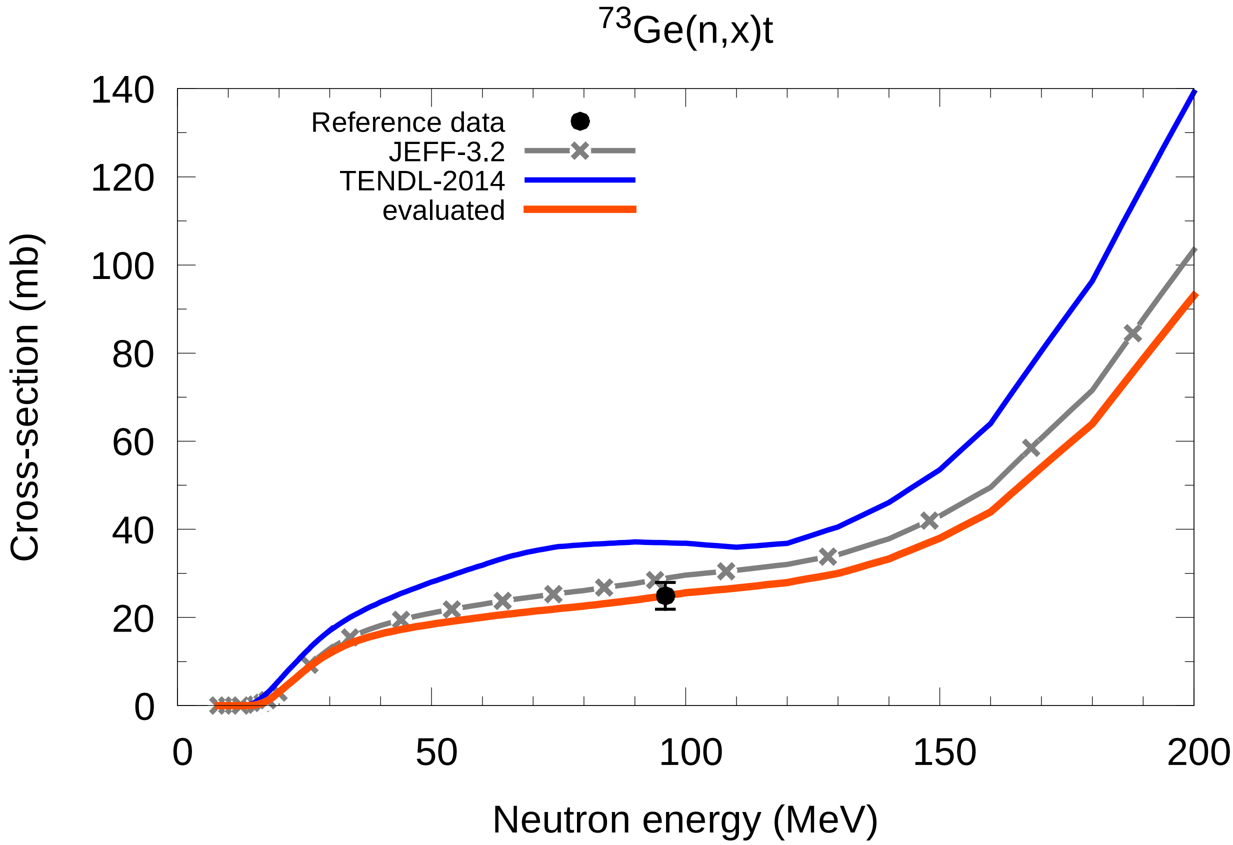
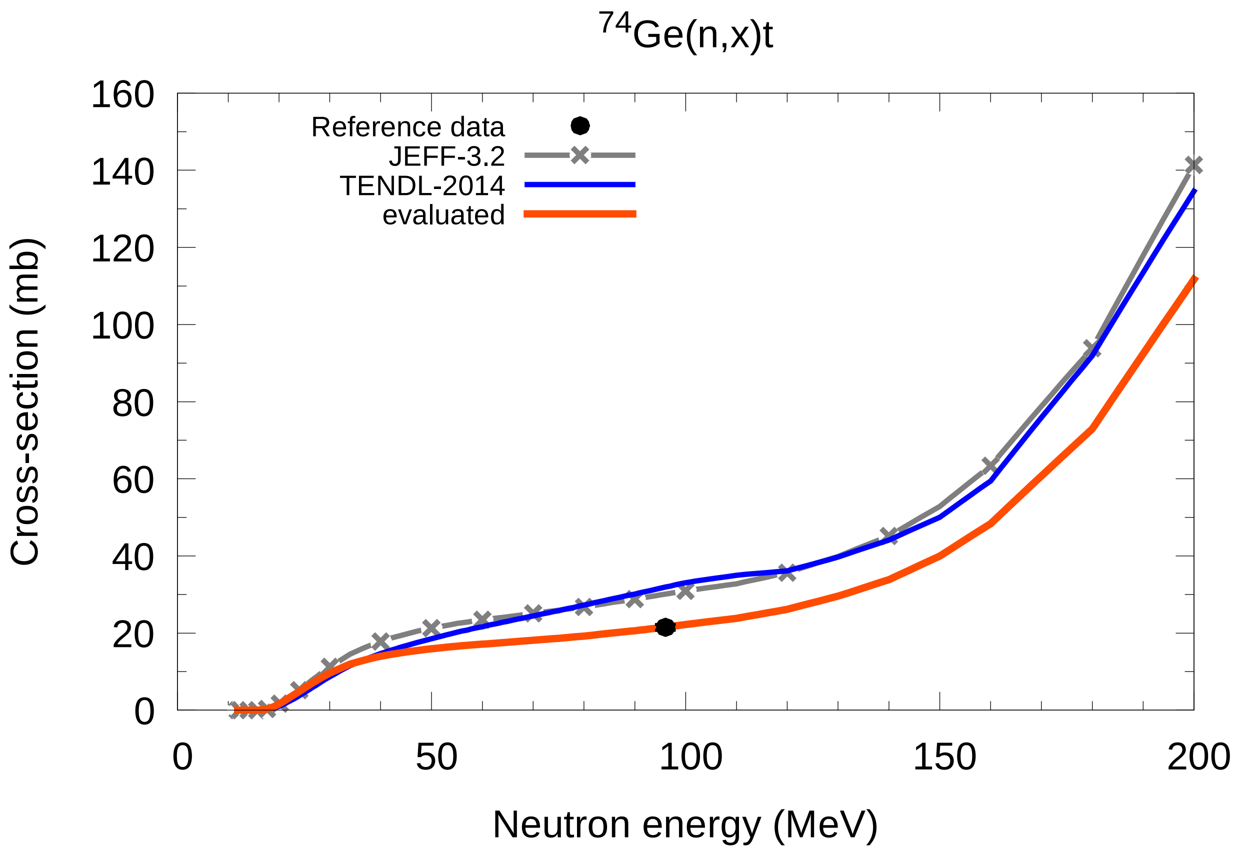
150
200



^{73}Ge(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
0
50
100
150
200



^{74}Ge(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
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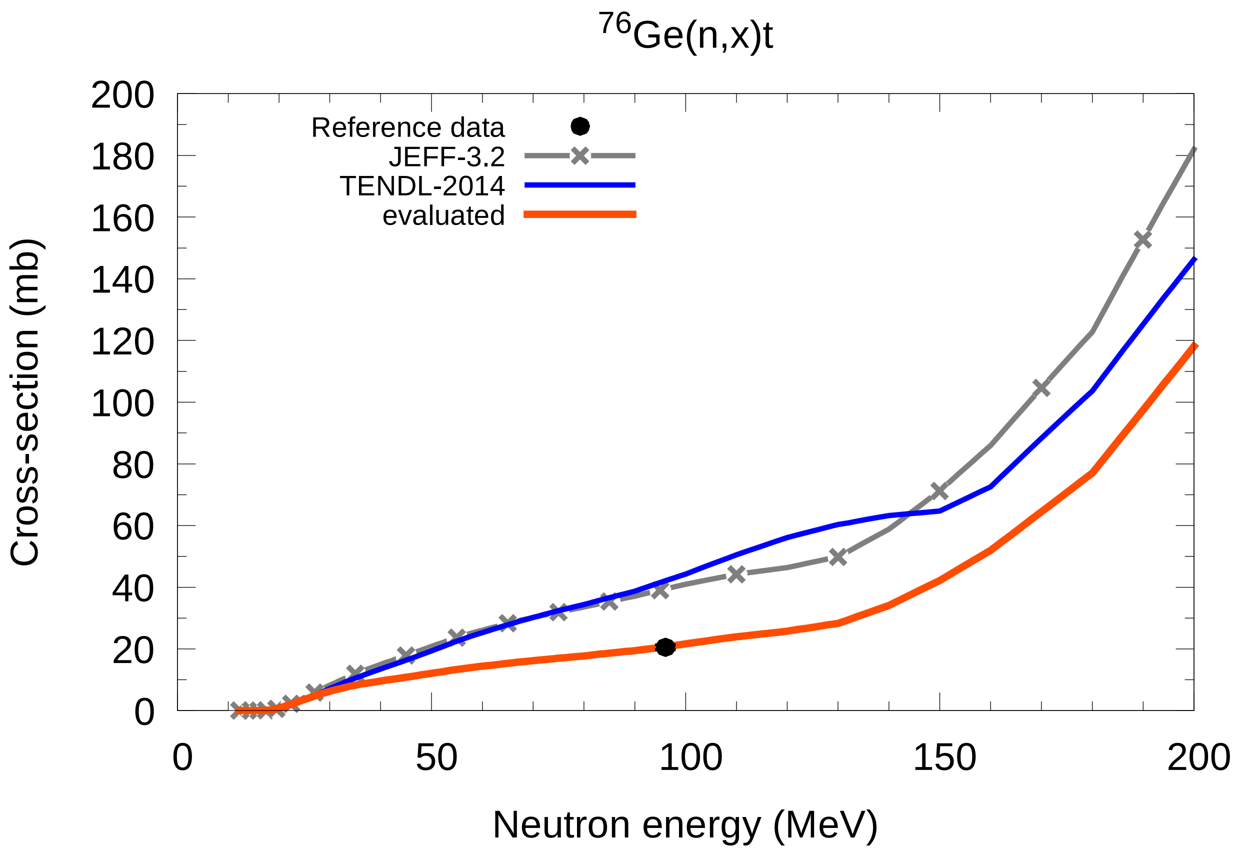
150
200


^{76}Ge(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
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120
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160
180
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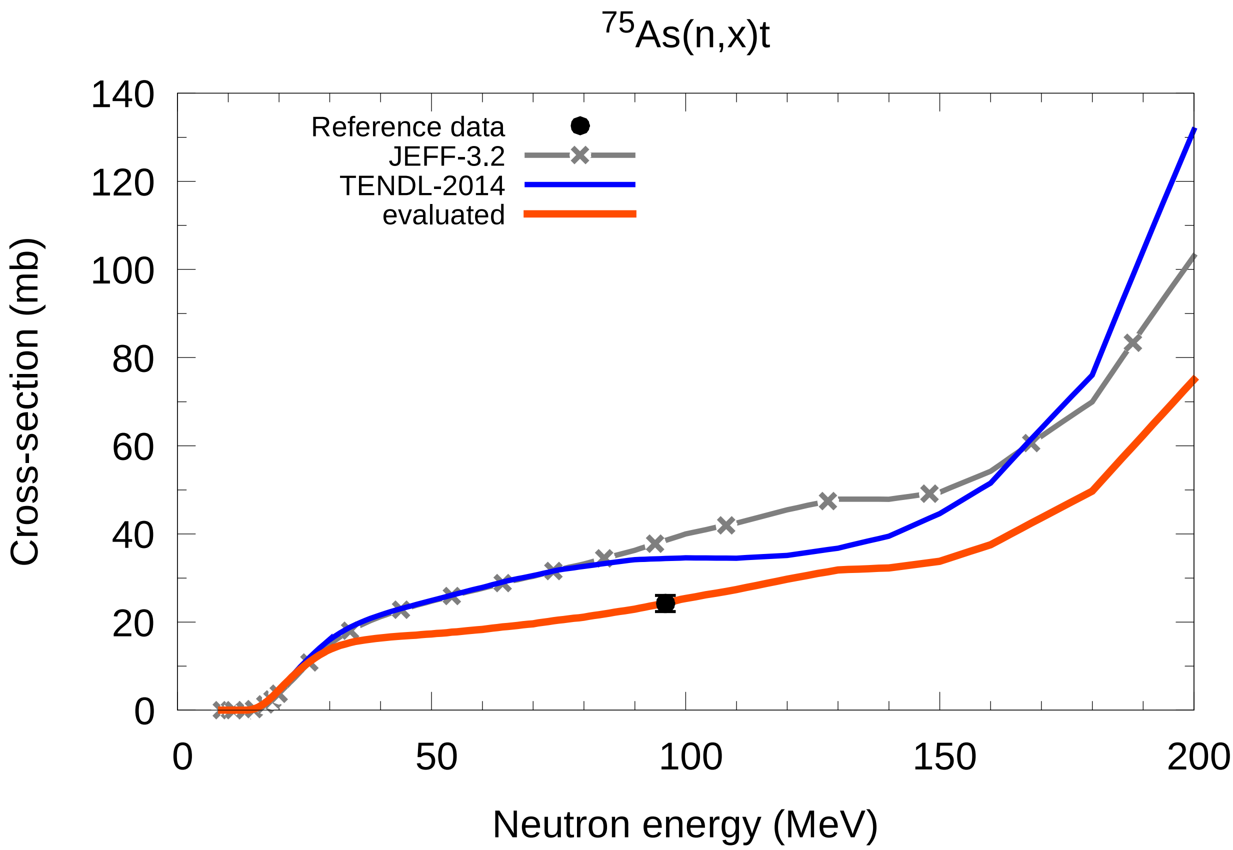
200


^{75}As(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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20
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120
140
0
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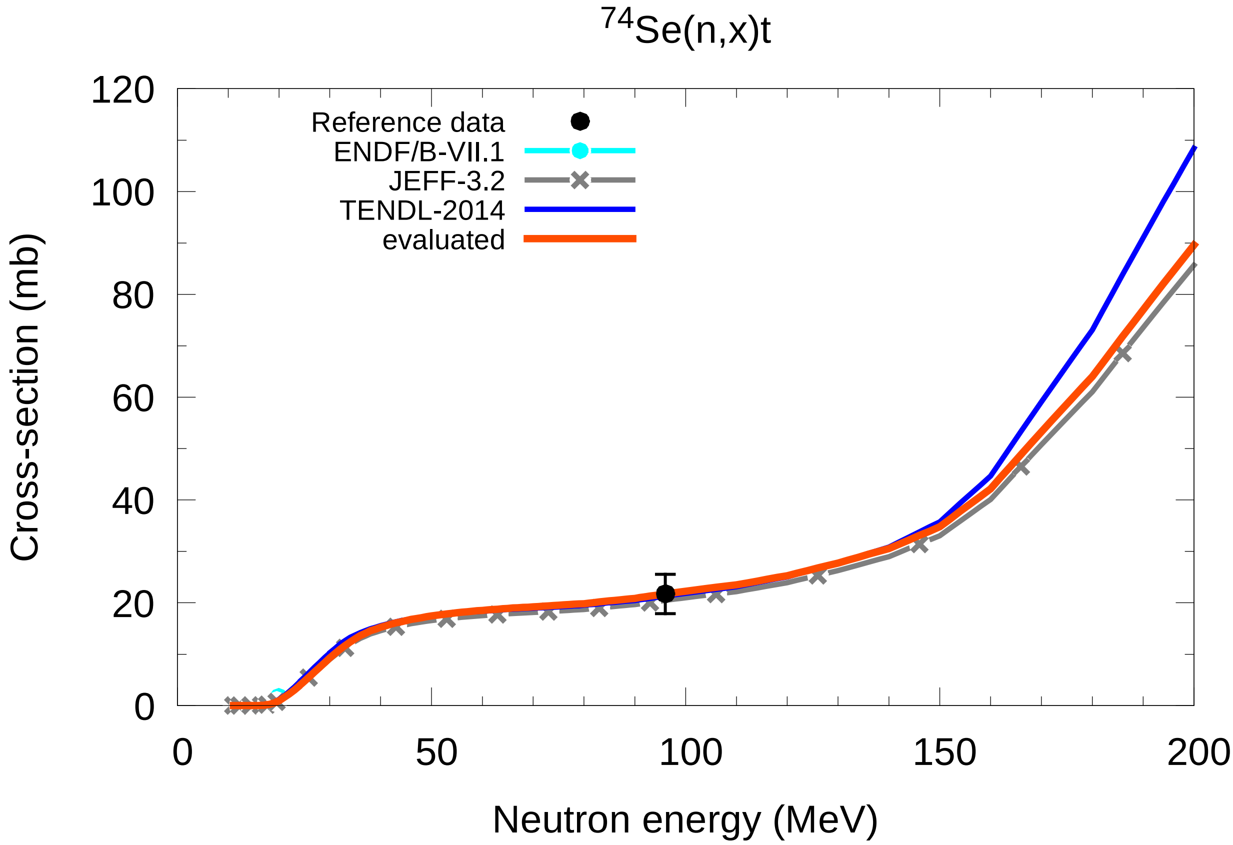
150
200



^{74}Se(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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60
80
100
120
0
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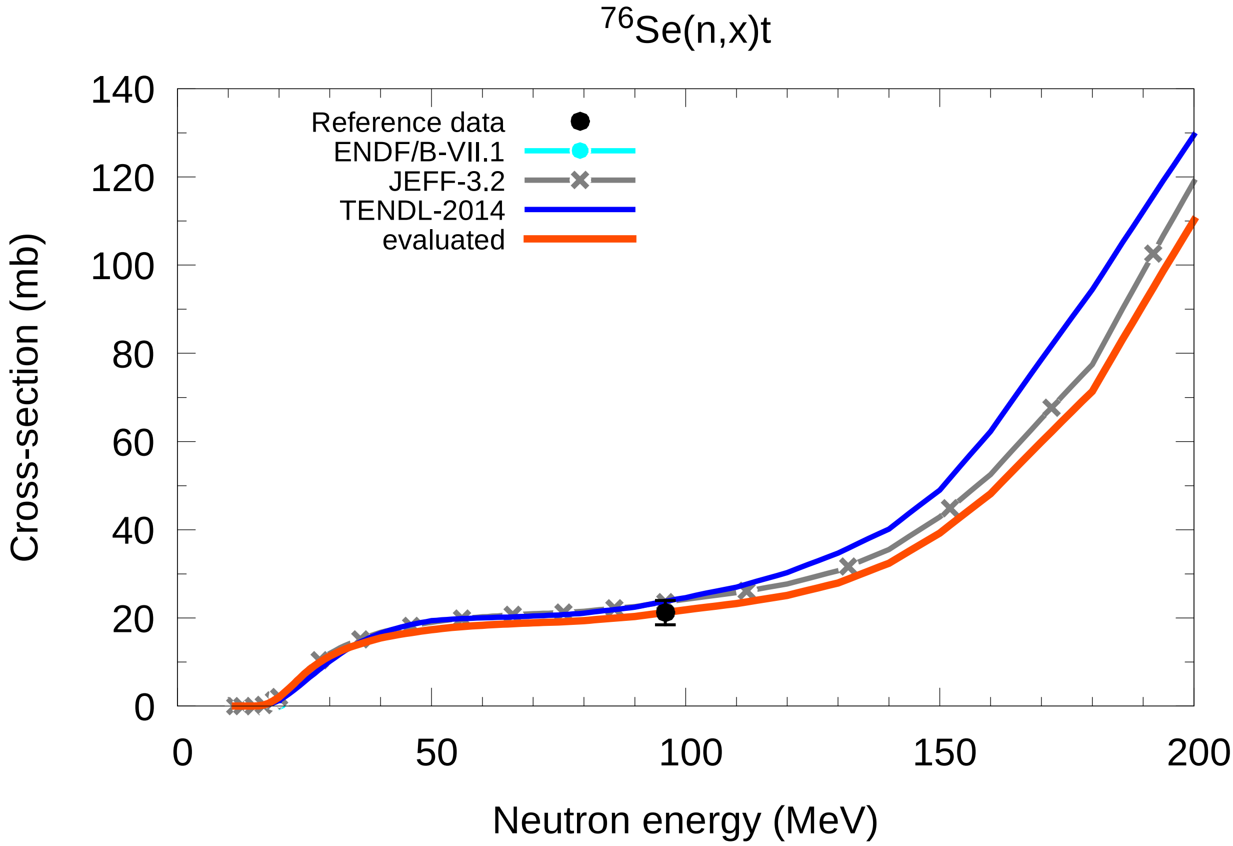
100
150
200



^{76}Se(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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40
60
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120
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150
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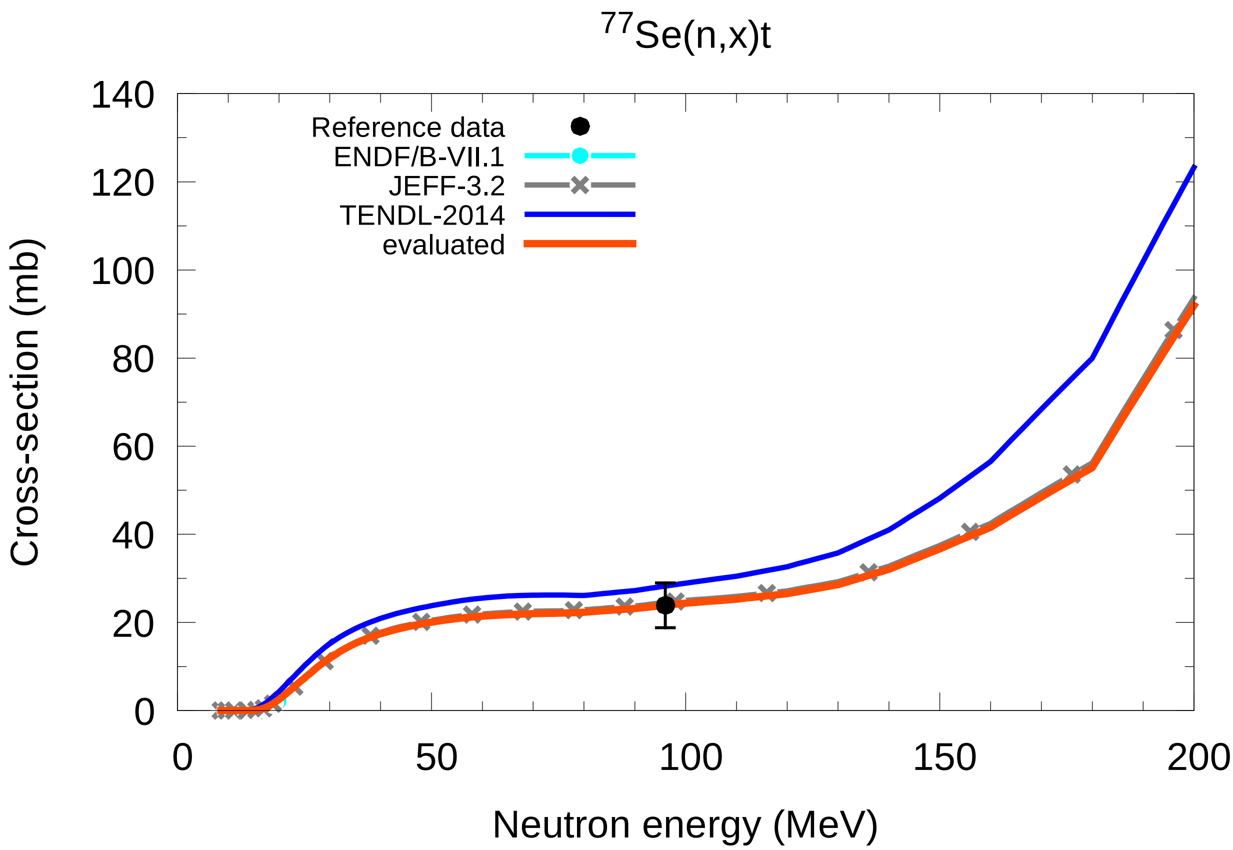

^{77}Se(n,x)t
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
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40
60
80
100
120
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0
50
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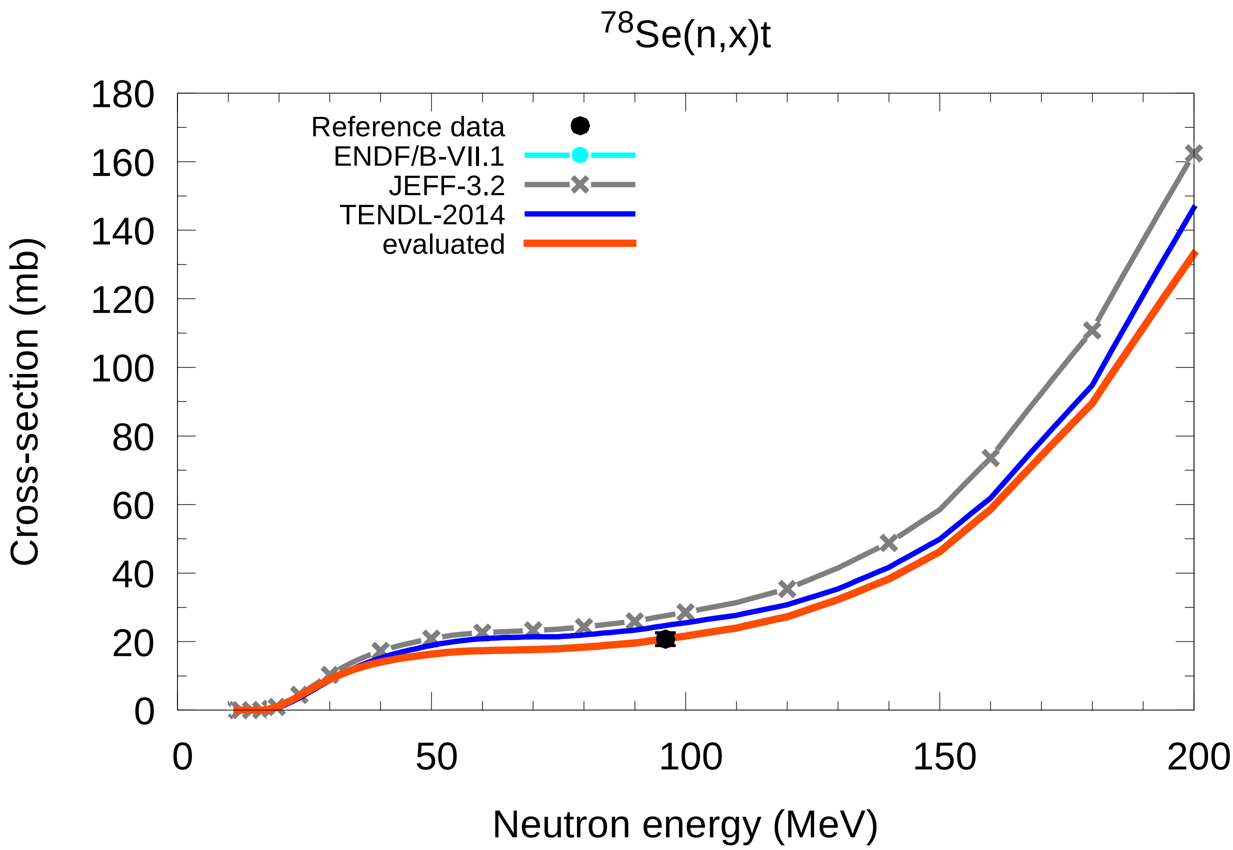
150
200



^{78}Se(n,x)t
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
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40
60
80
100
120
140
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150
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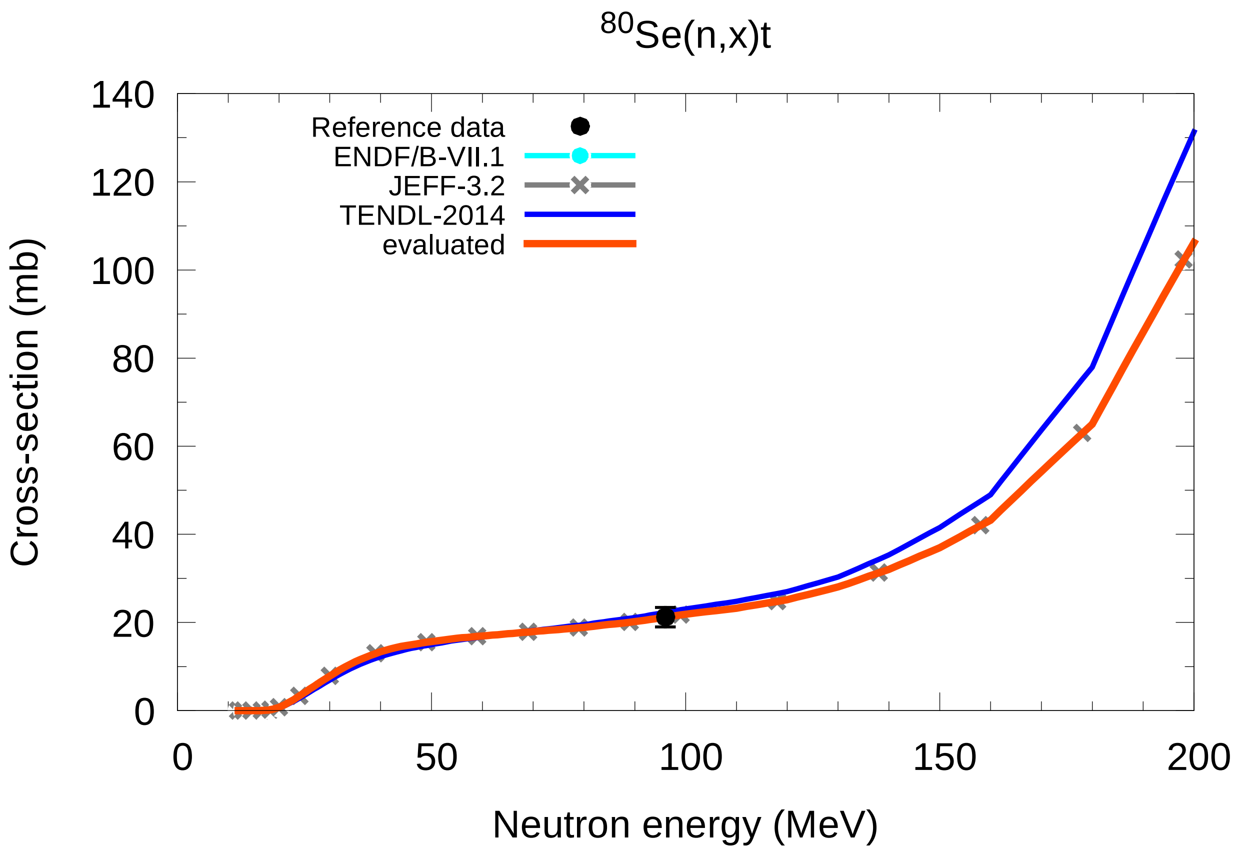

^{80}Se(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
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120
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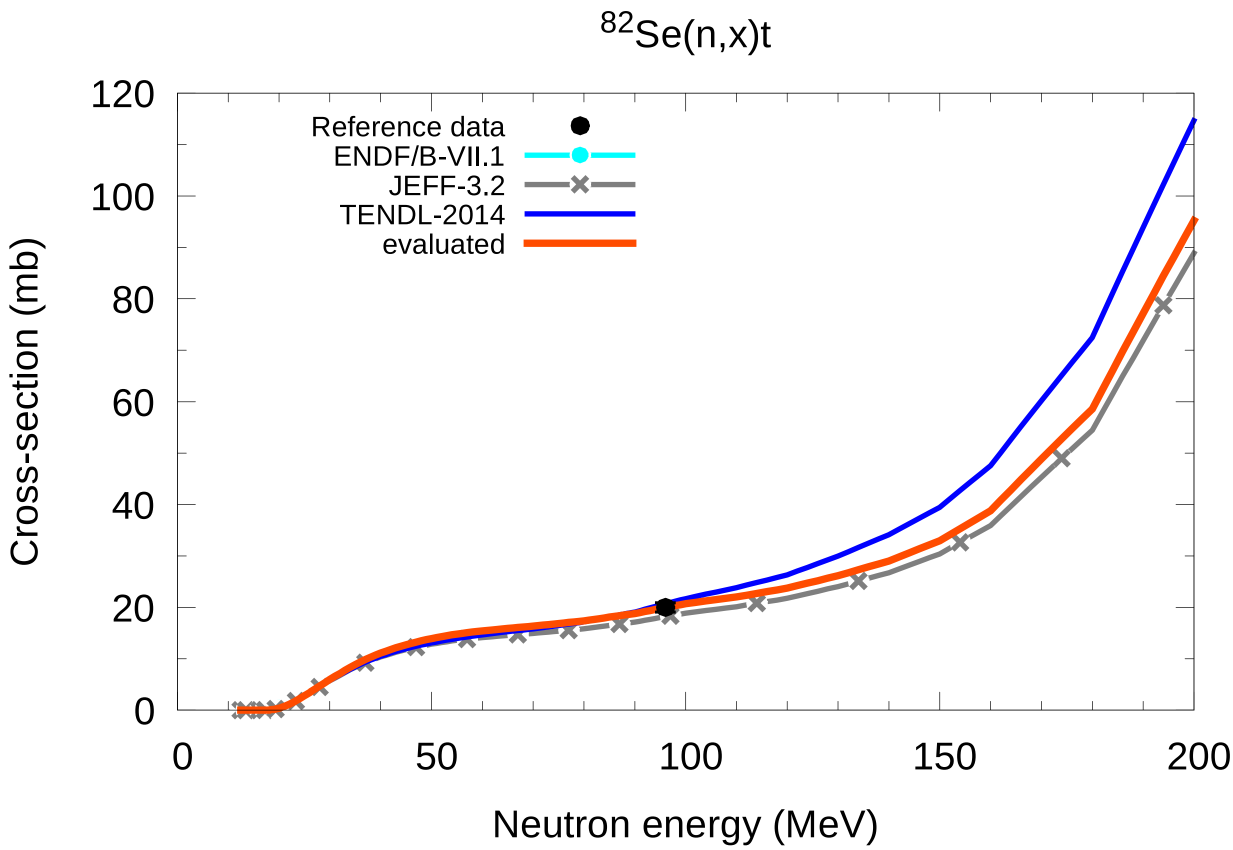

^{82}Se(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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40
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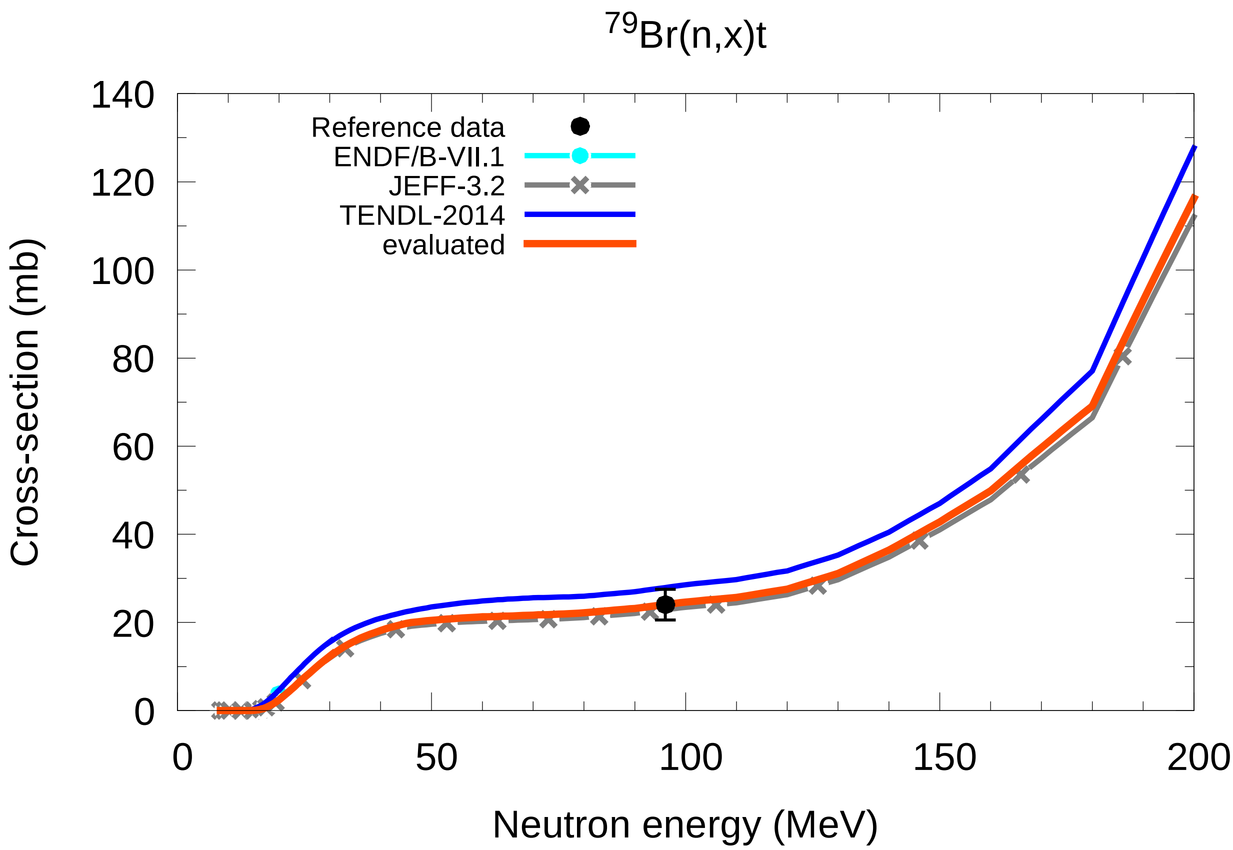
80
100
120
0
50
100
150
200



^{79}Br(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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60
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100
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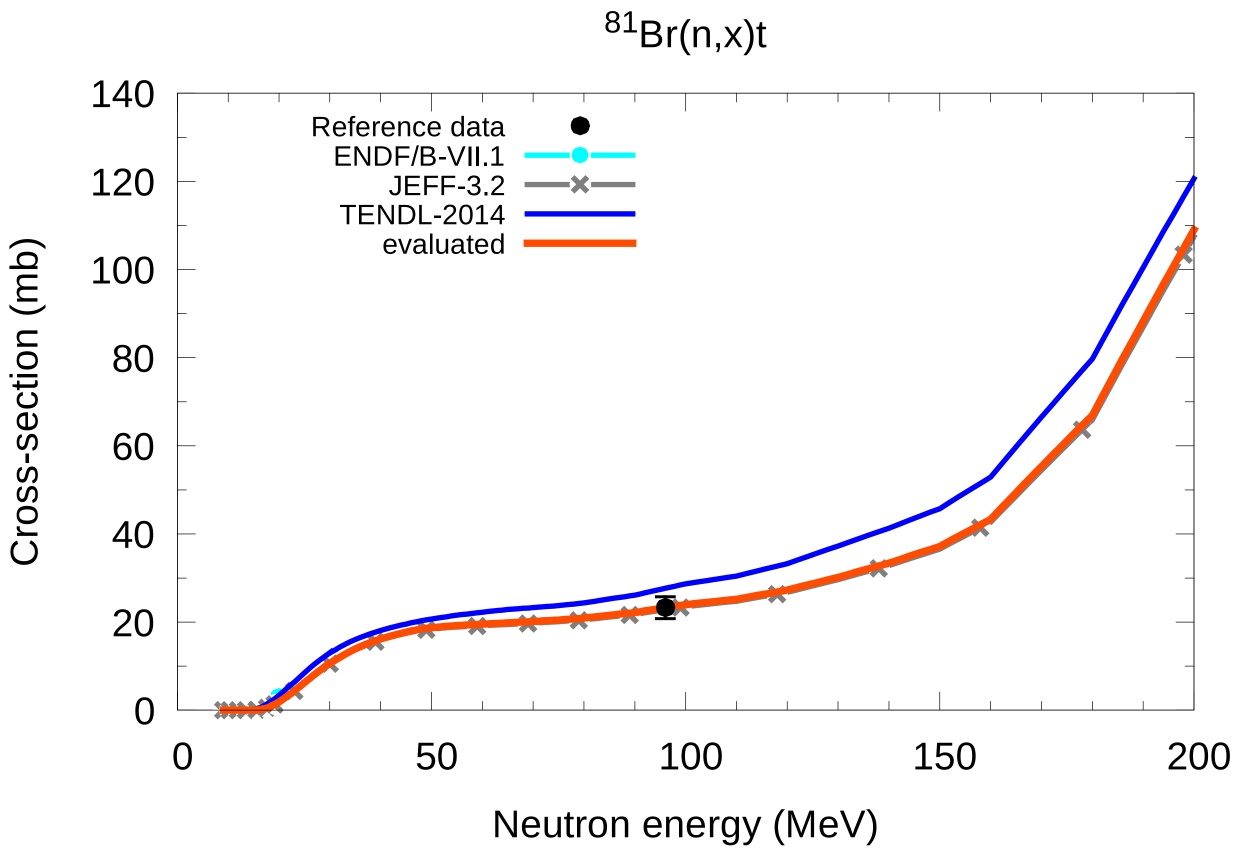
150
200



^{81}Br(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
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0
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100
150
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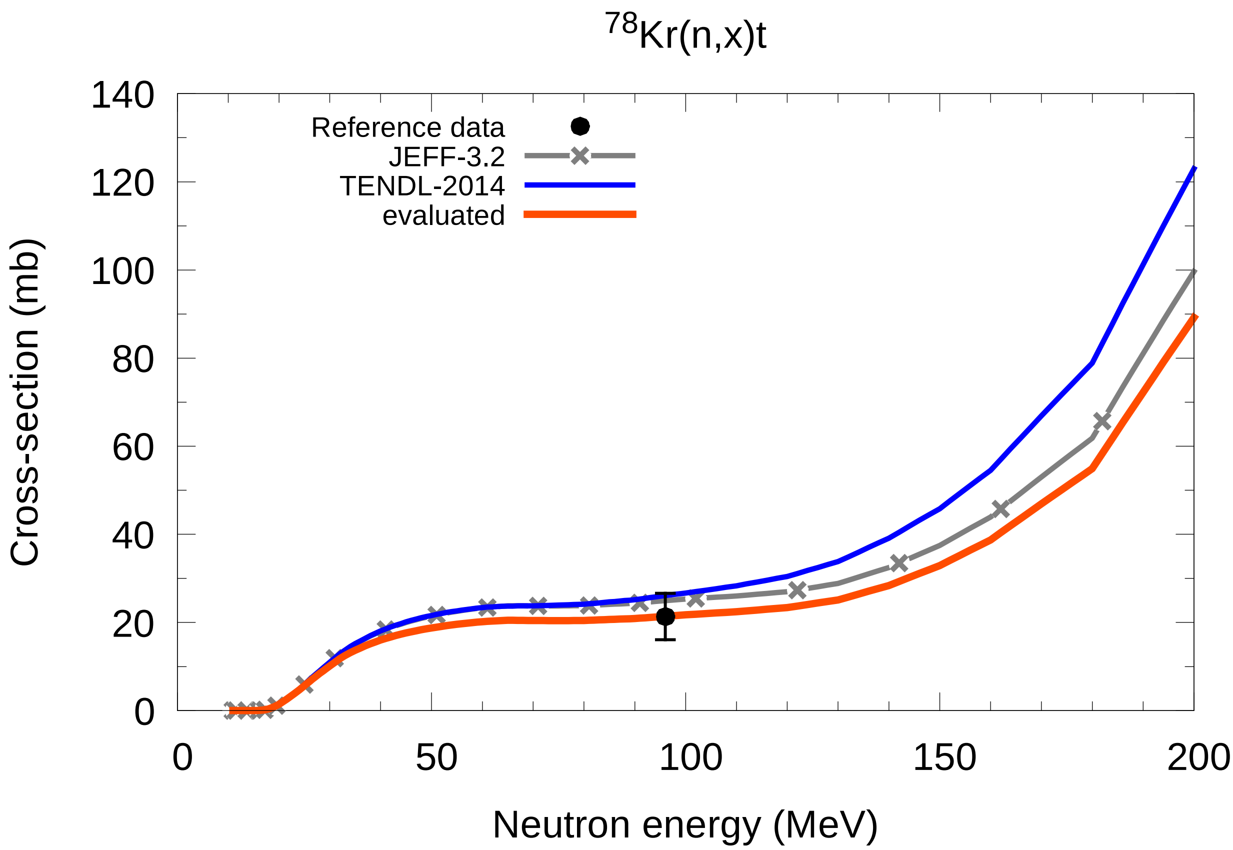
^{78}Kr(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
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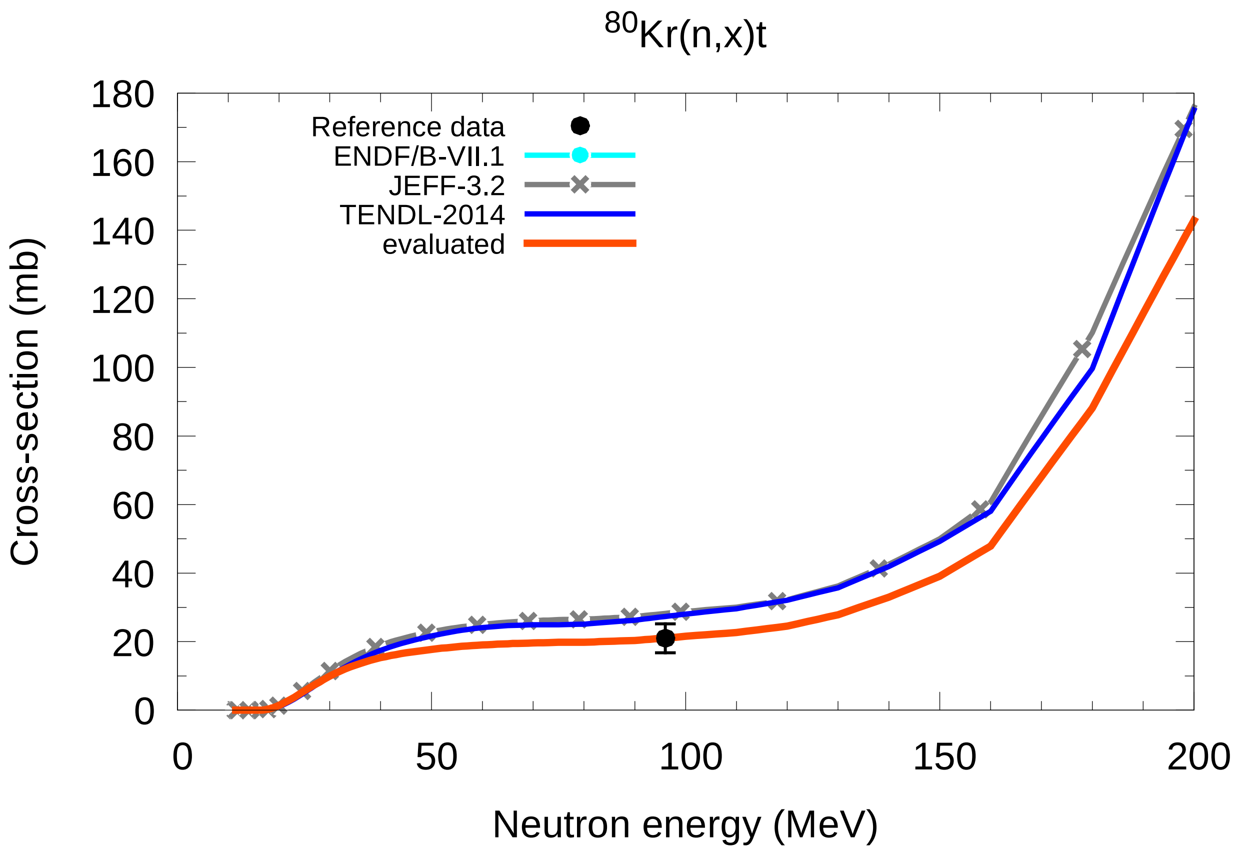
^{80}Kr(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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40
60
80
100
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140
160
180
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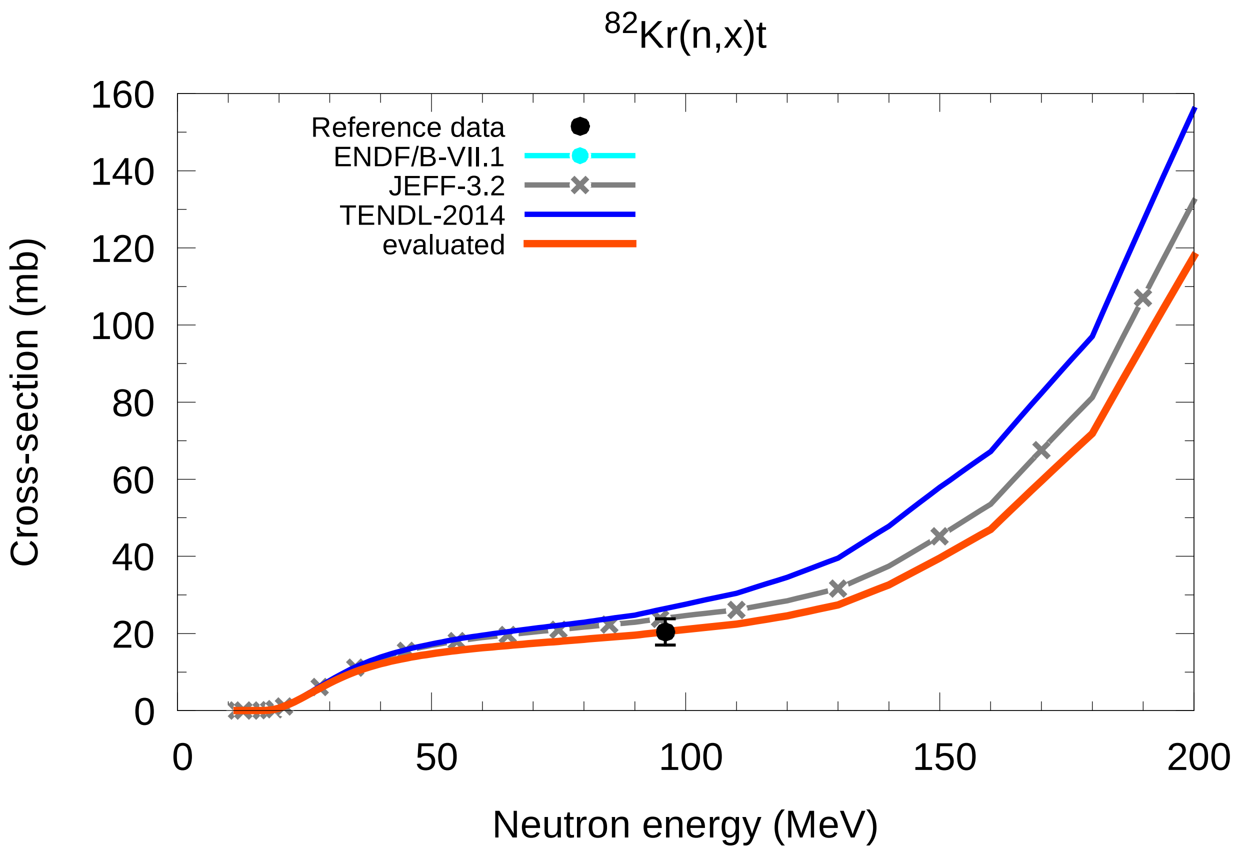
150
200



^{82}Kr(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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40
60
80
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120
140
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150
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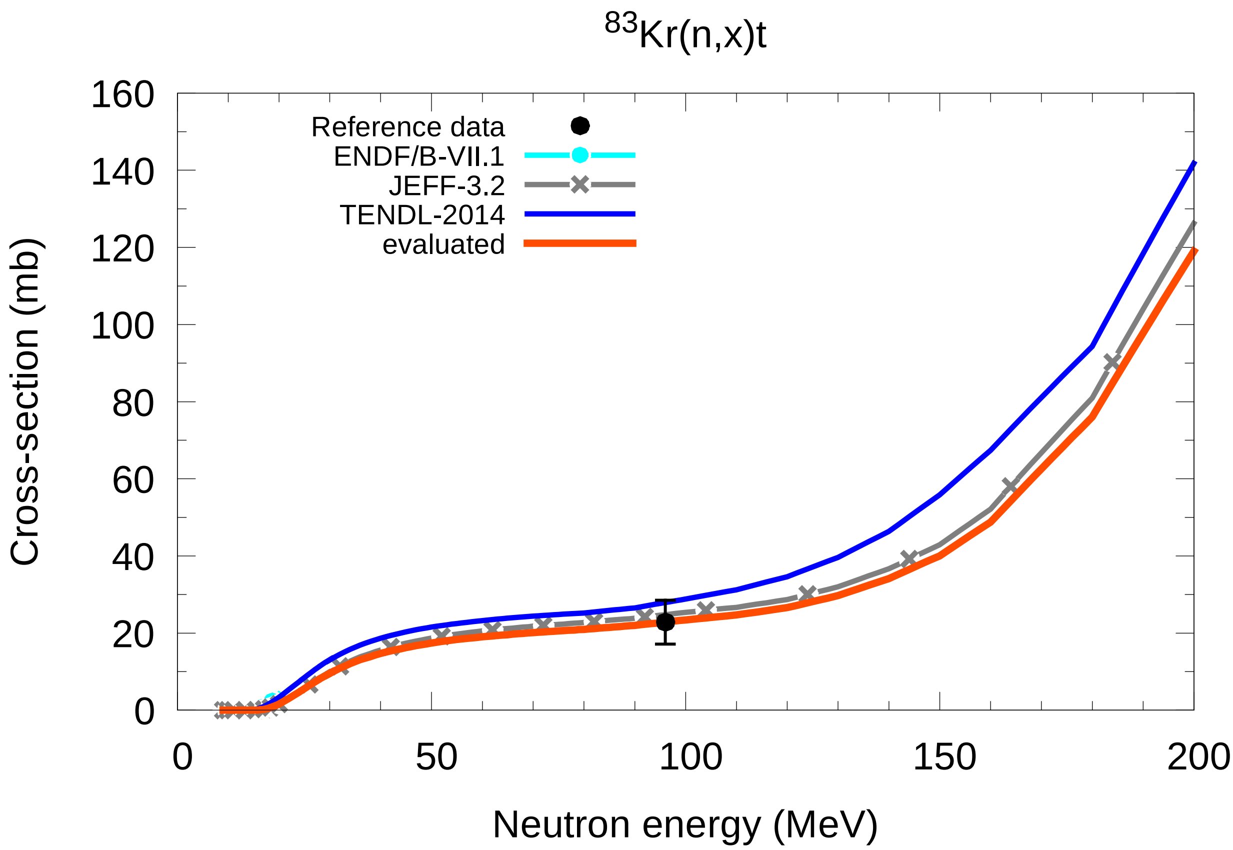

^{83}Kr(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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40
60
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0
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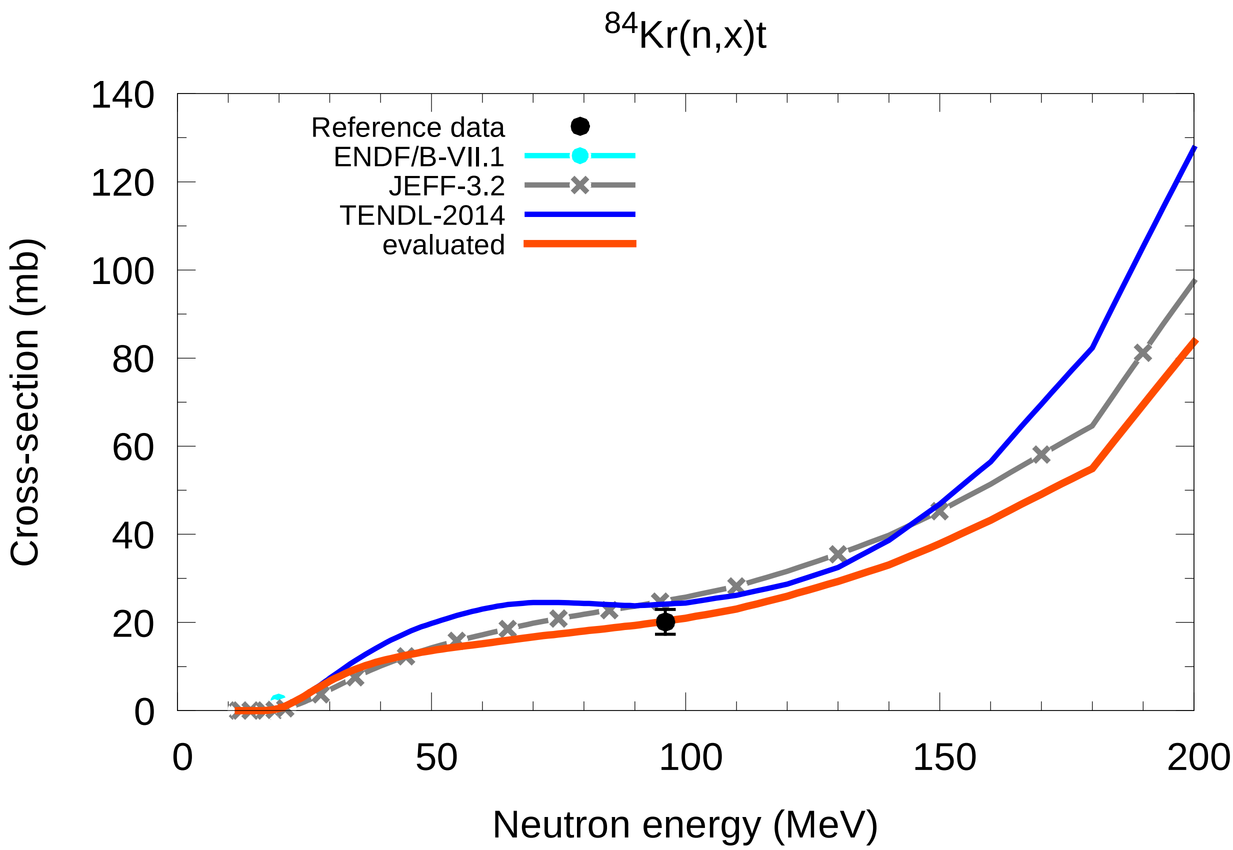

^{84}Kr(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
0
50
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150
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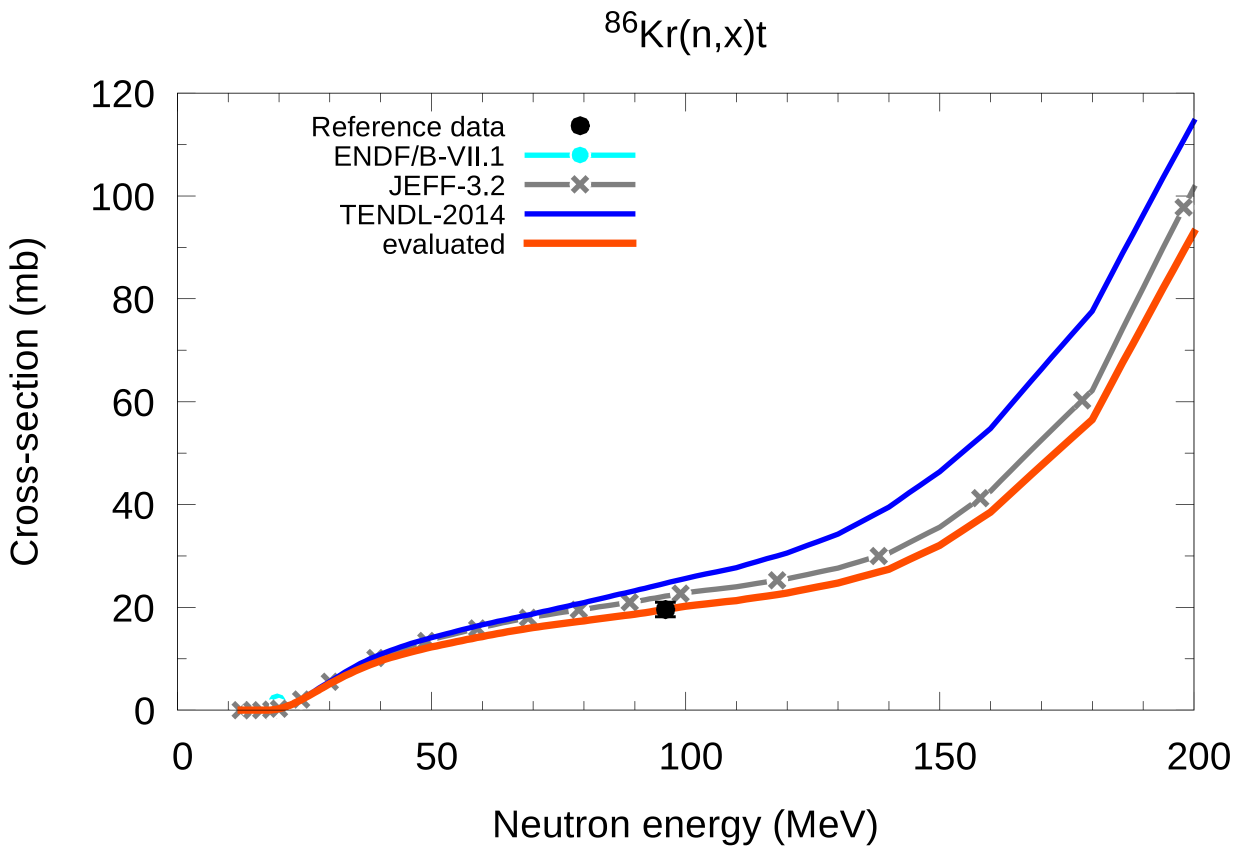

^{86}Kr(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
0
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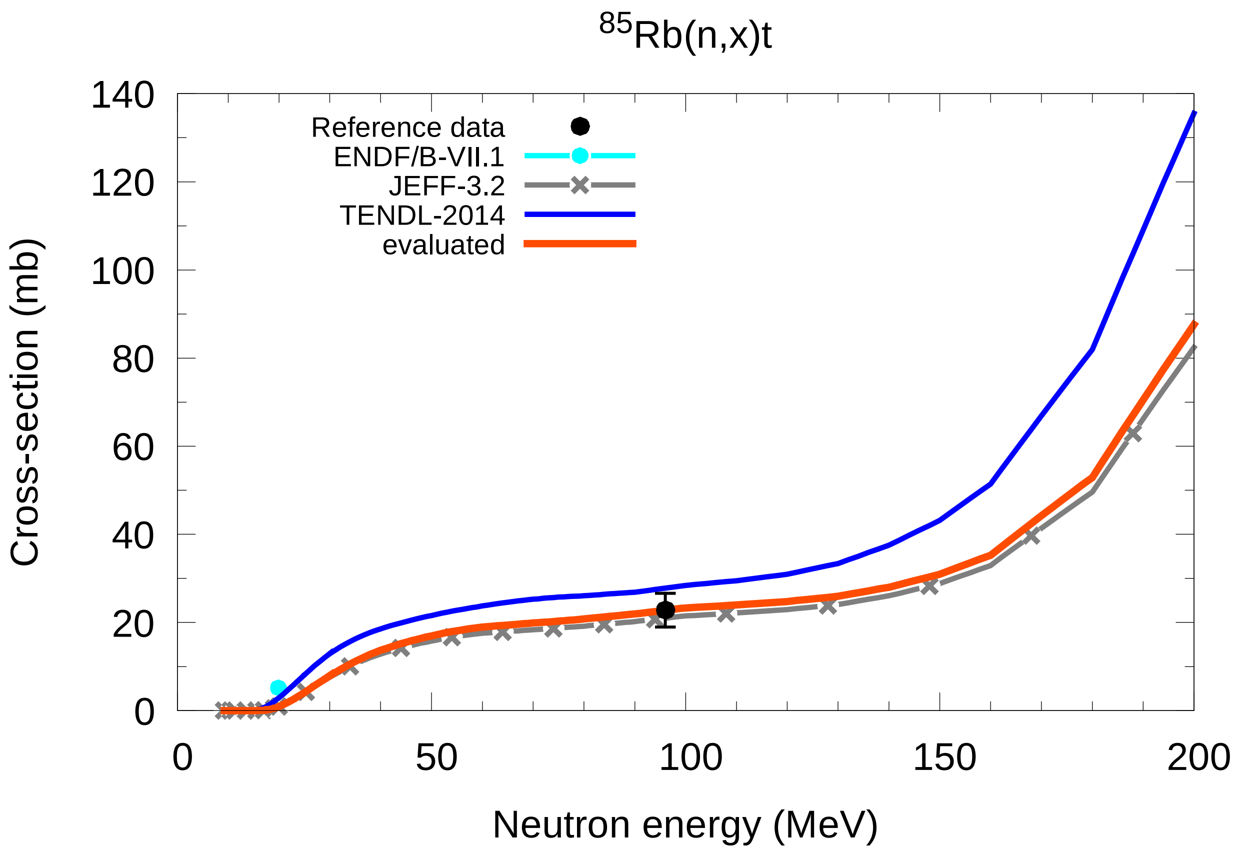
100
150
200



^{85}Rb(n,x)t
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
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100
120
140
0
50
100
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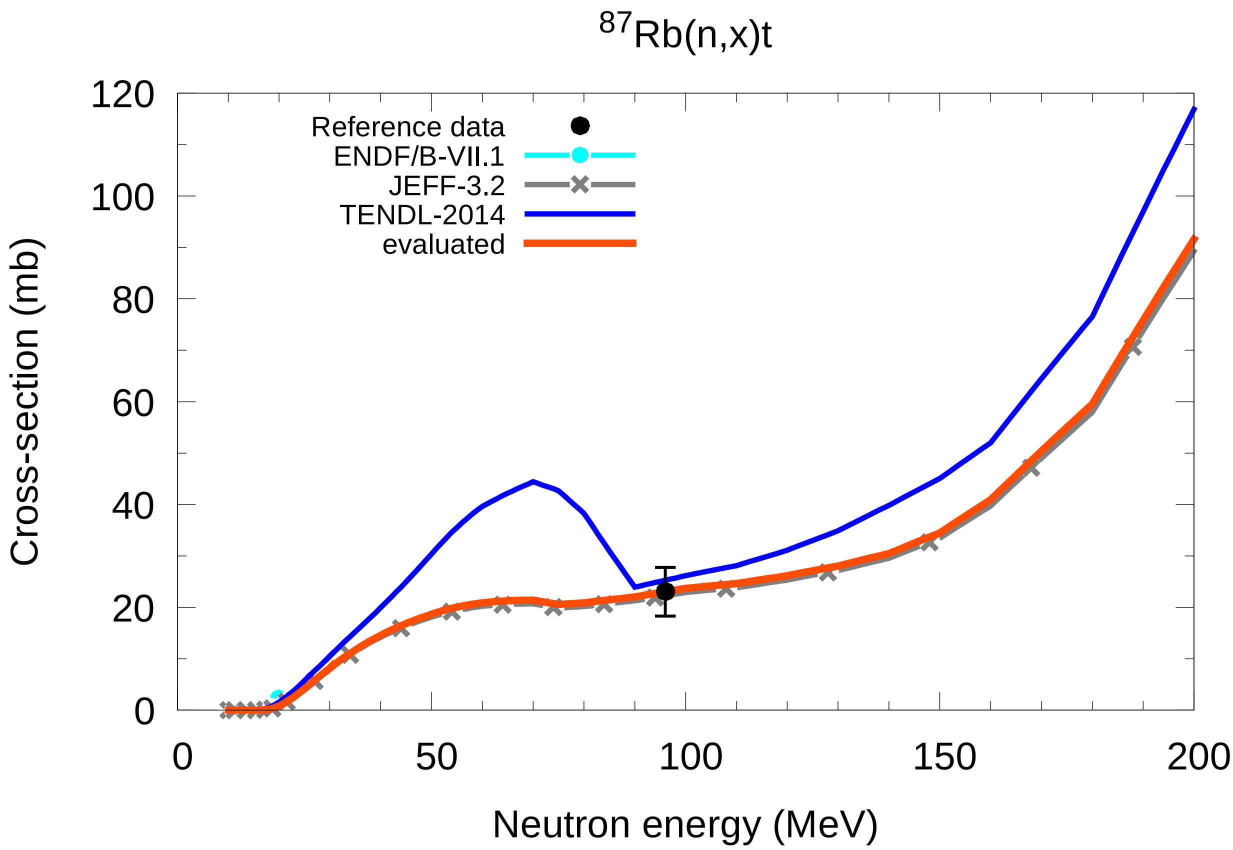

^{87}Rb(n,x)t
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
20
40
60
80
100
120
0
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100
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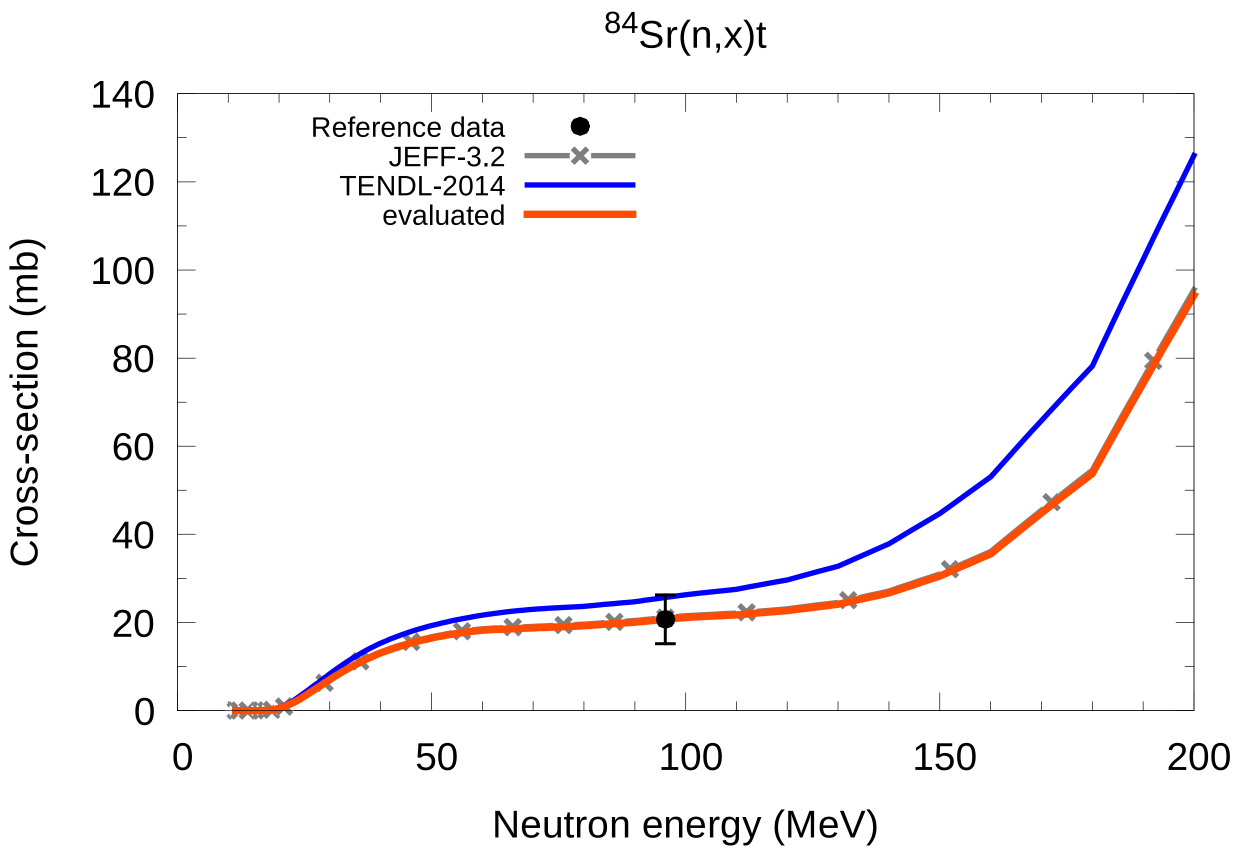

84Sr(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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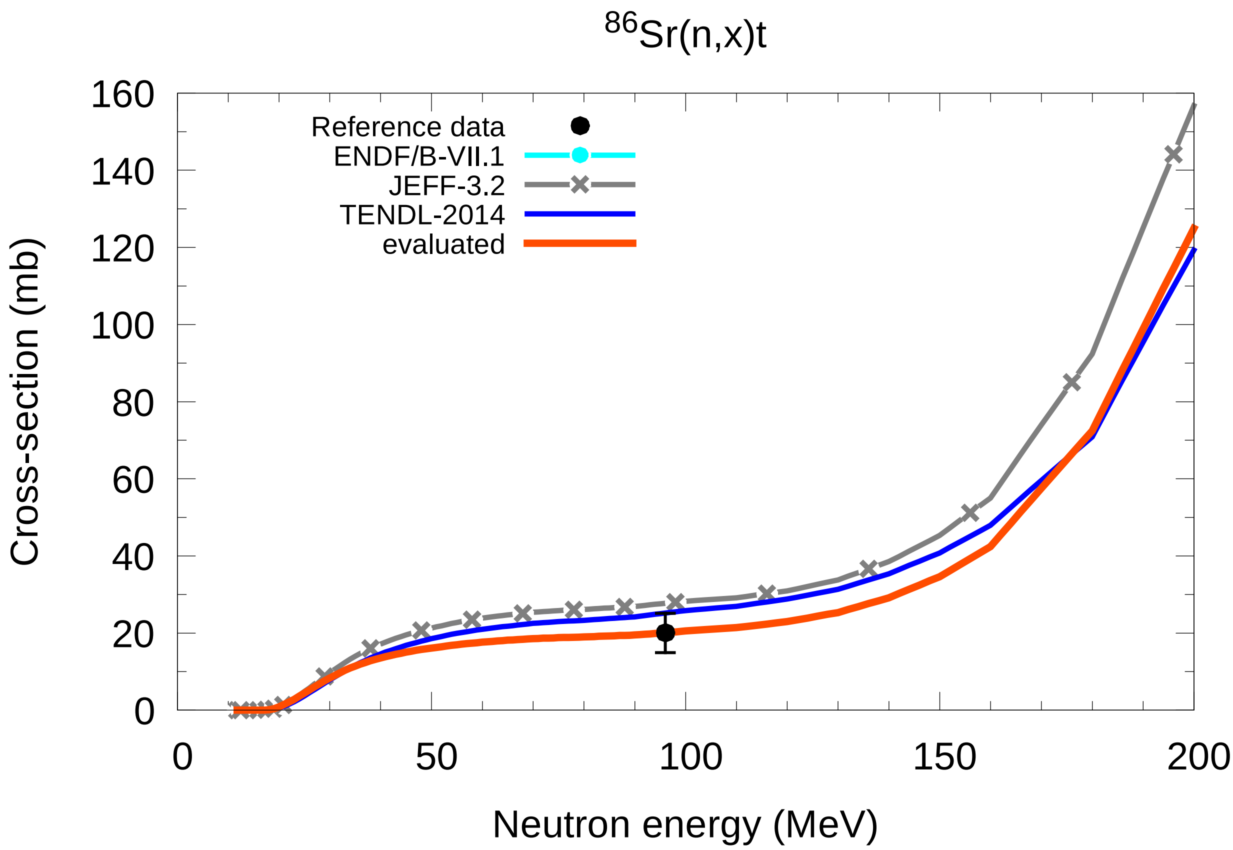

86Sr(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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40
60
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120
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0
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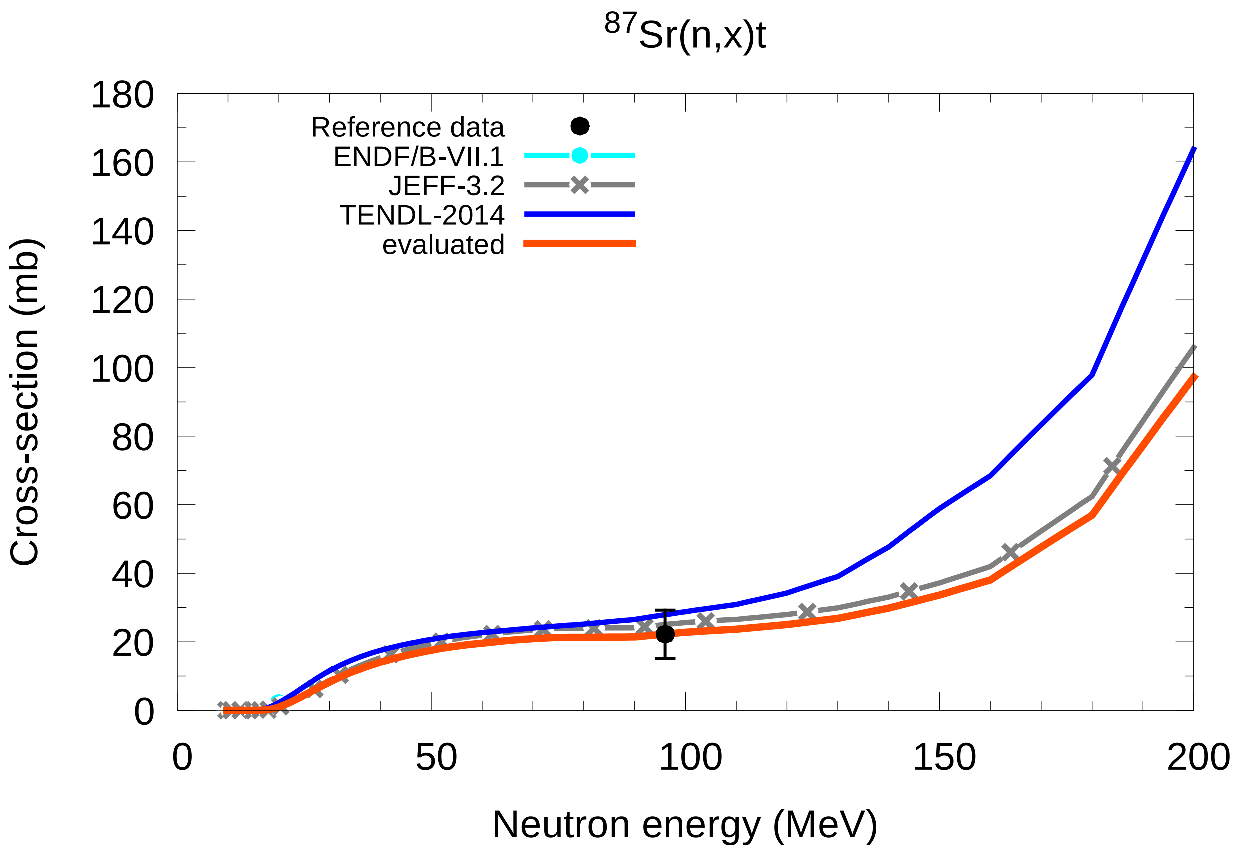
150
200



^{87}Sr(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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40
60
80
100
120
140
160
180
0
50
100
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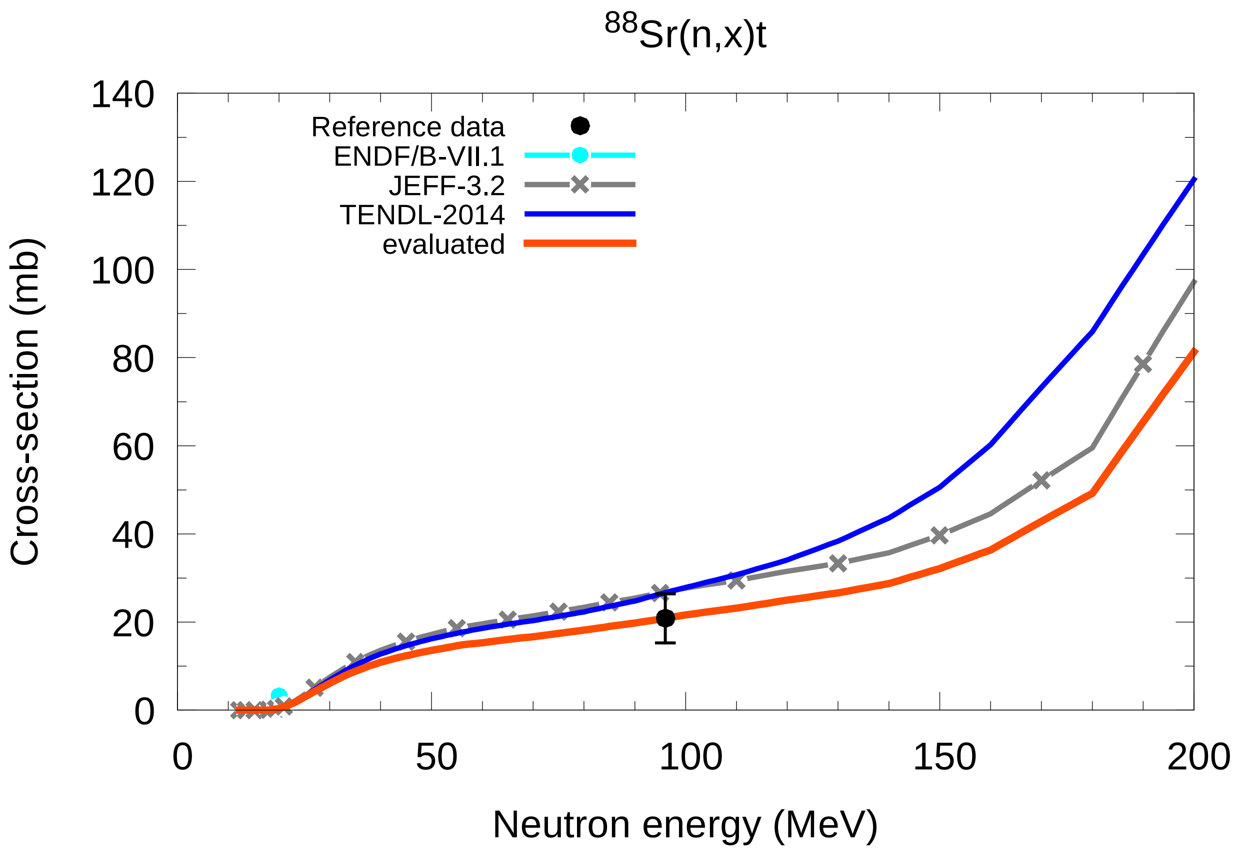
200



^{88}Sr(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
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100
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140
0
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150
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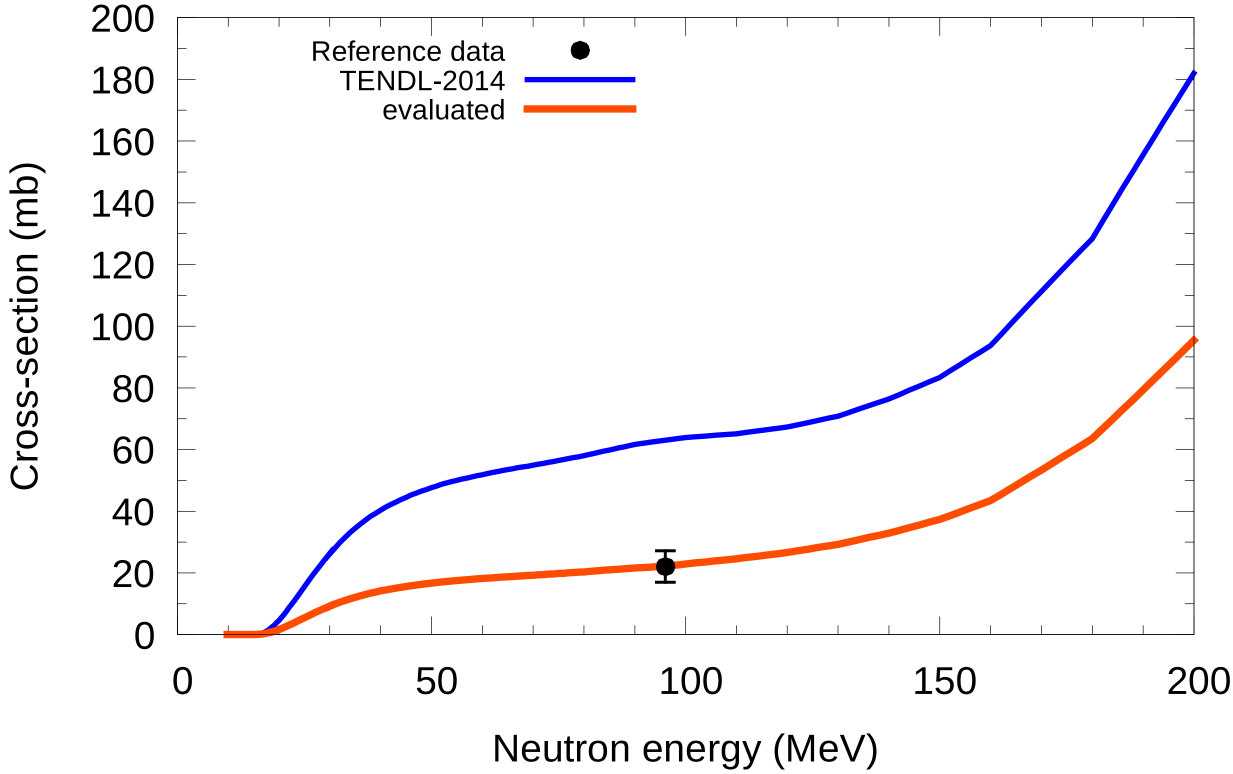
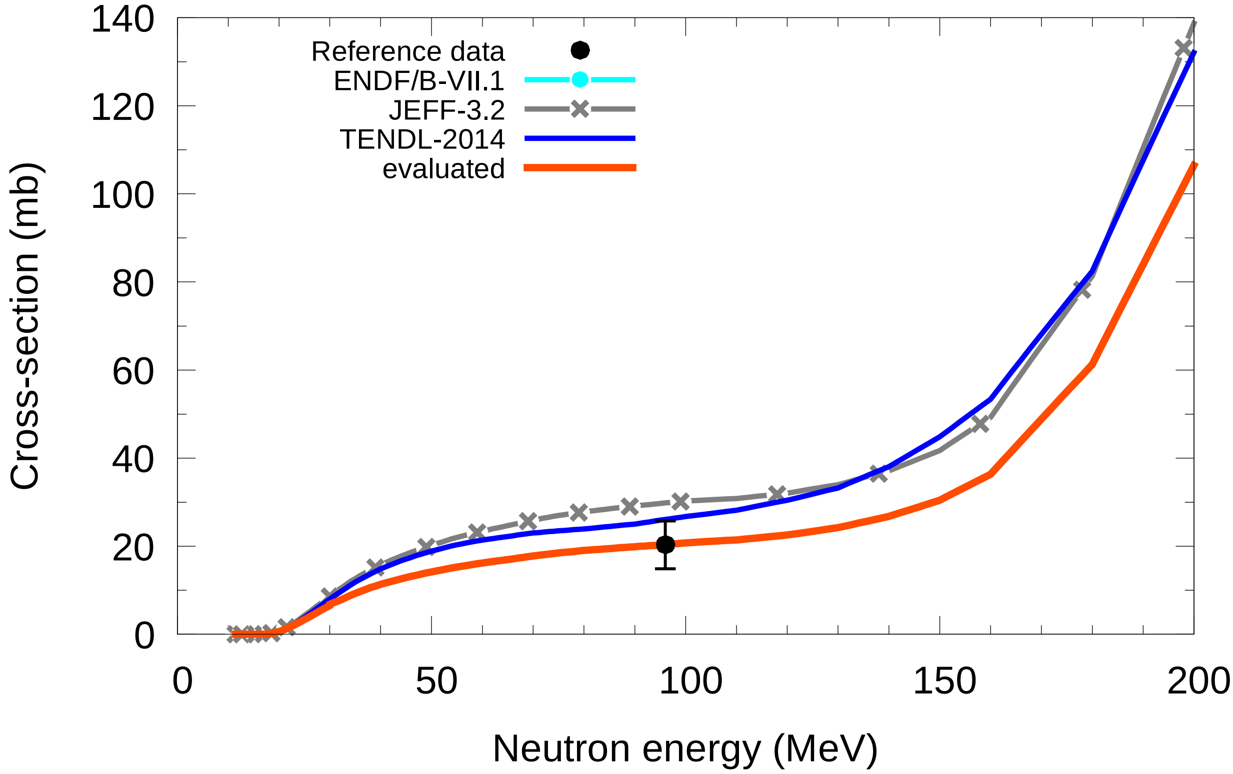
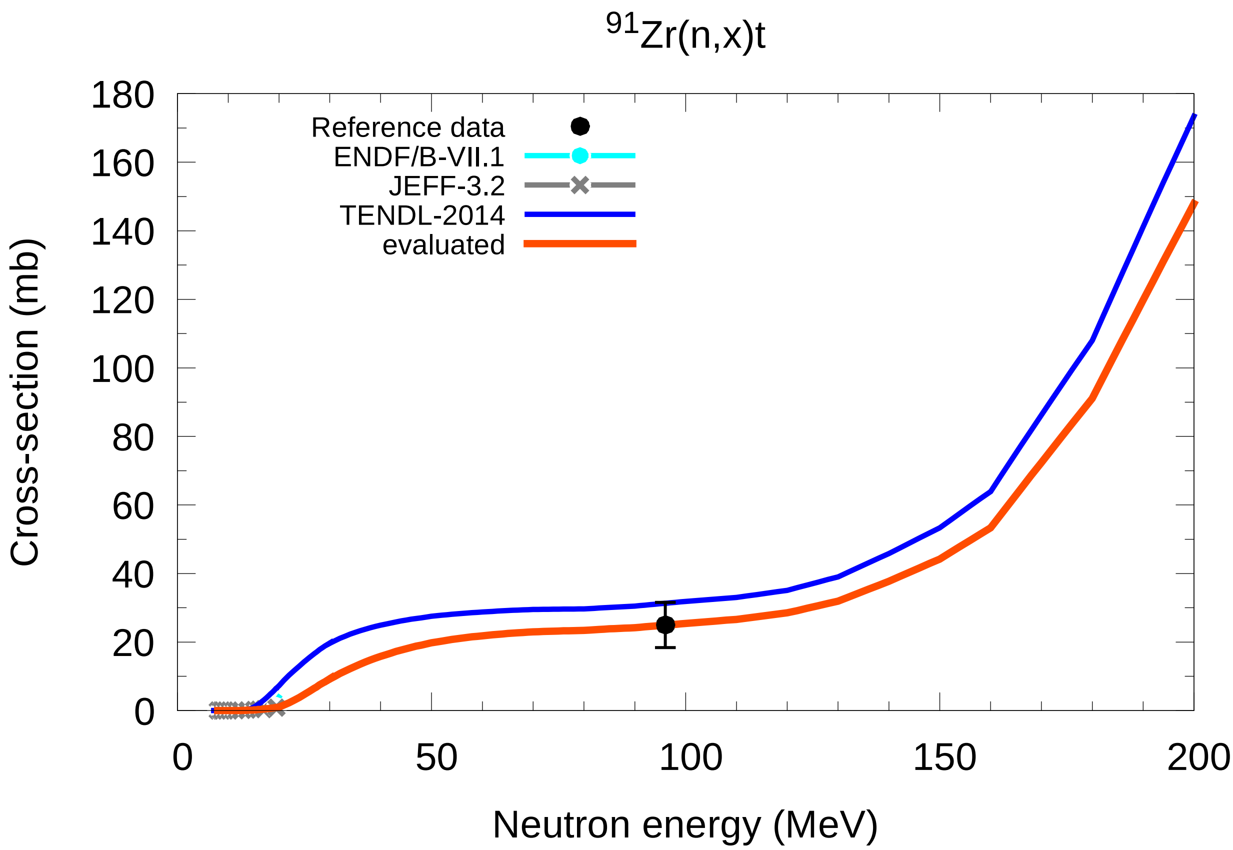
$^{89}Y(n,x)t$



$^{90}Zr(n,x)t$





^{91}Zr(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
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160
180
0
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150
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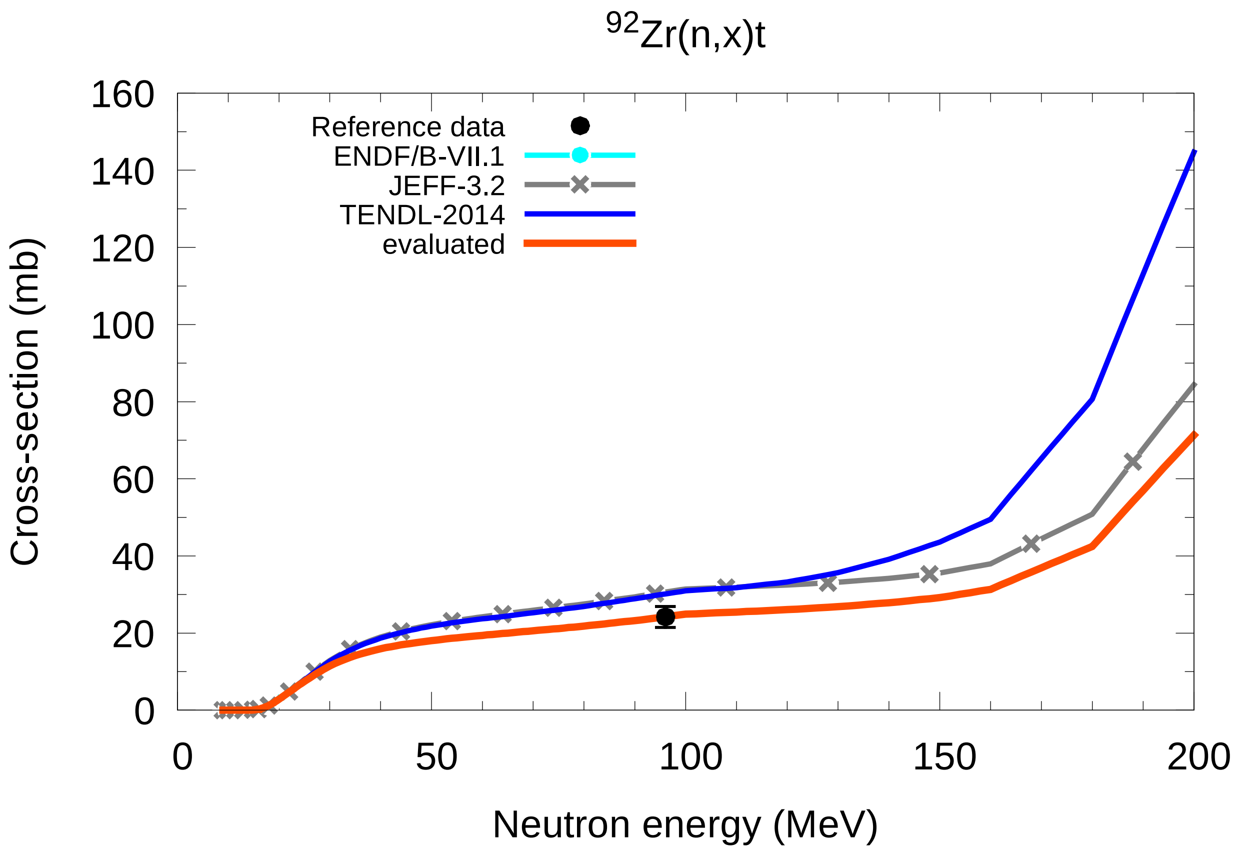

^{92}Zr(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
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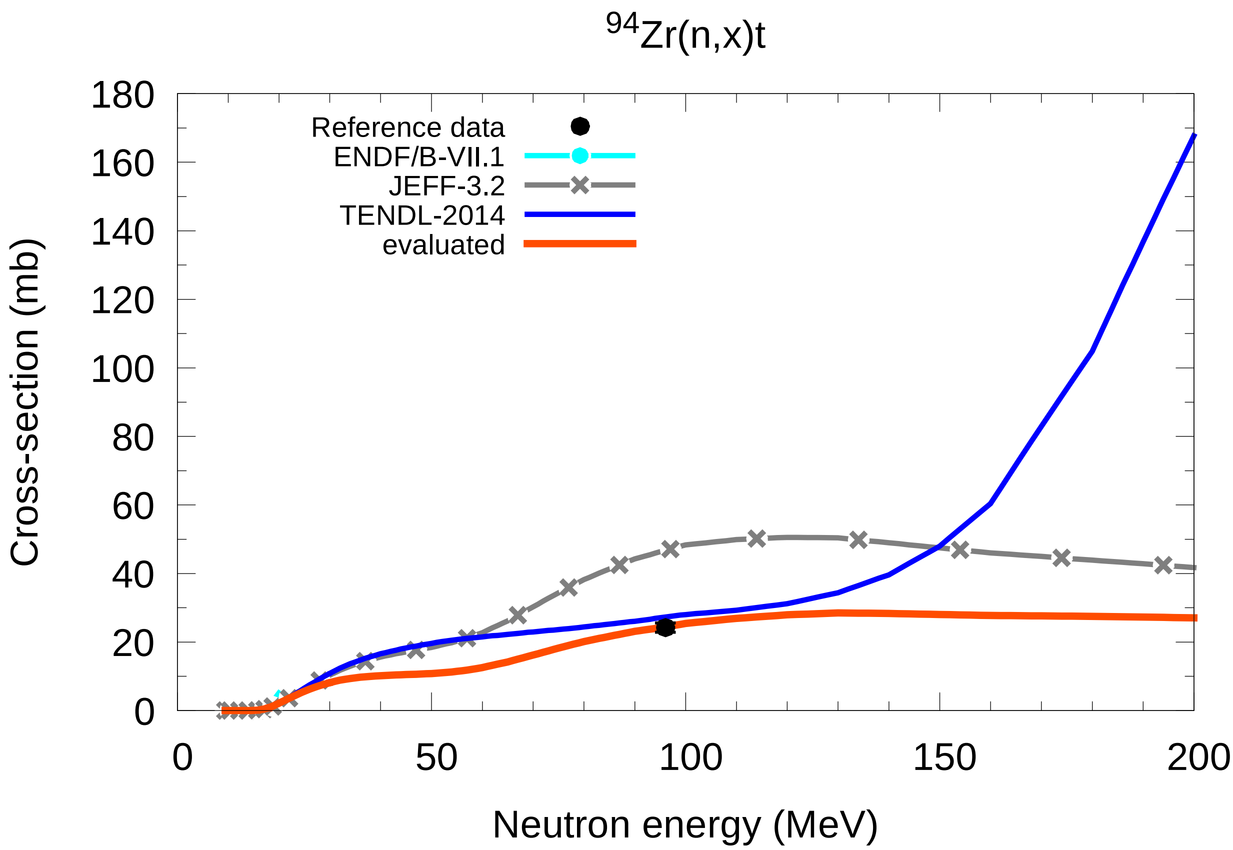

^{94}Zr(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
0
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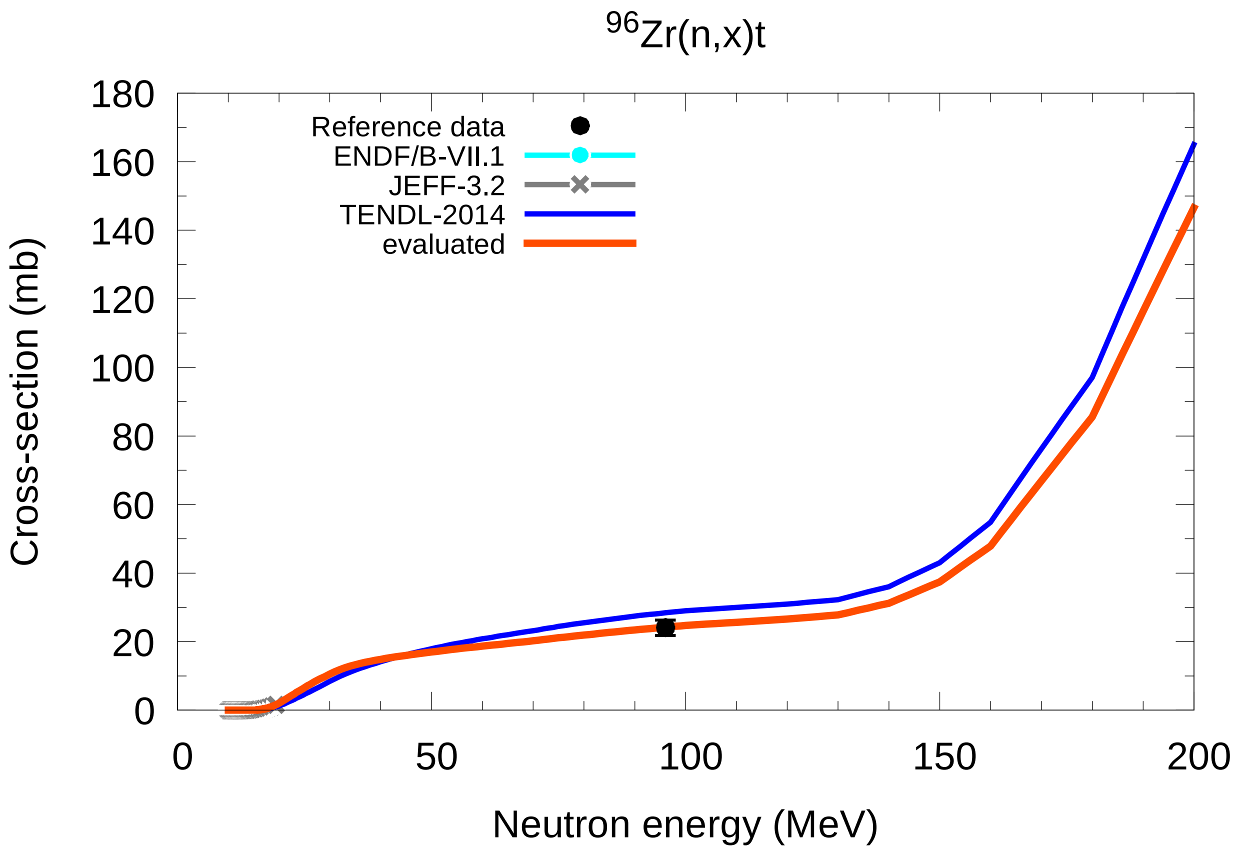
40
60
80
100
120
140
160
180
0
50
100
150
200
Neutron energy (MeV)



^{96}Zr(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
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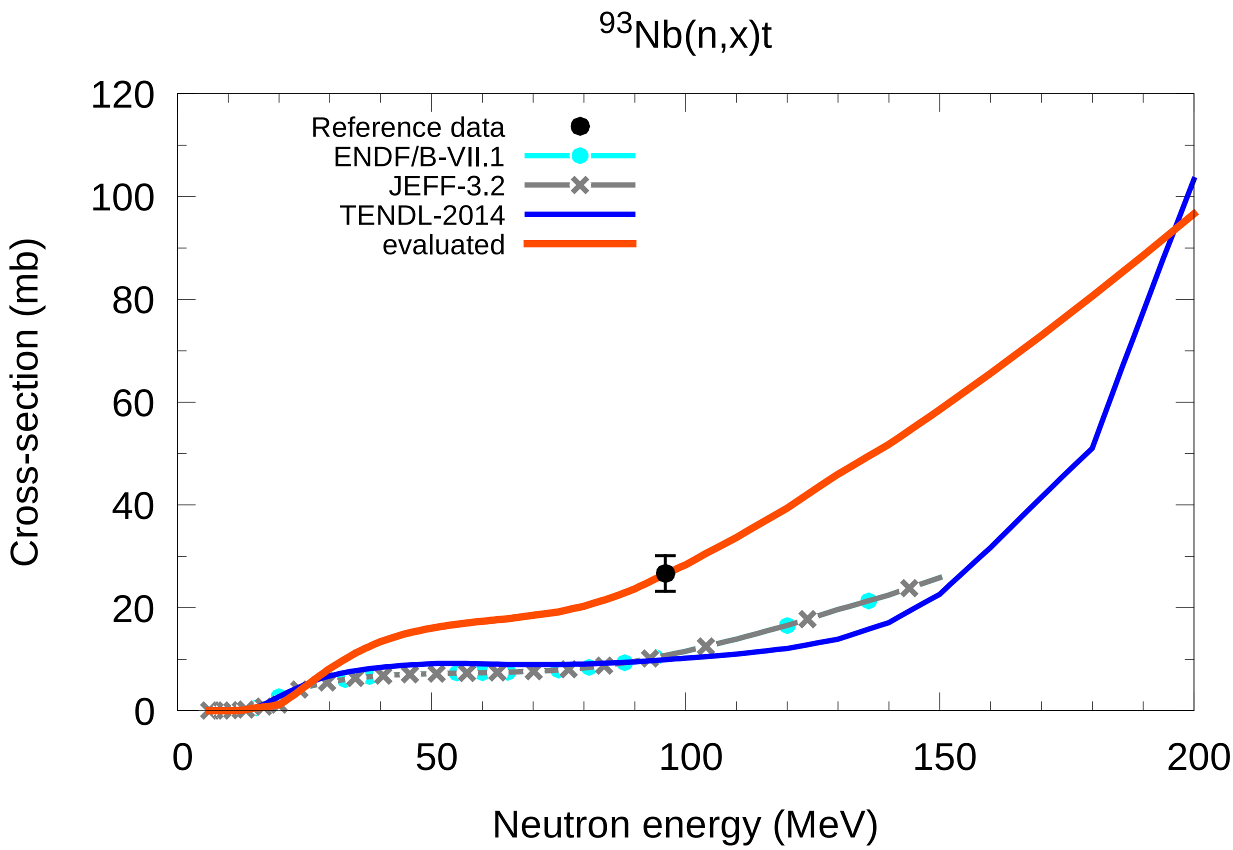
80
100
120
140
160
180
0
50
100
150
200
Neutron energy (MeV)



^{93}Nb(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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100
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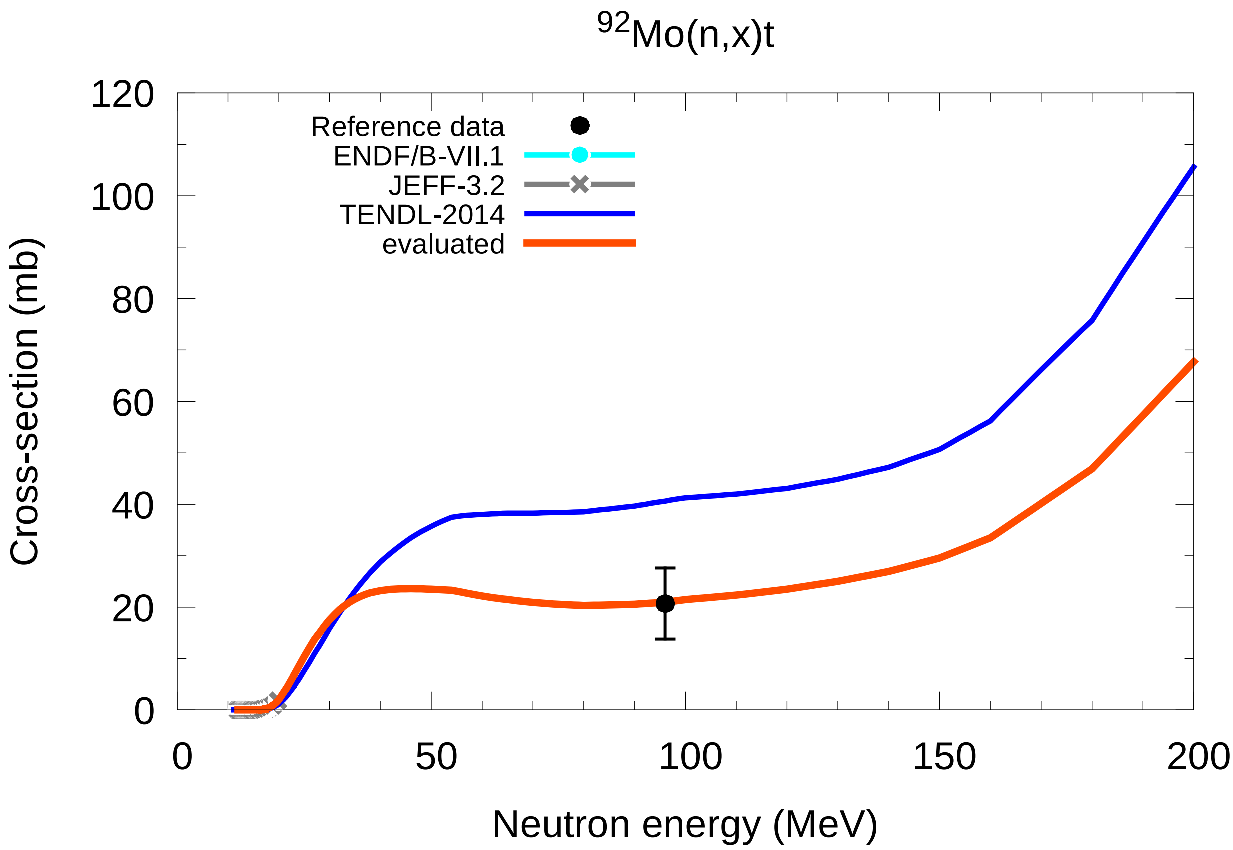
200



^{92}Mo(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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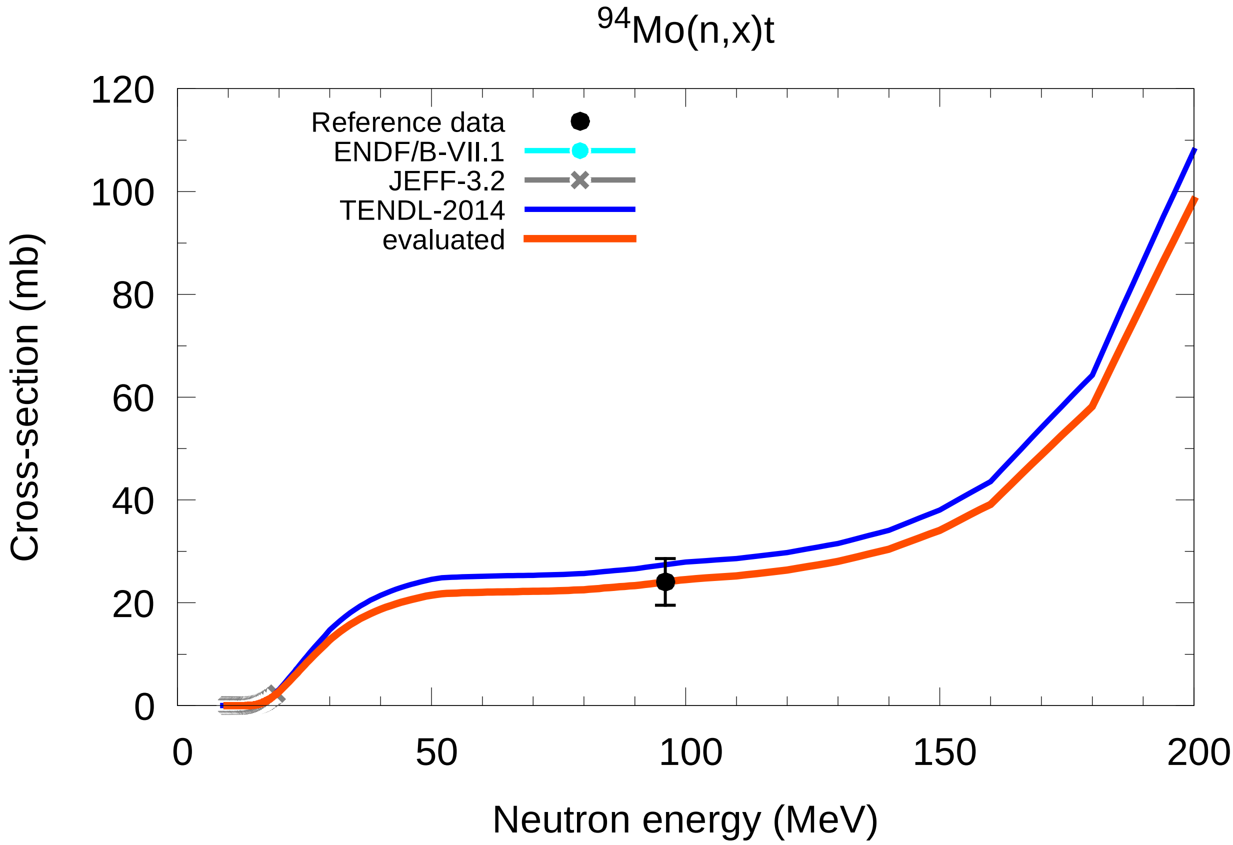

^{94}Mo(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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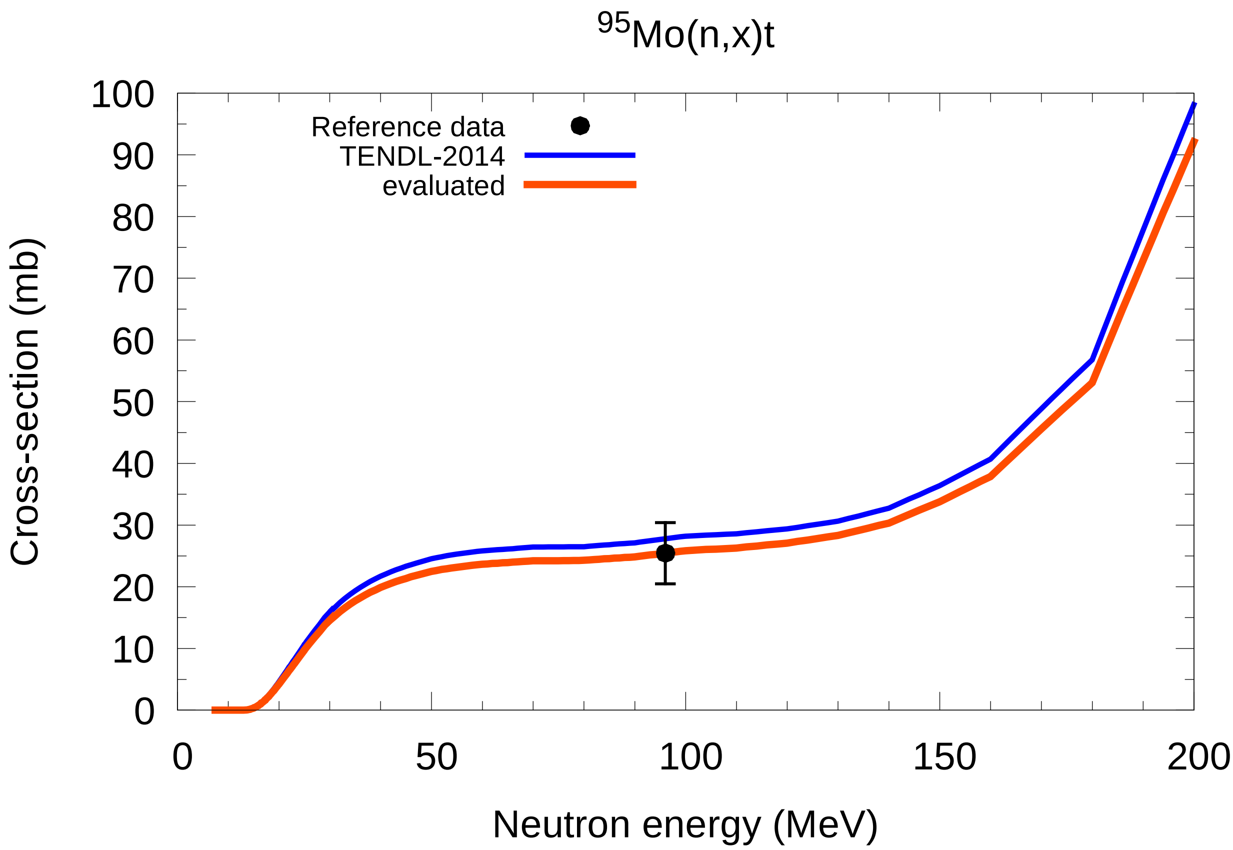

^{95}Mo(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
10
20
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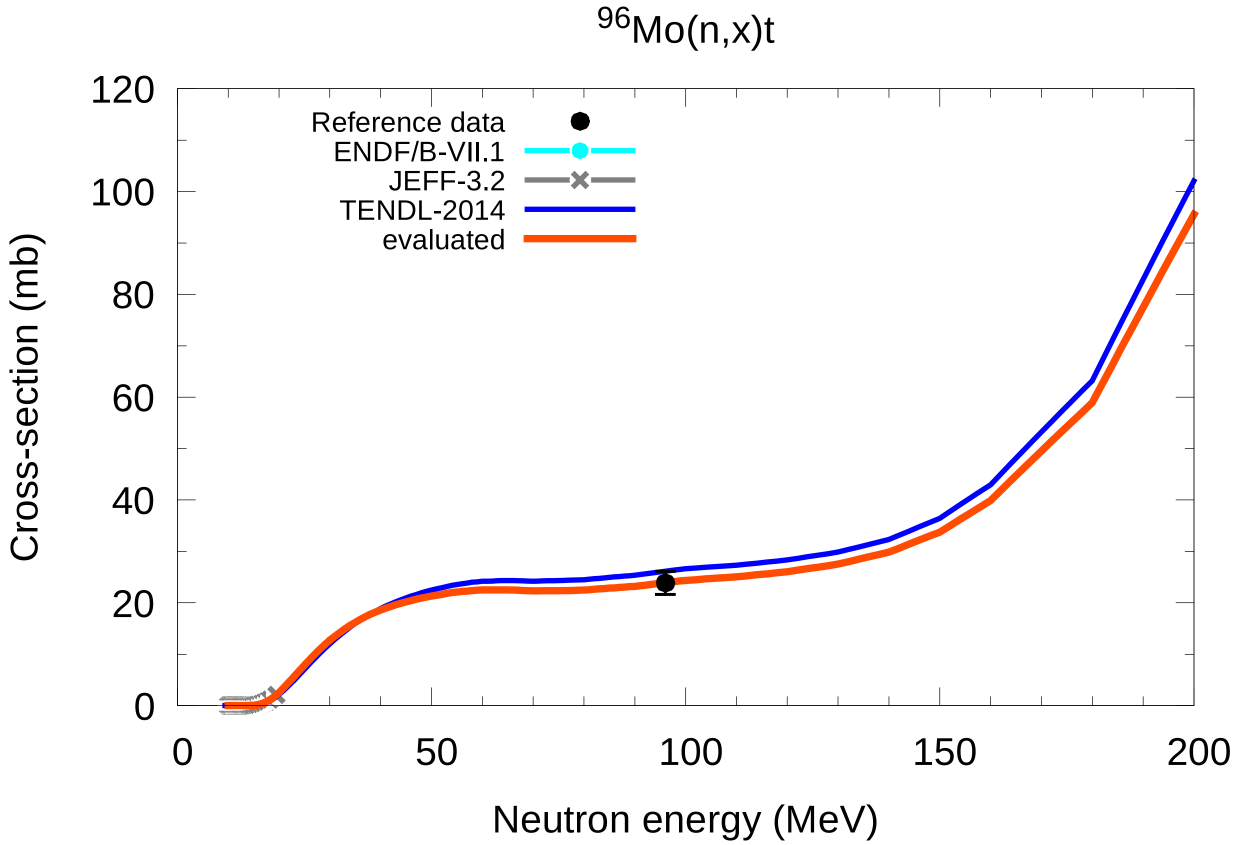

^{96}Mo(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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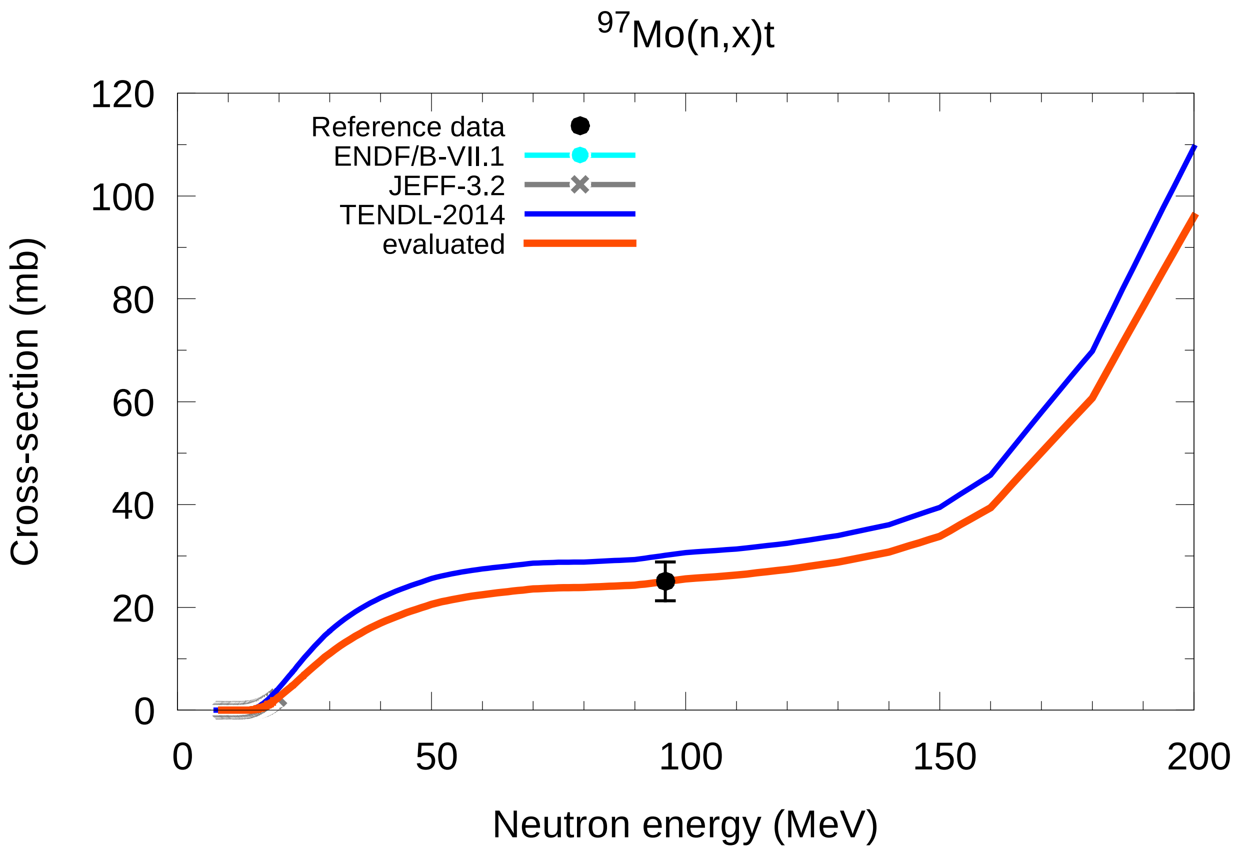
100
150
200



^{97}Mo(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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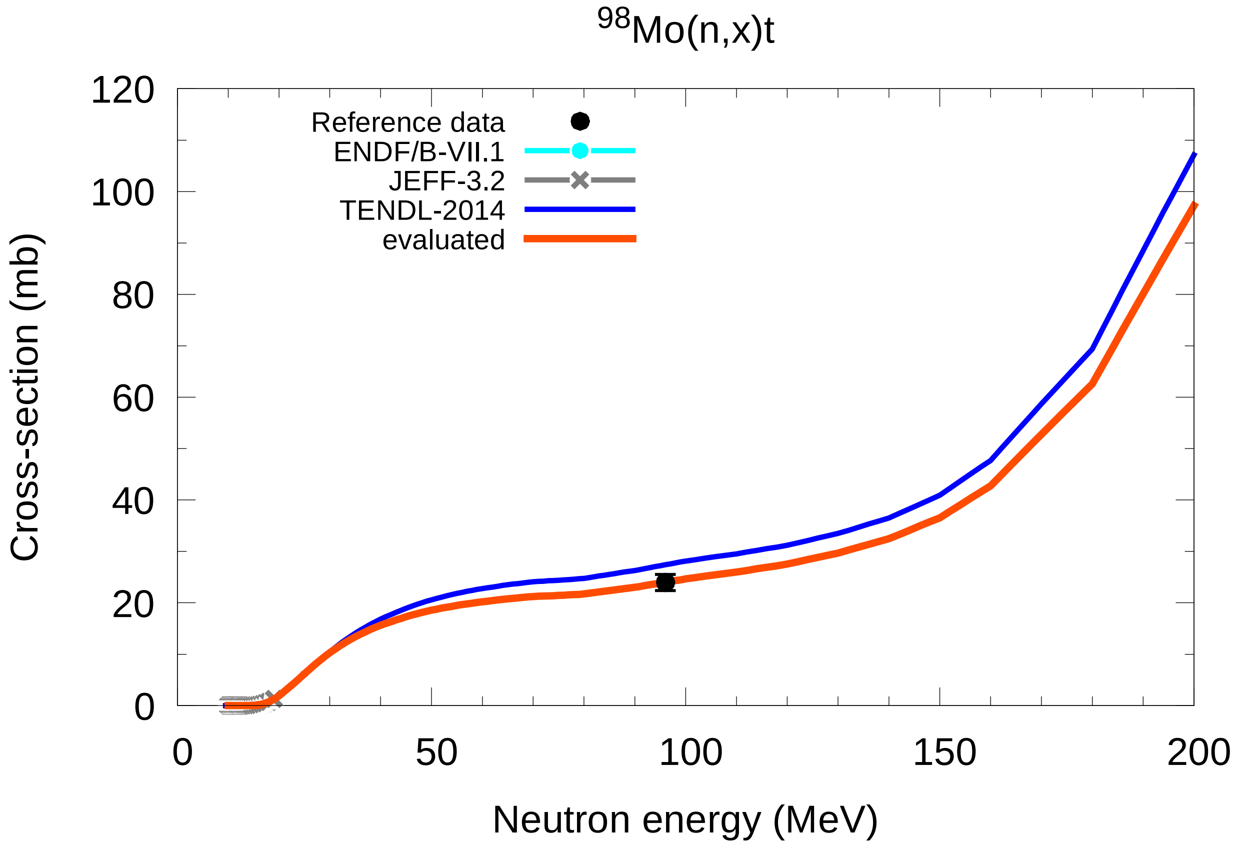

98Mo(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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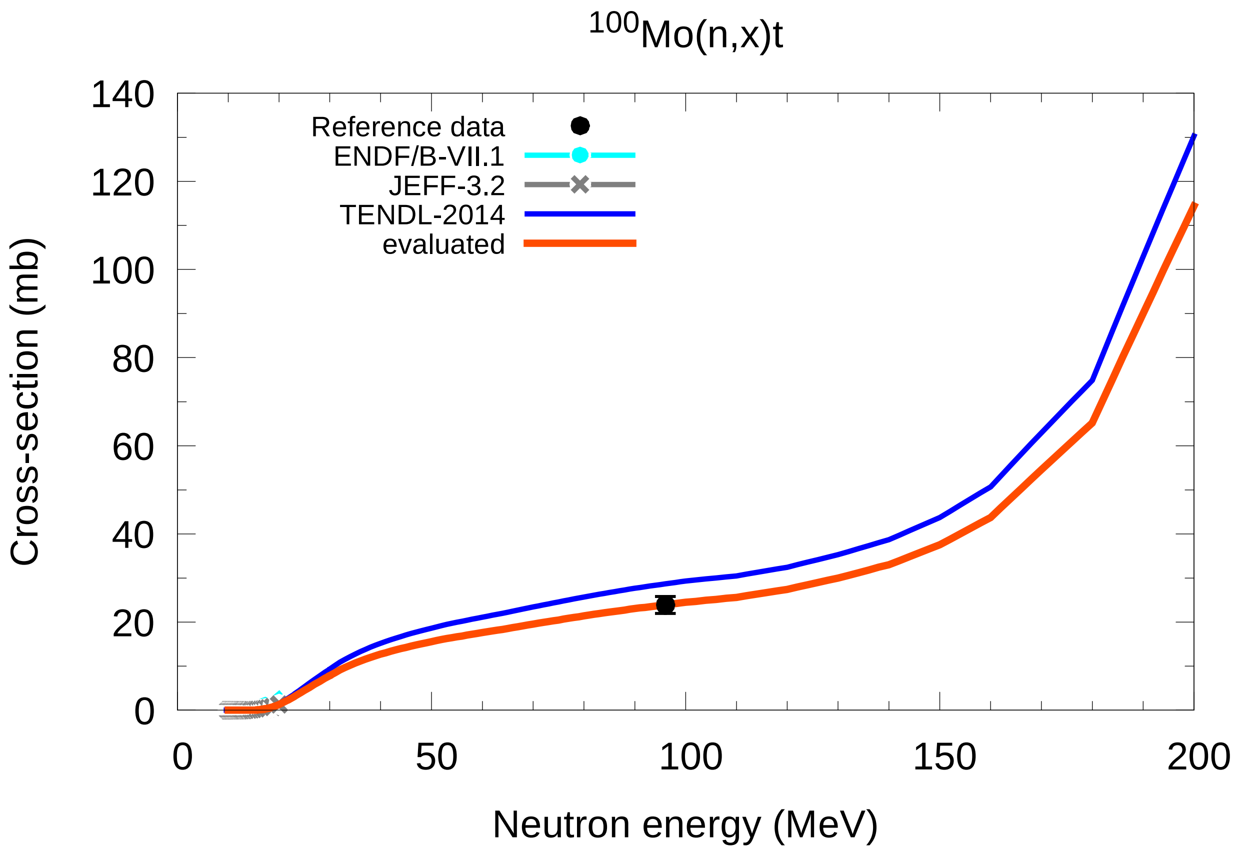
150
200



100Mo(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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60
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100
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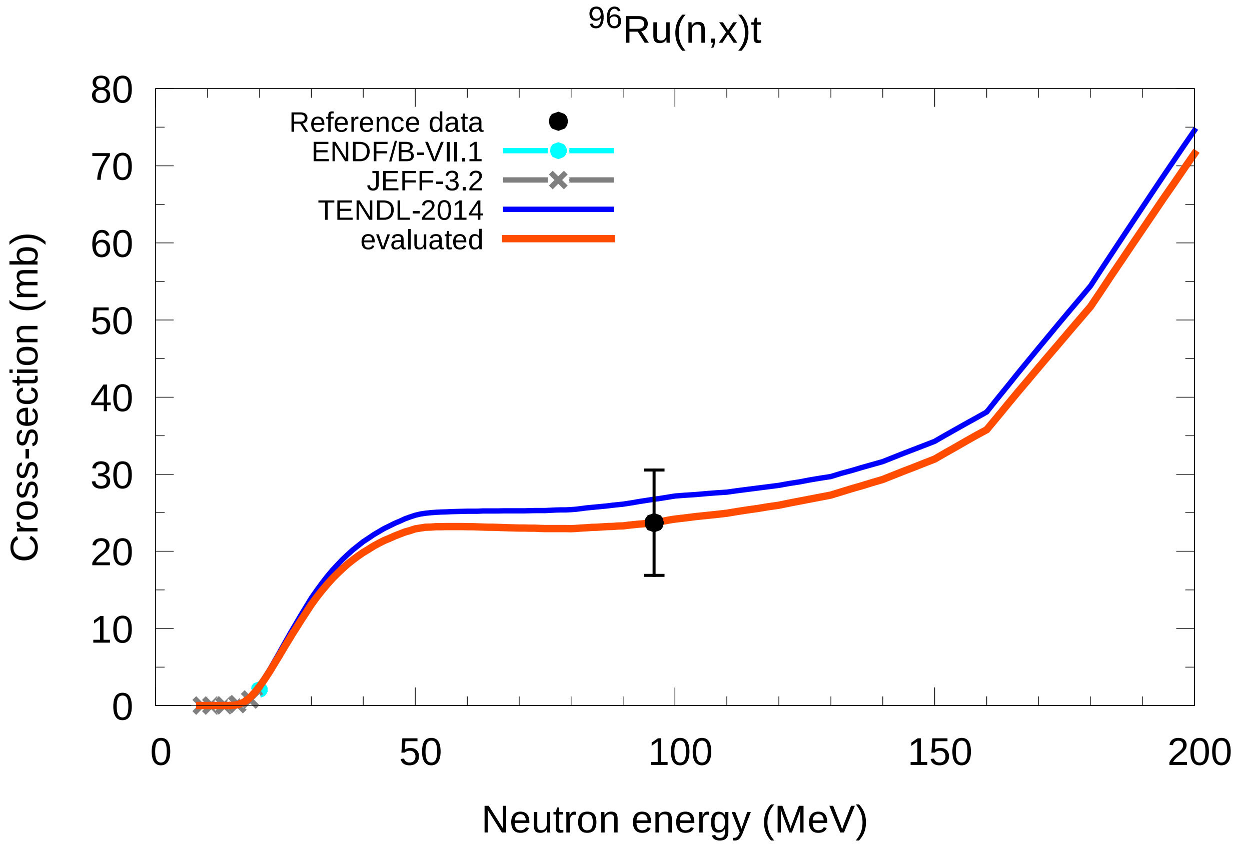
150
200


^{96}Ru(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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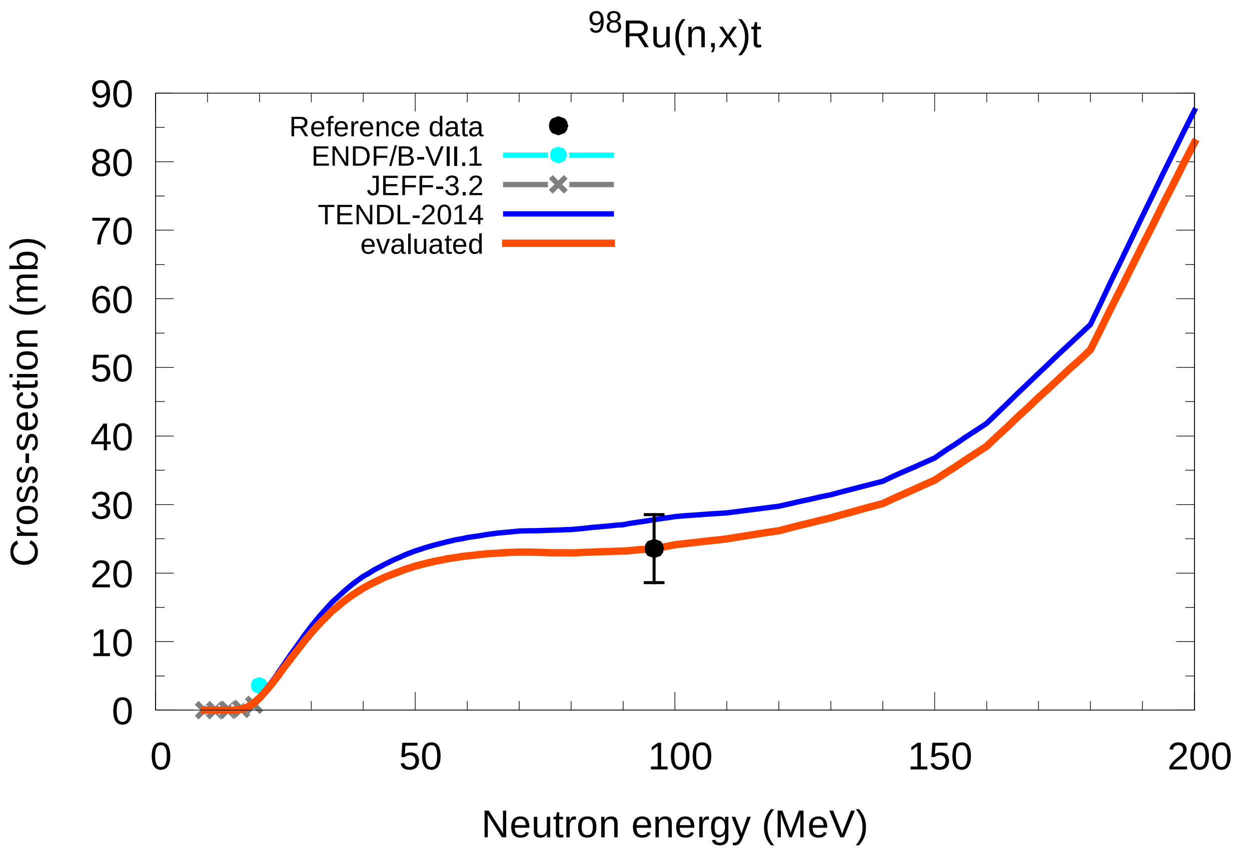
200


^{98}Ru(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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30
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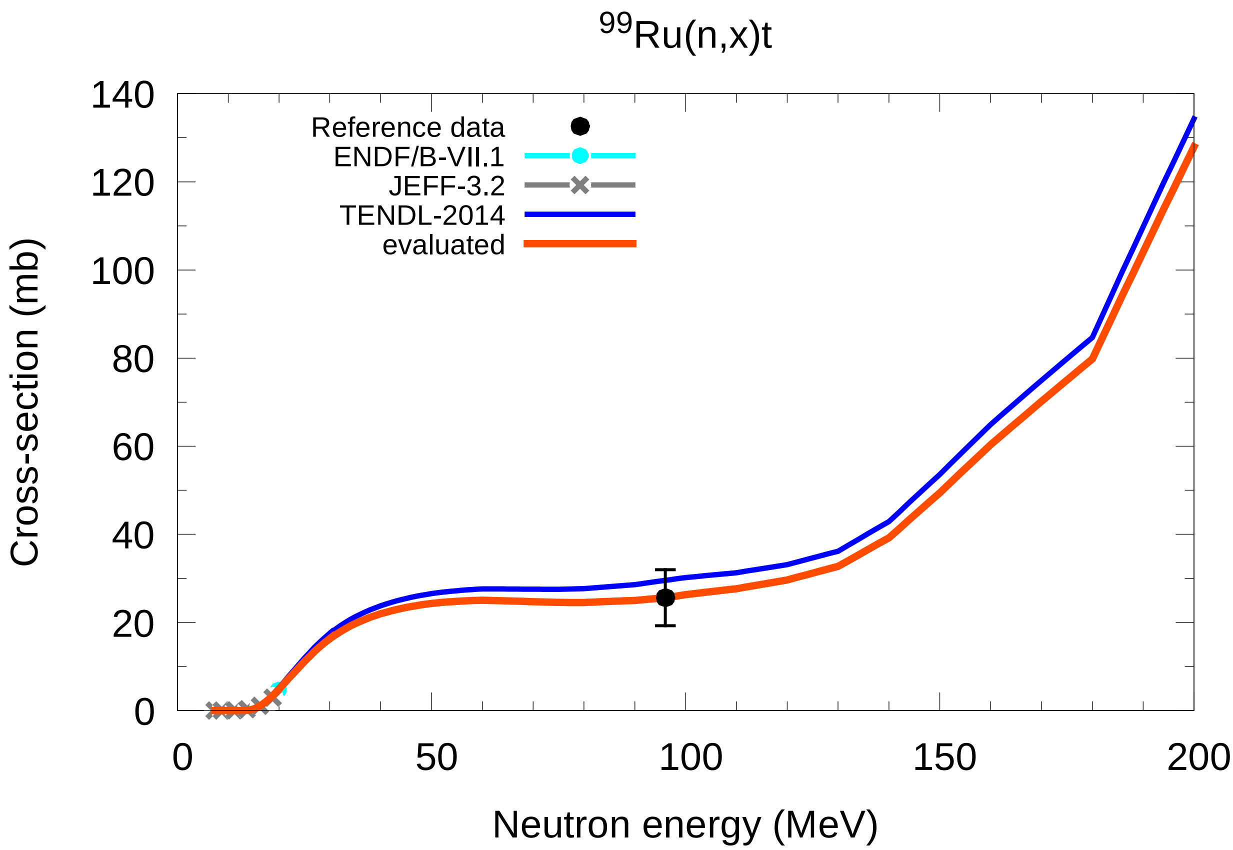

^{99}Ru(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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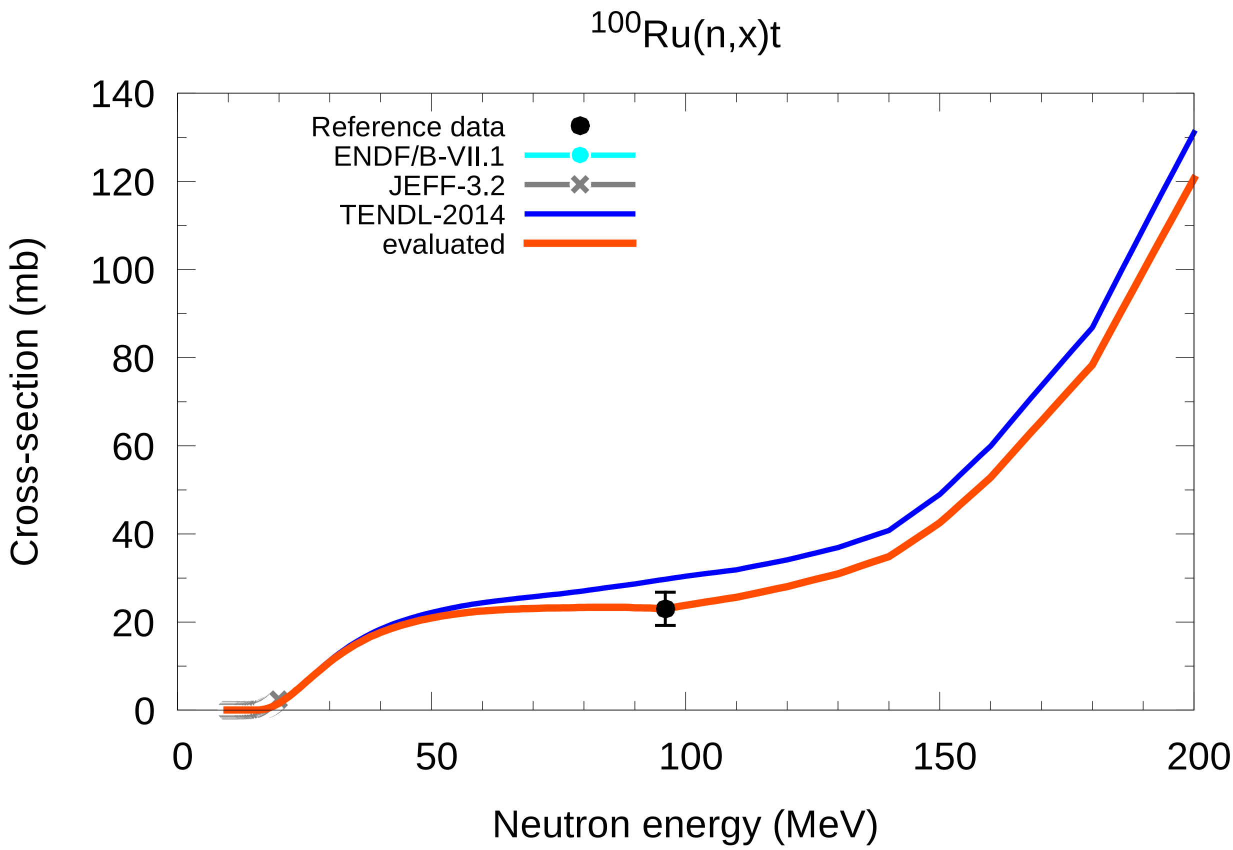

^{100}Ru(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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60
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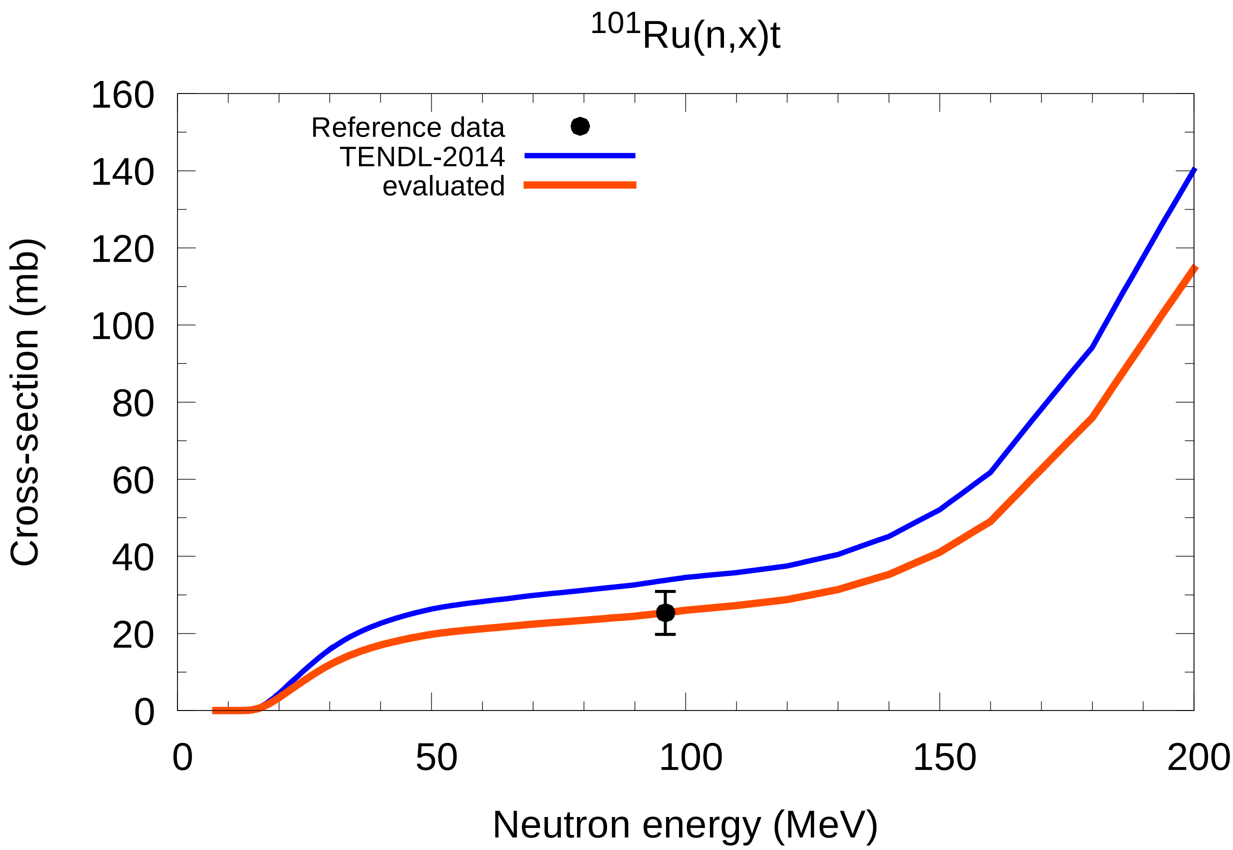

^{101}Ru(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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0
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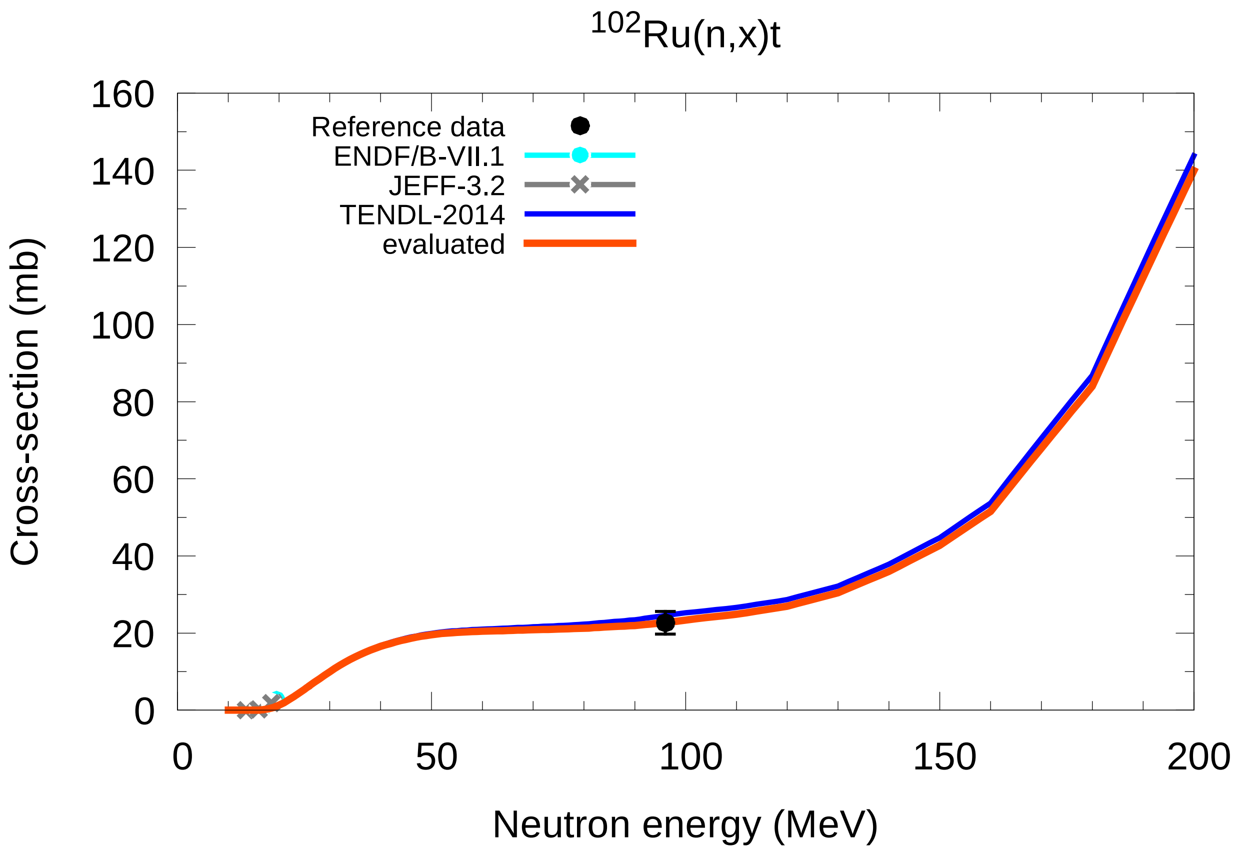
150
200



^{102}Ru(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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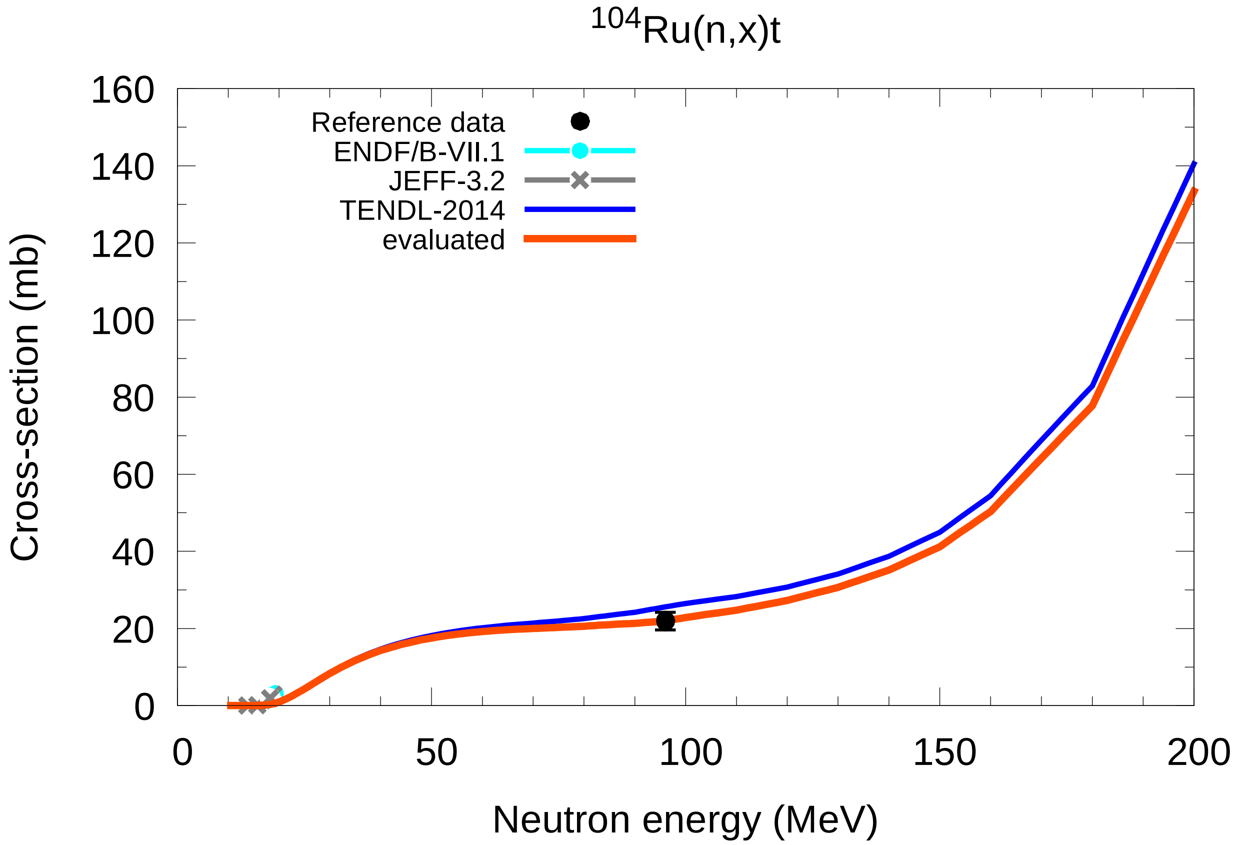
150
200



^{104}Ru(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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40
60
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120
140
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0
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100
150
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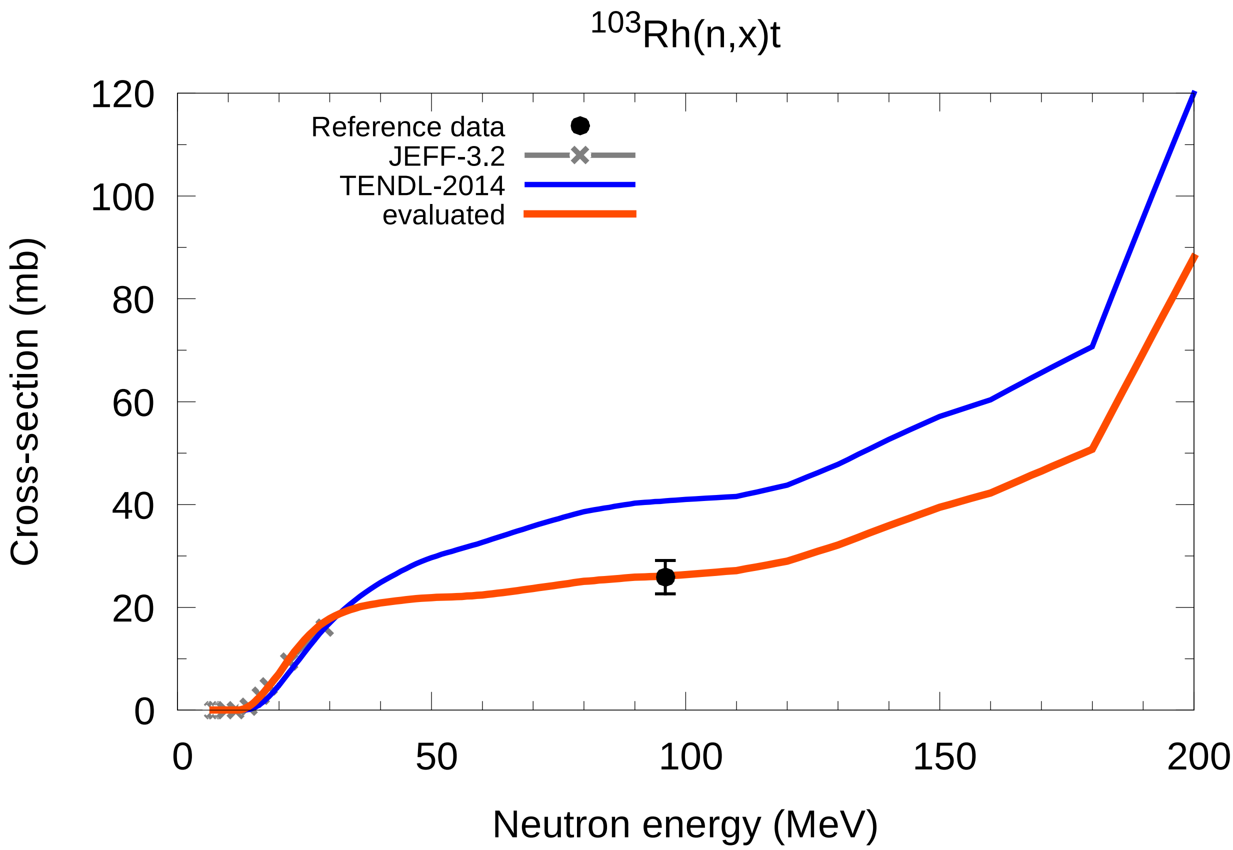

^{103}Rh(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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80
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120
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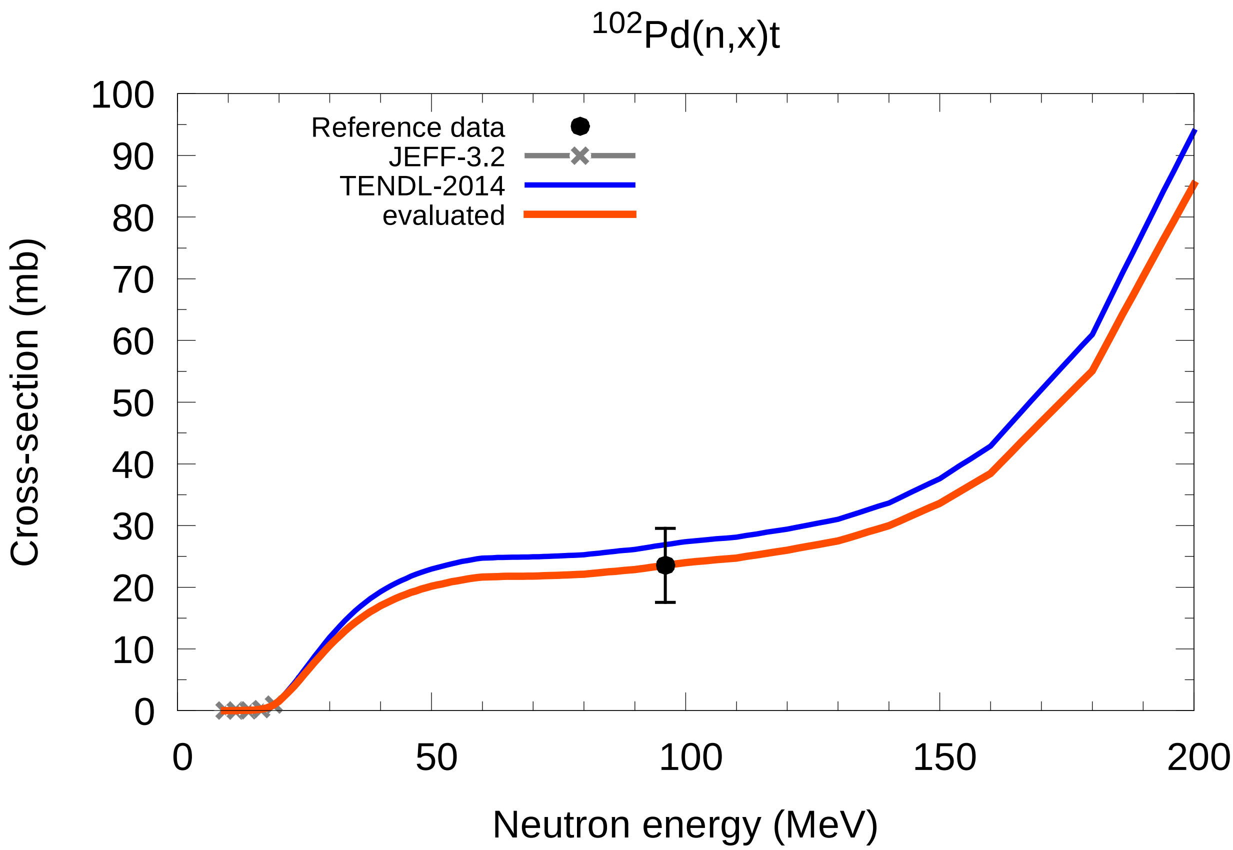
150
200



^{102}Pd(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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0
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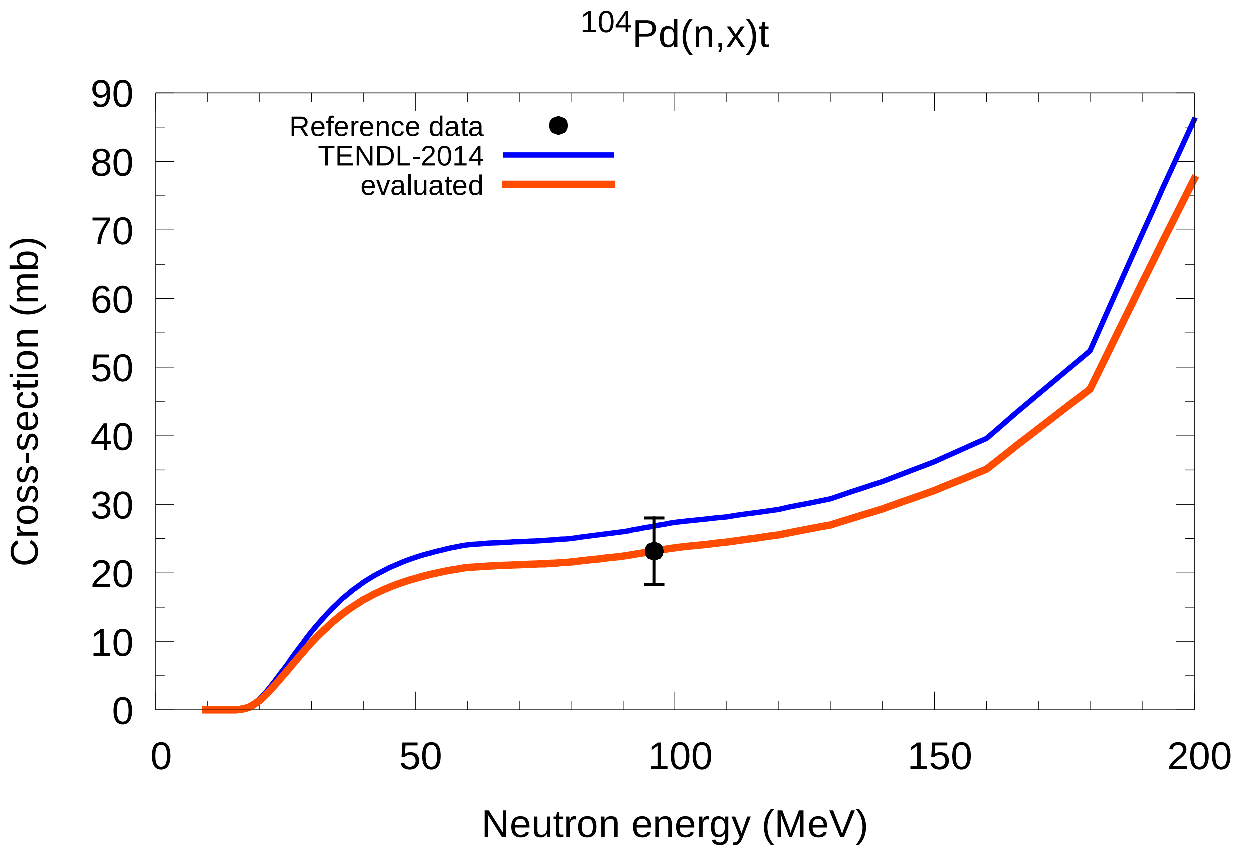
100
150
200



^{104}Pd(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
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10
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30
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70
80
90
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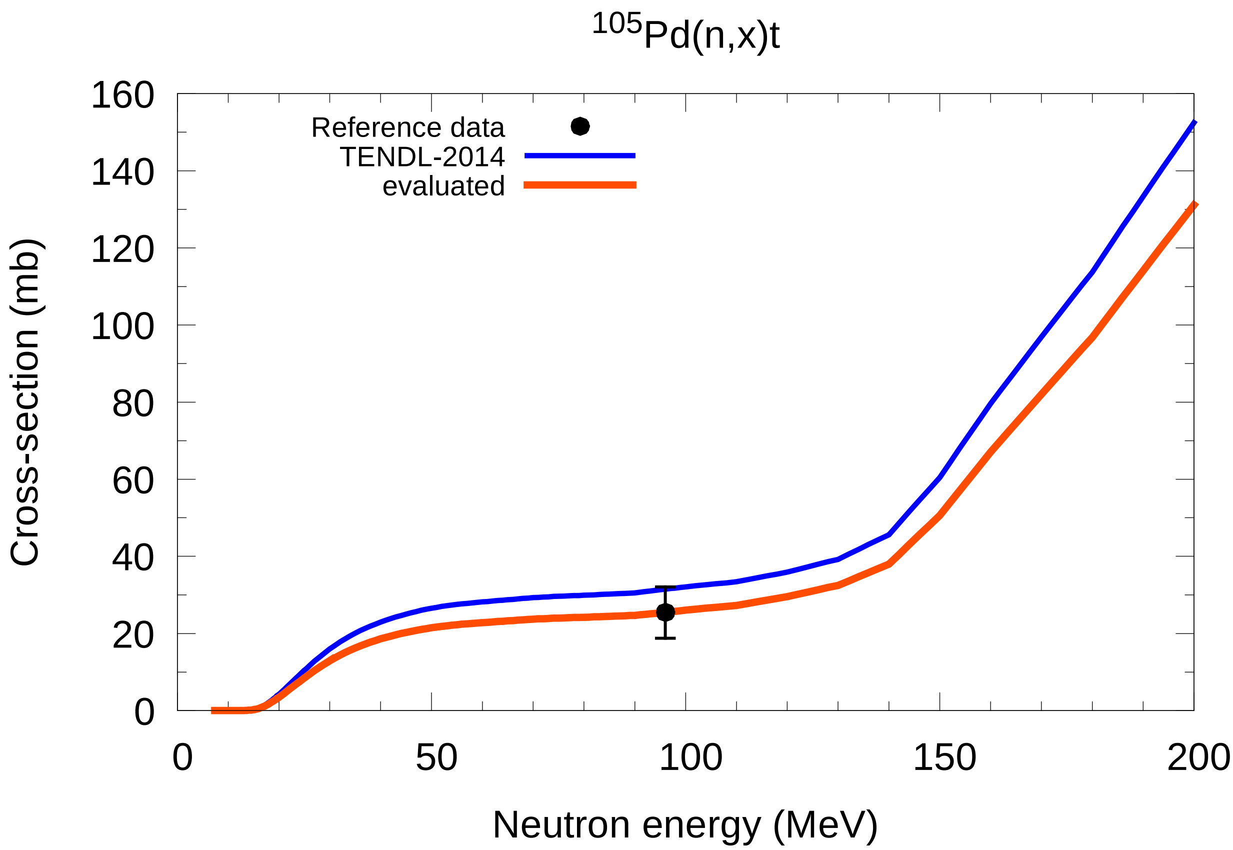
150
200



^{105}Pd(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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60
80
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120
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160
0
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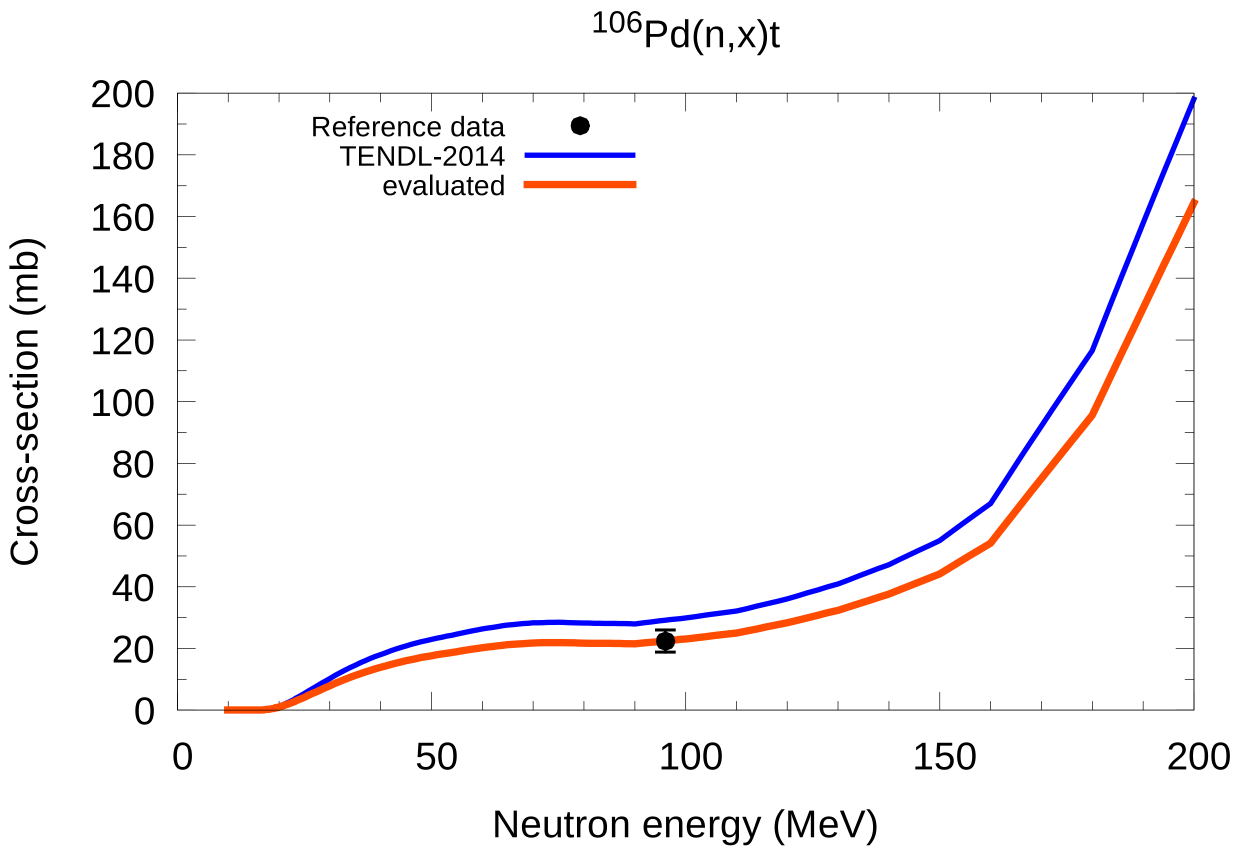
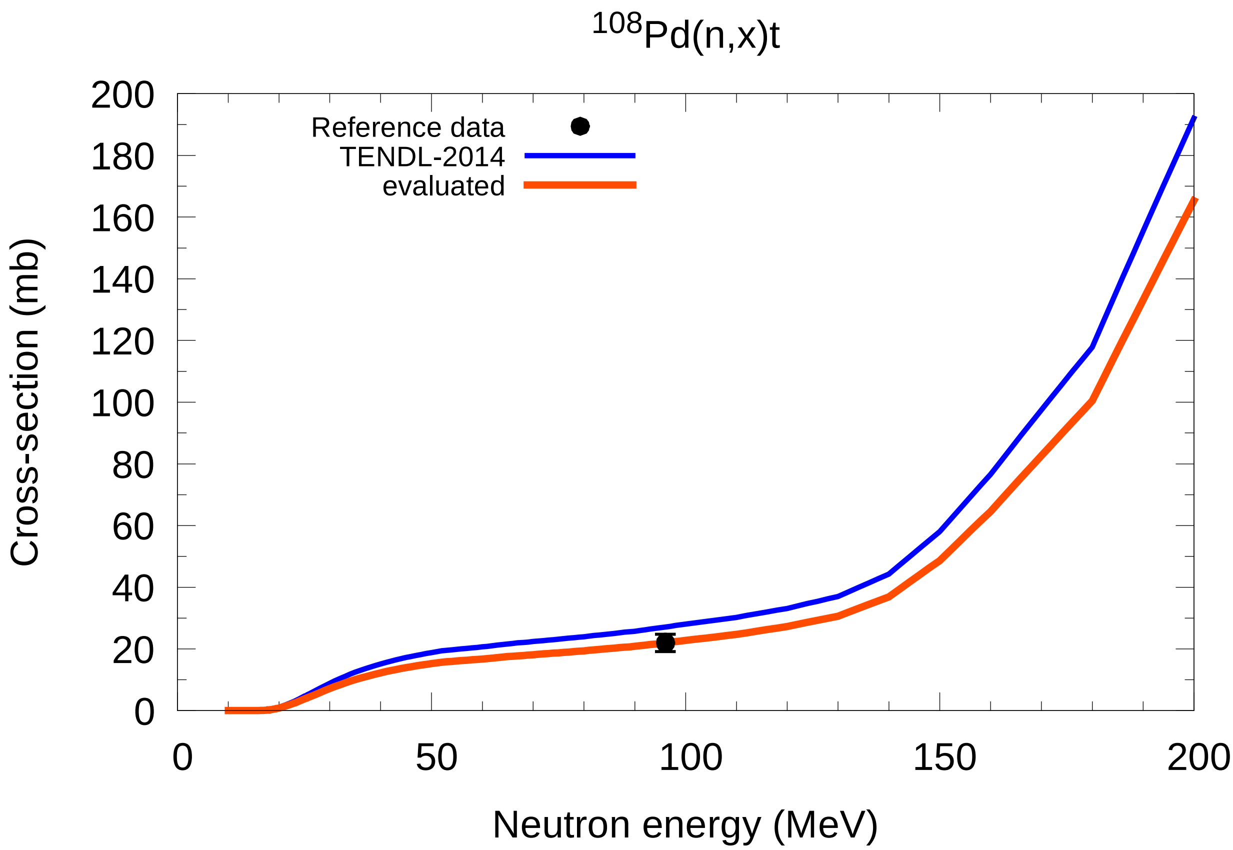
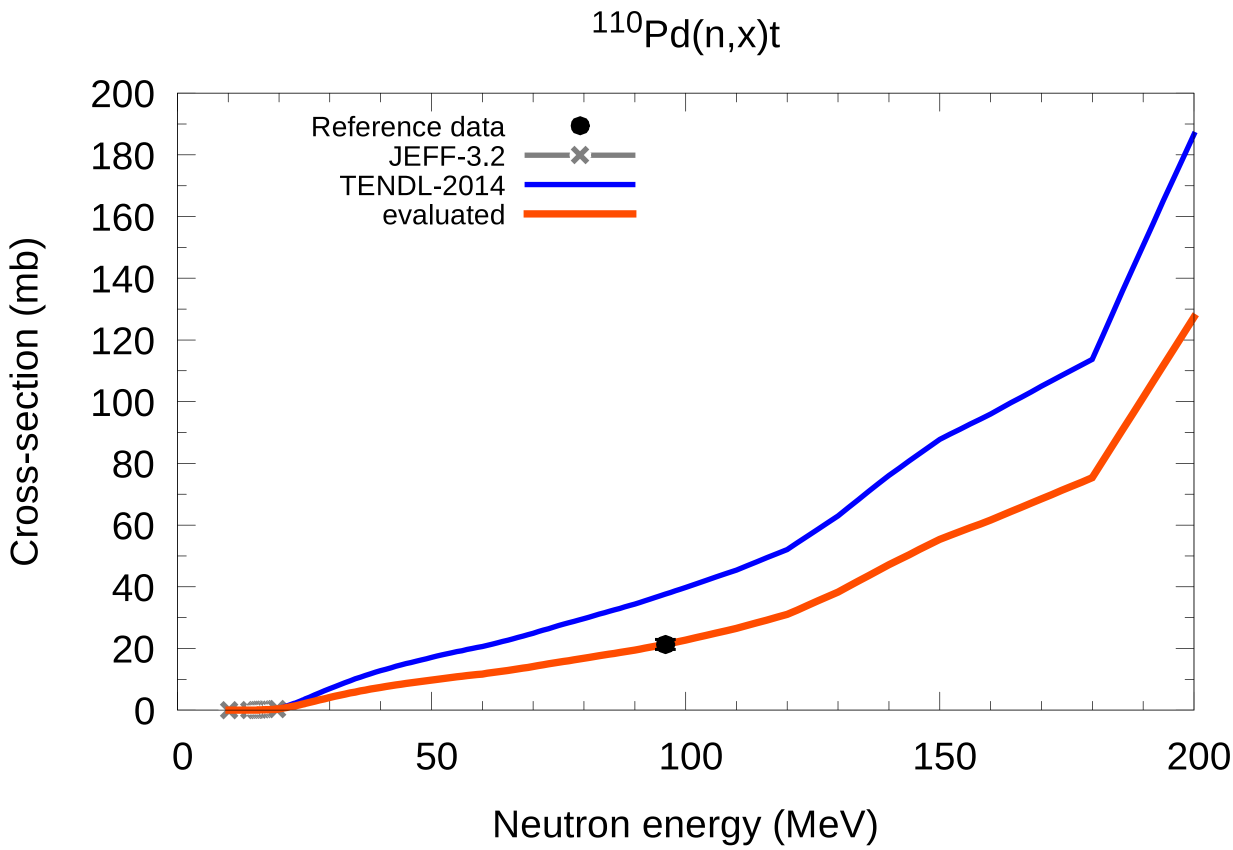
150
200



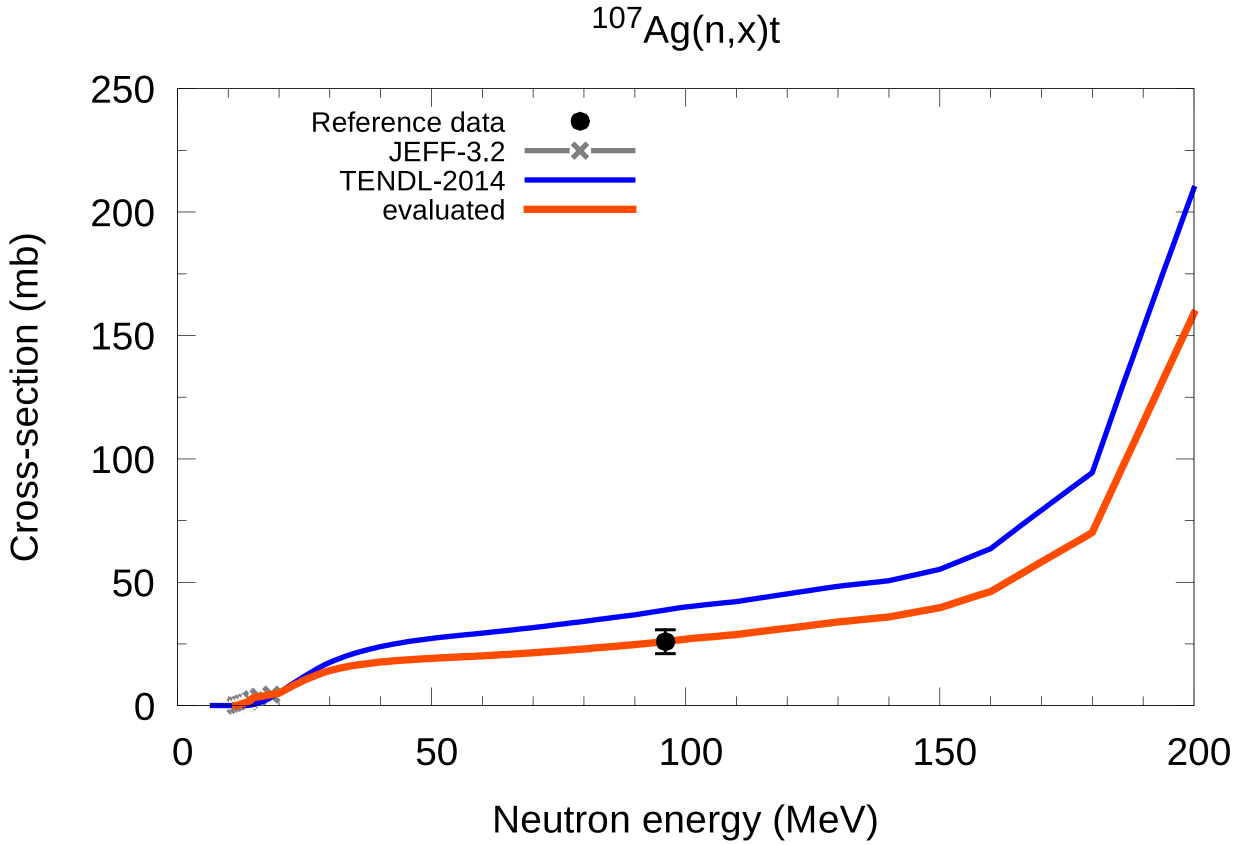
^{106}Pd(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200



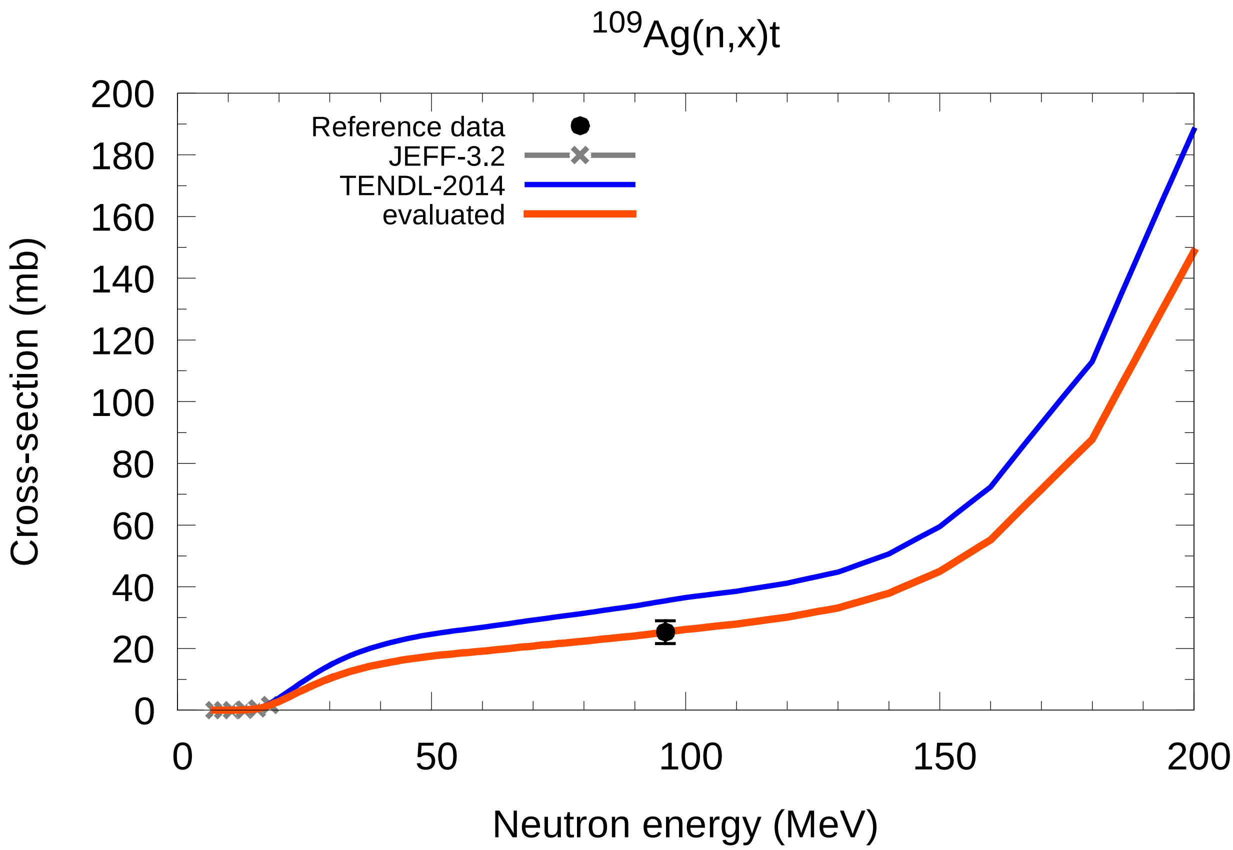
^{108}Pd(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200



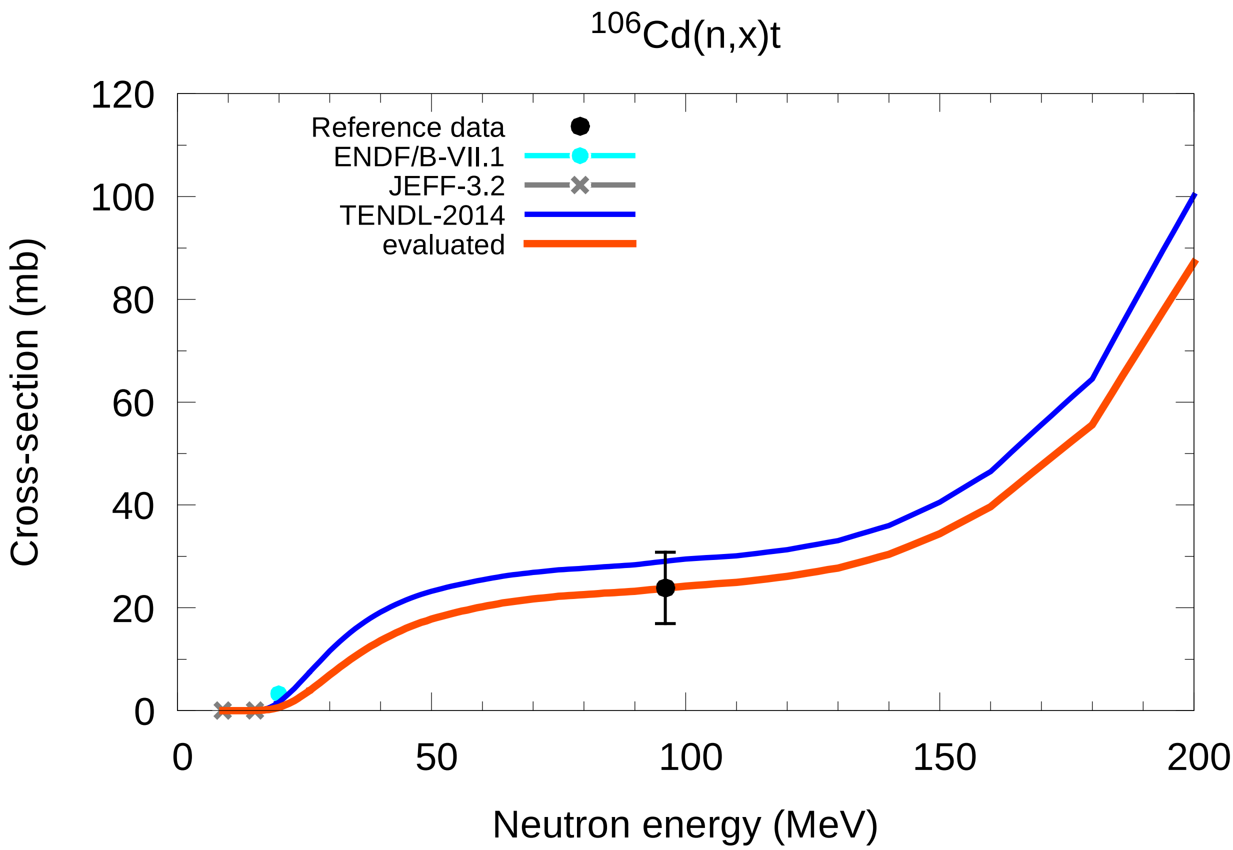
^{110}Pd(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200



^{107}Ag(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



^{109}Ag(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200



106Cd(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
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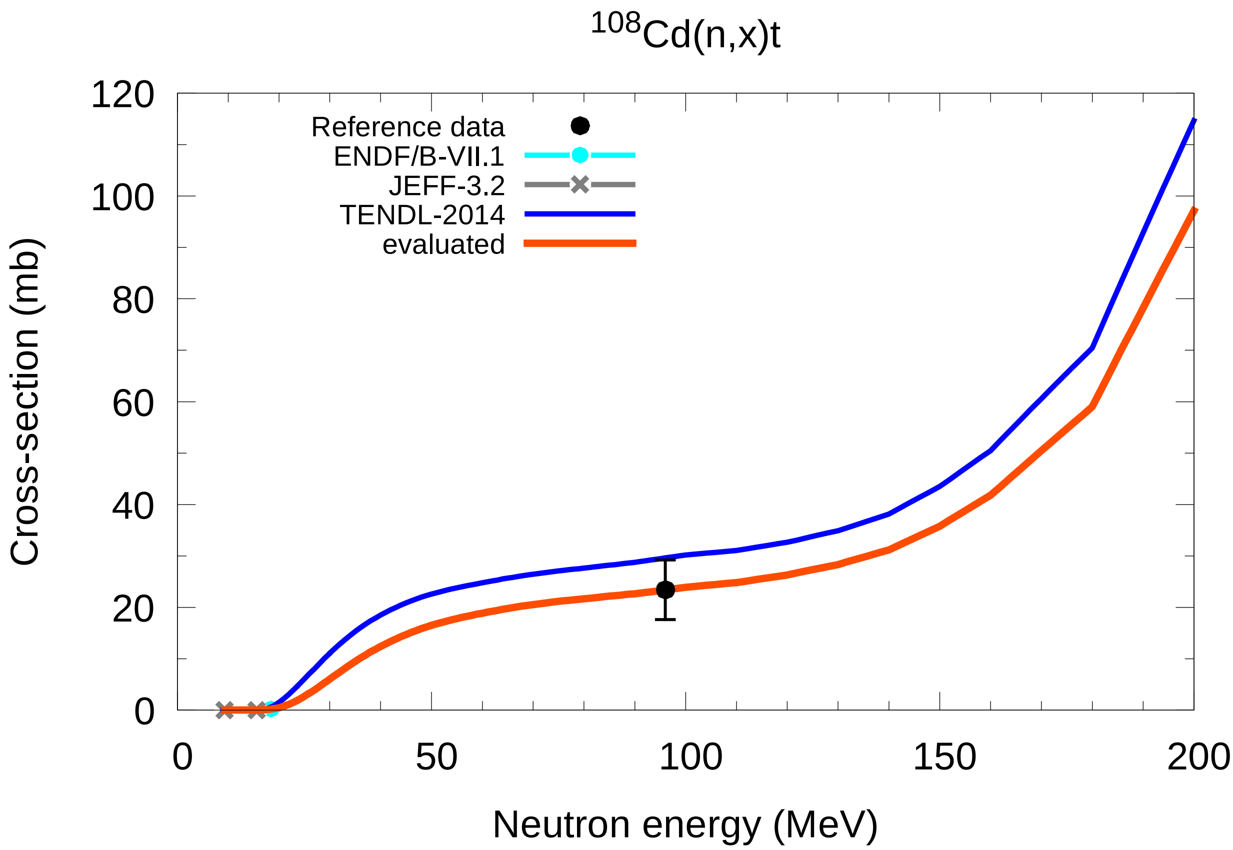
0
50
100
150
200



108Cd(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
0
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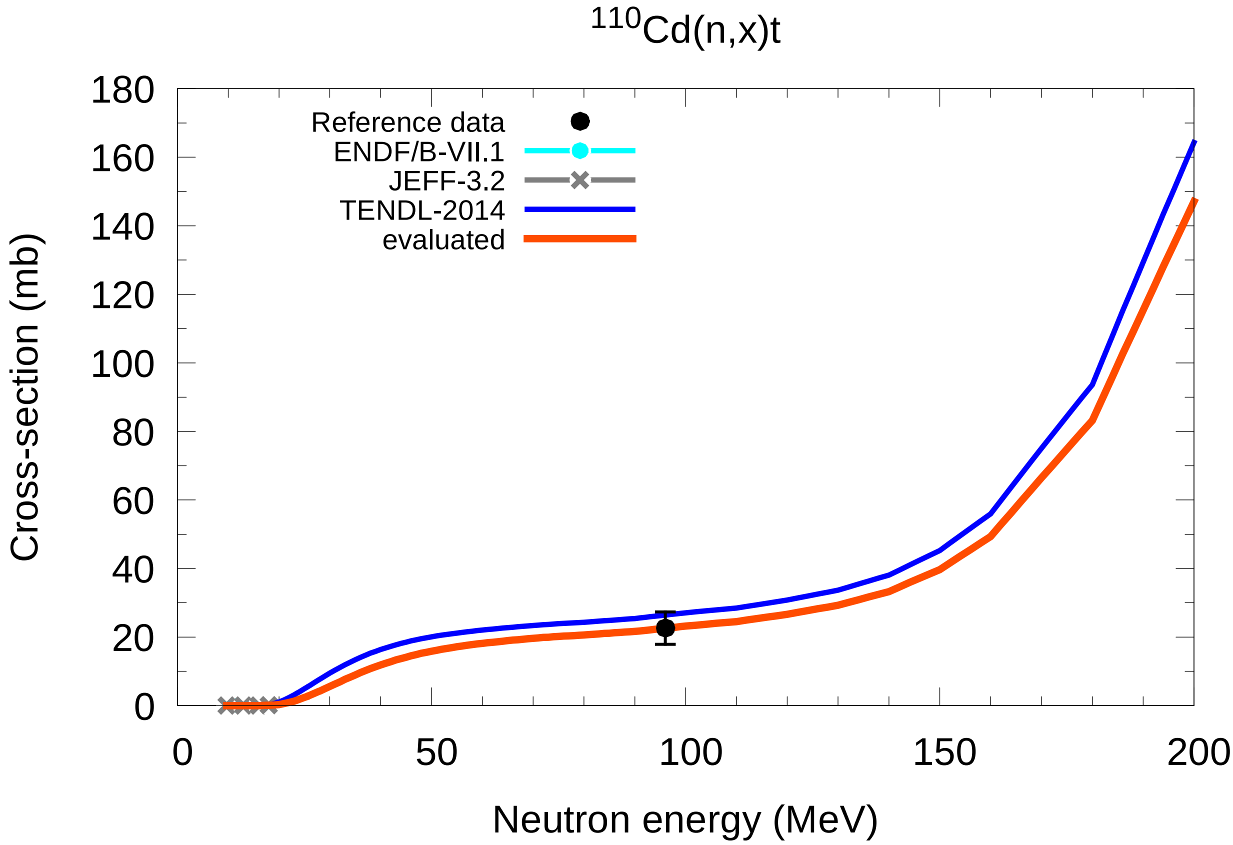
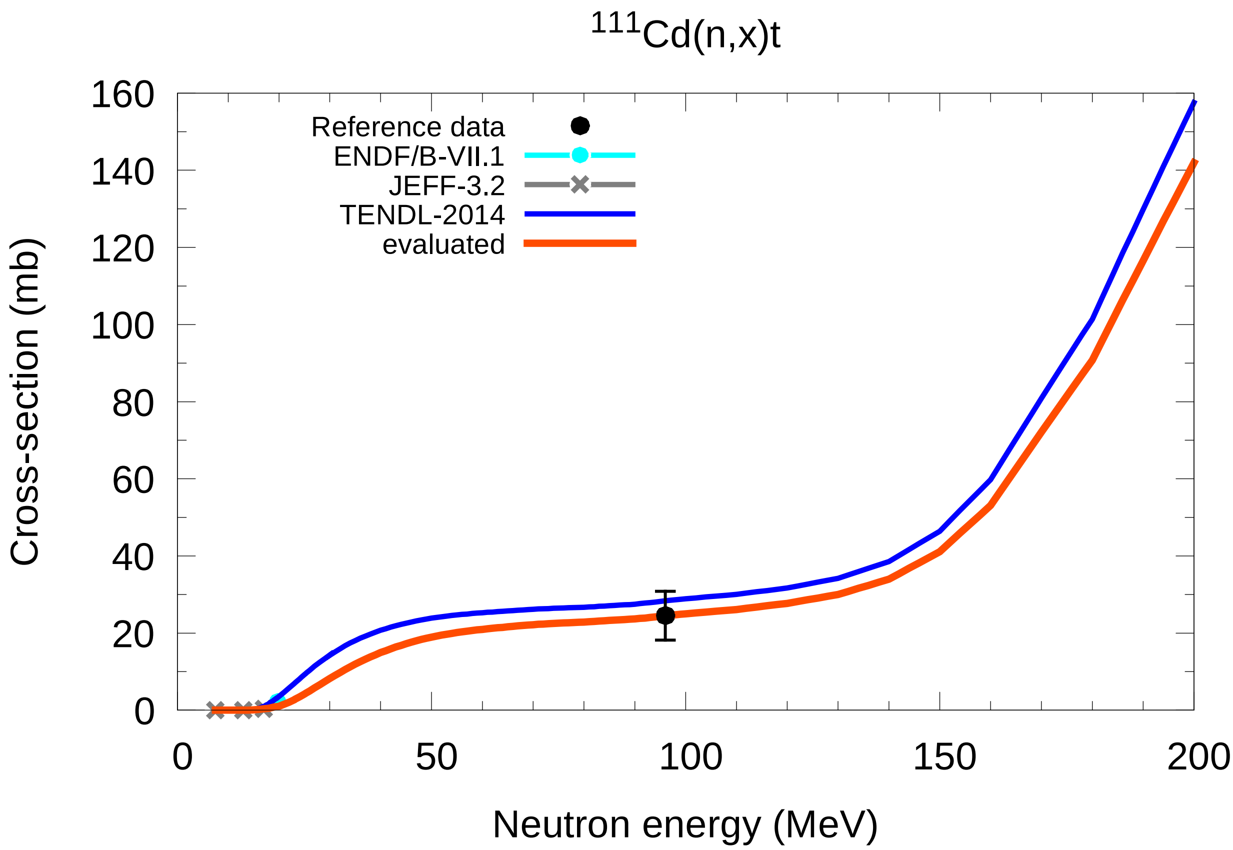
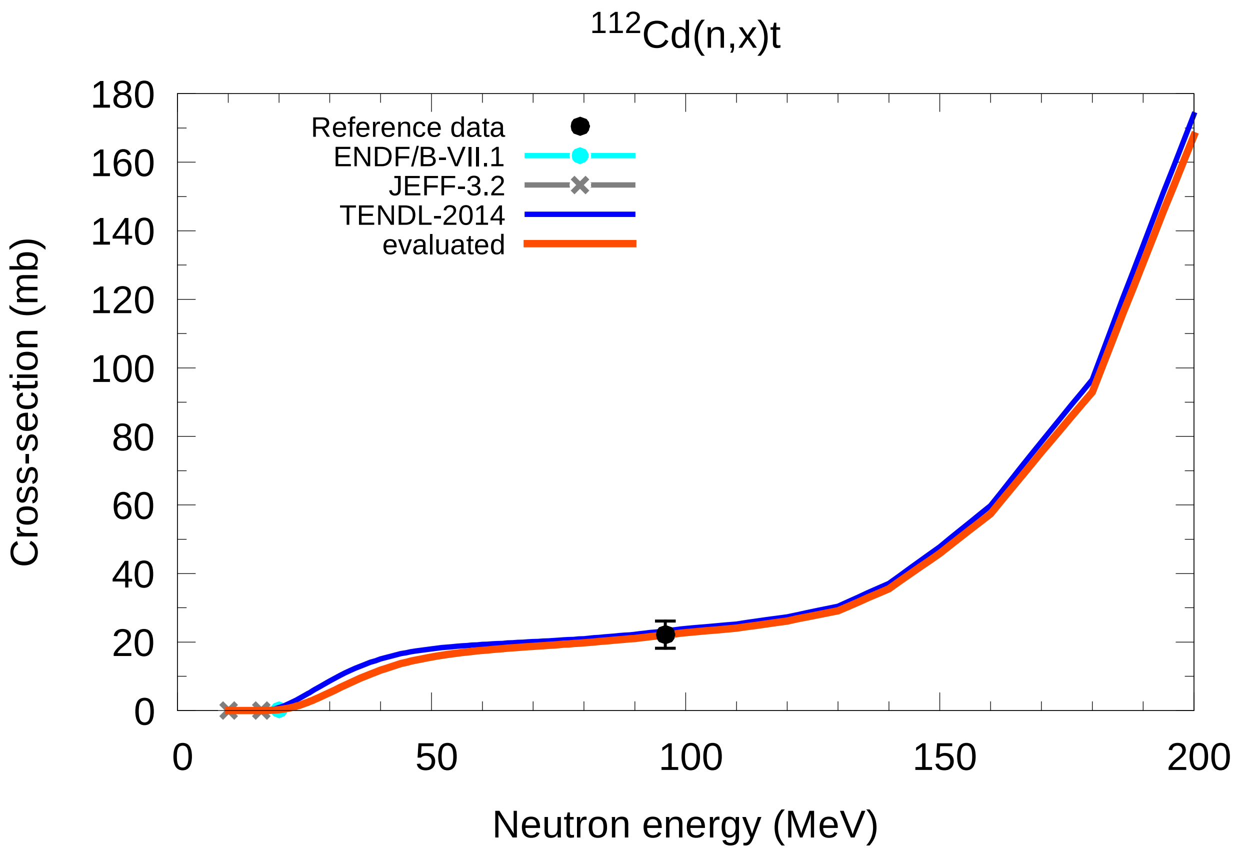
100
150
200



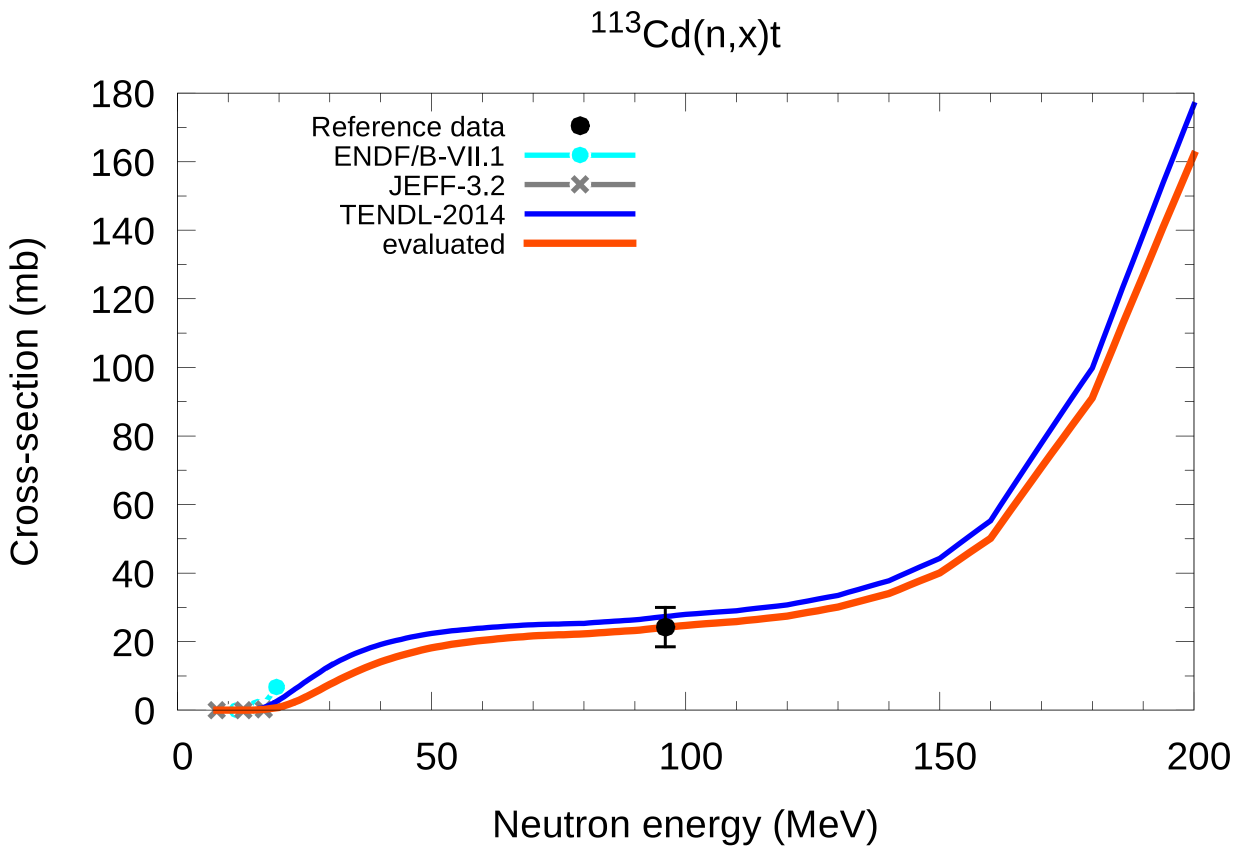
$^{110}Cd(n,x)t$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
0
50
100
150
200



$^{111}Cd(n,x)t$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
0
50
100
150
200



^{112}Cd(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
0
50
100
150
200



^{113}Cd(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
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140
160
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0
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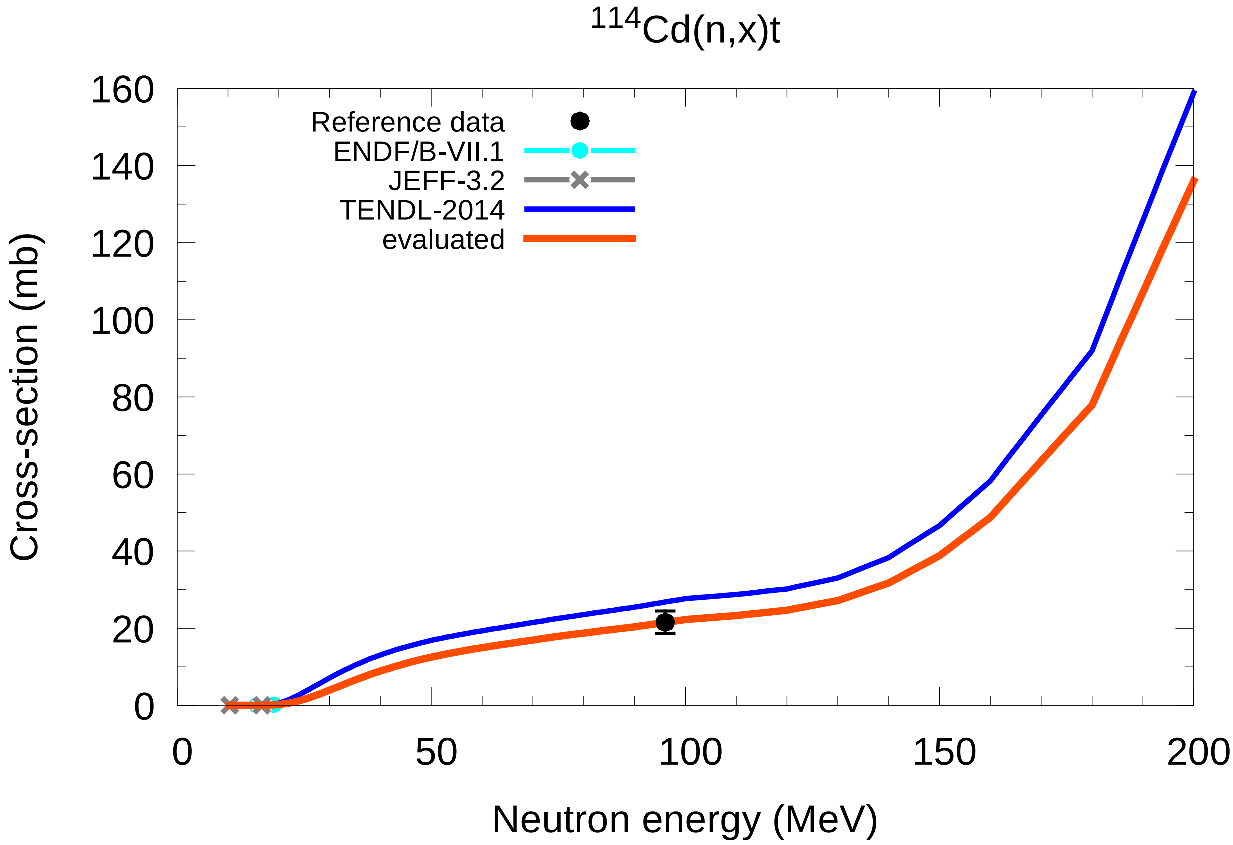
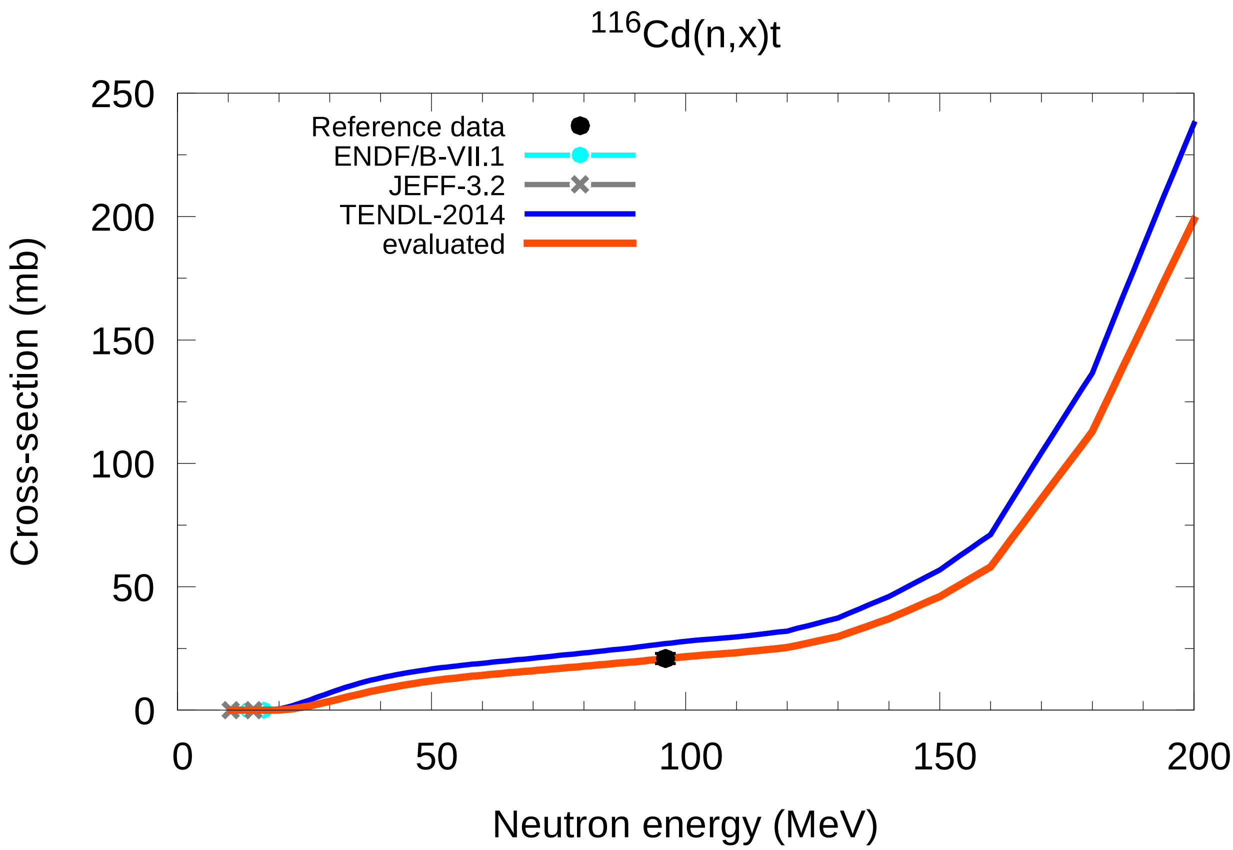
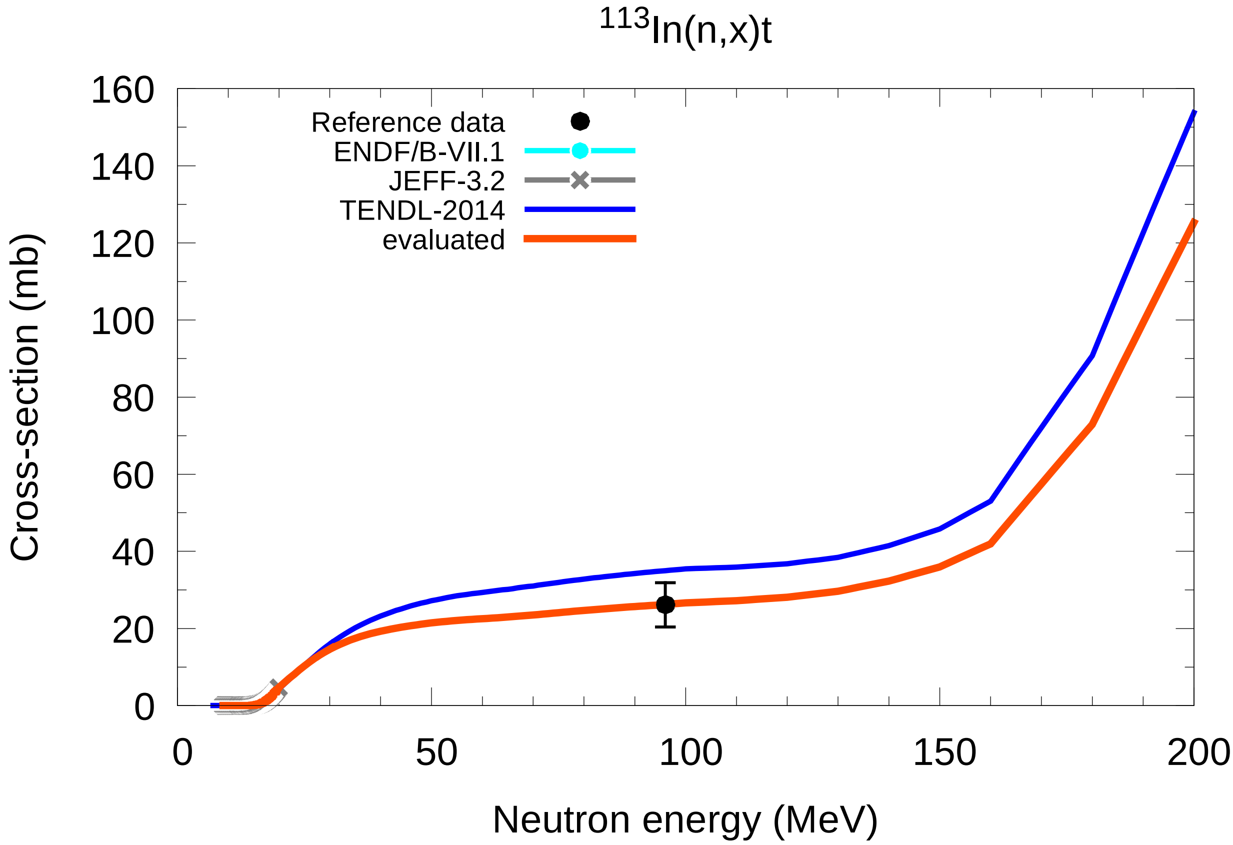
150
200



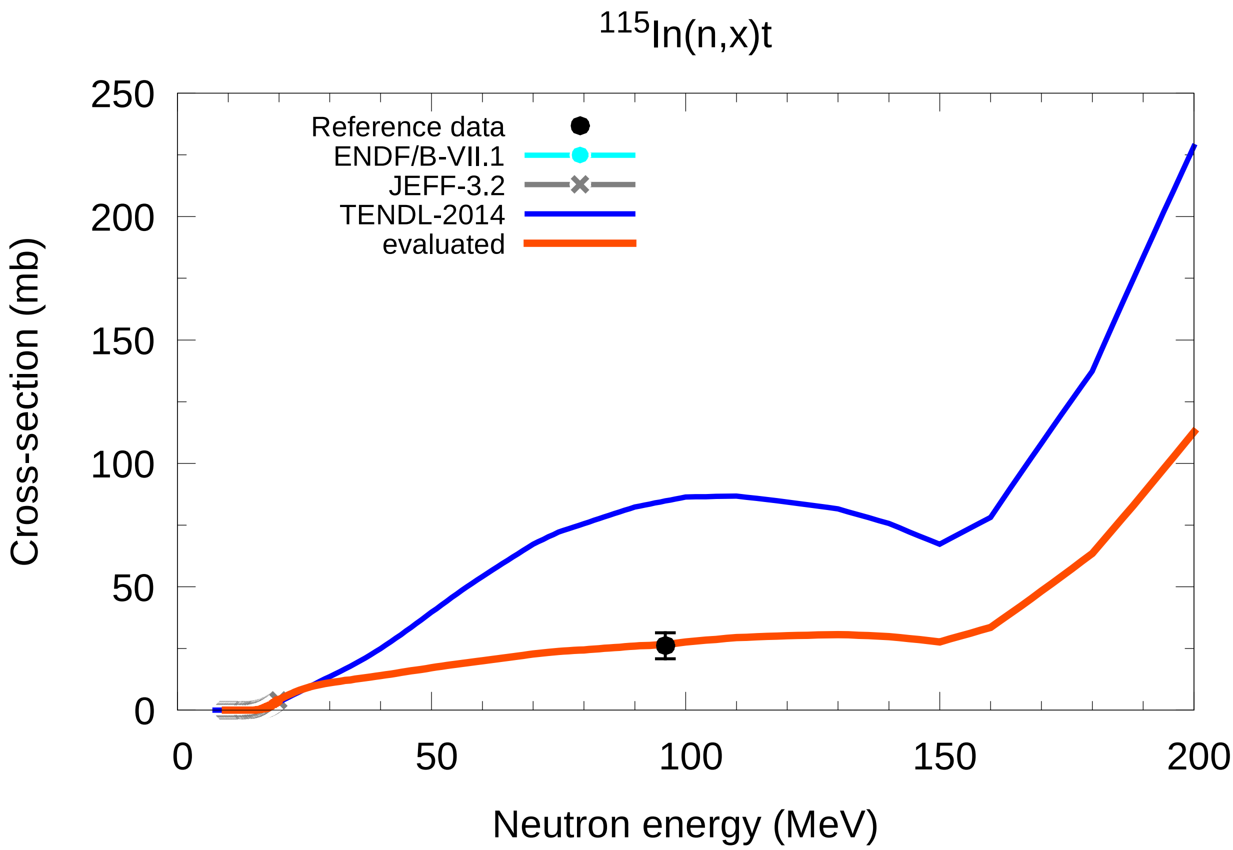
^{114}Cd(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
0
50
100
150
200



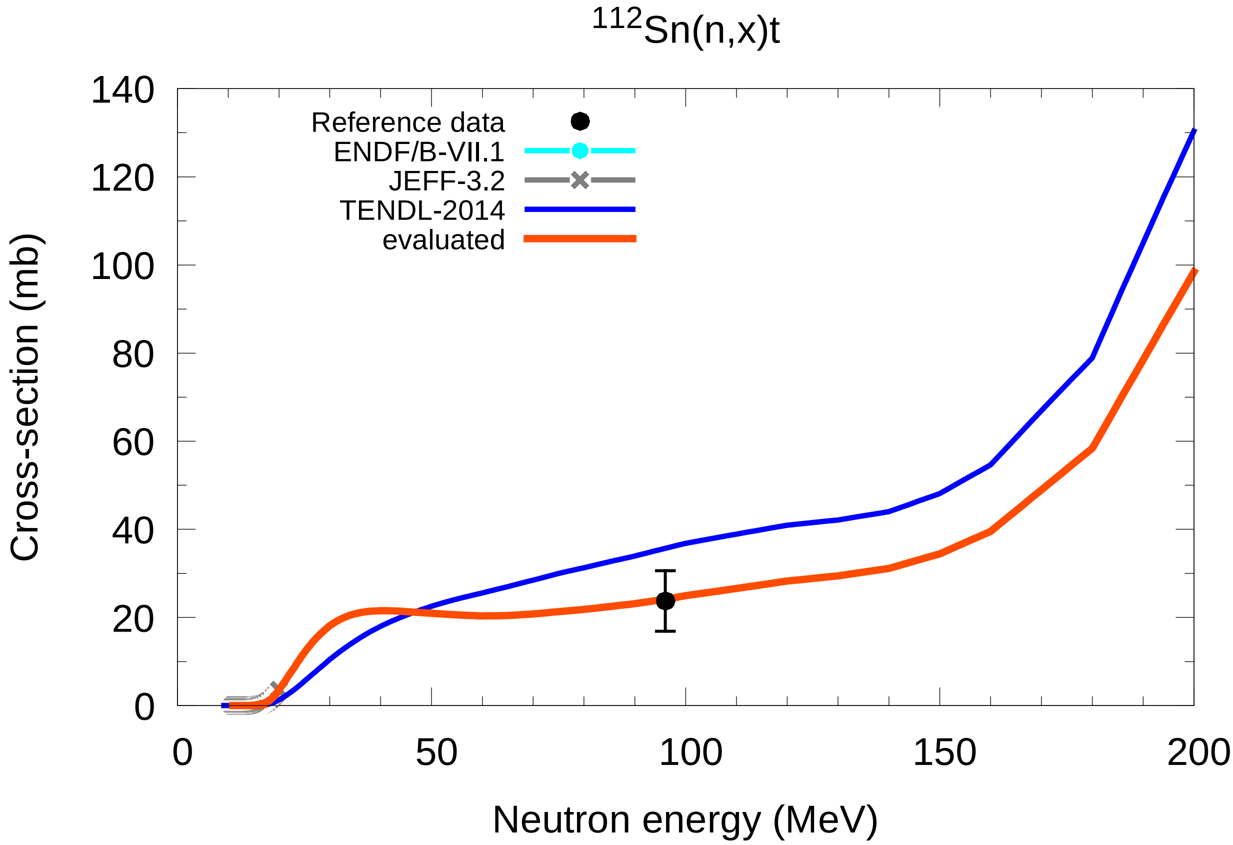
^{116}Cd(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
0
50
100
150
200



^{113}In(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
0
50
100
150
200



^{115}In(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
0
50
100
150
200



^{112}Sn(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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40
60
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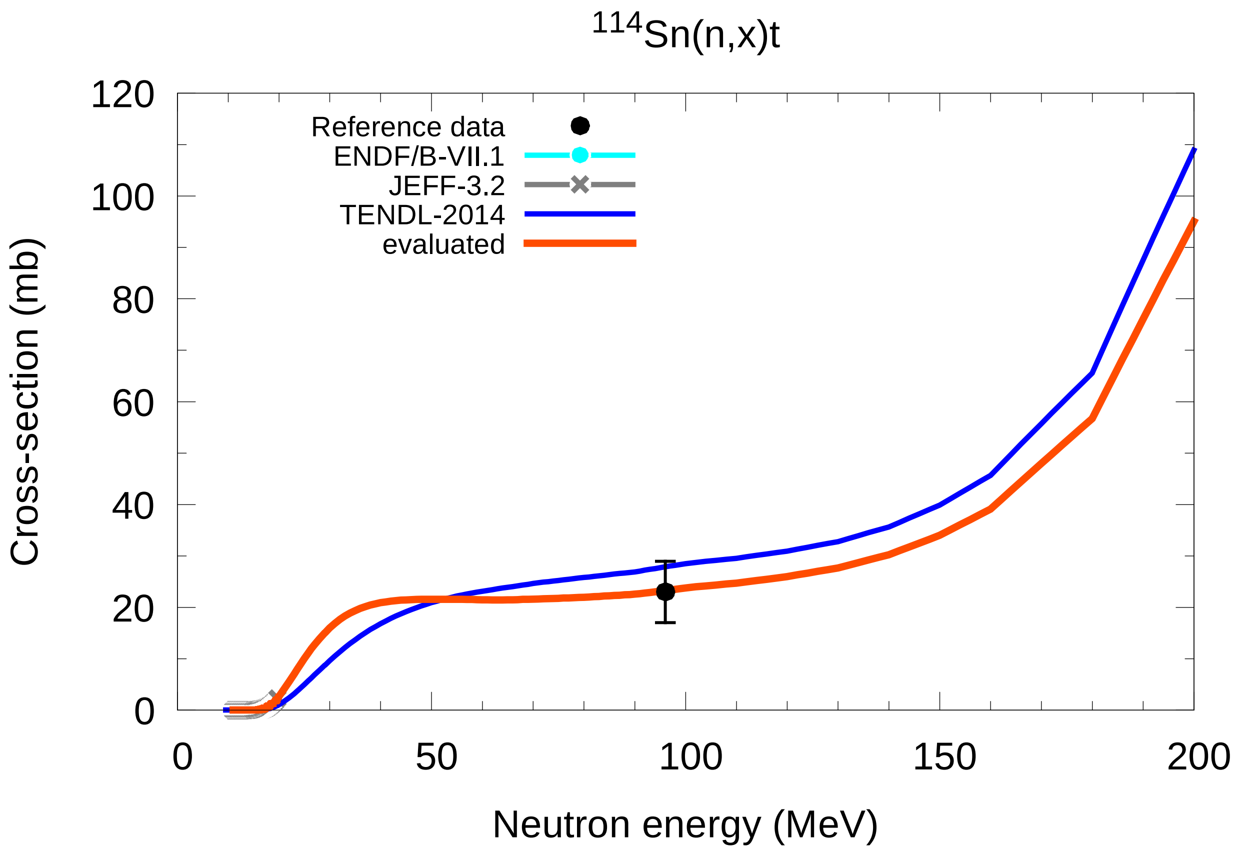
100
120
140
0
50
100
150
200



^{114}Sn(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
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120
0
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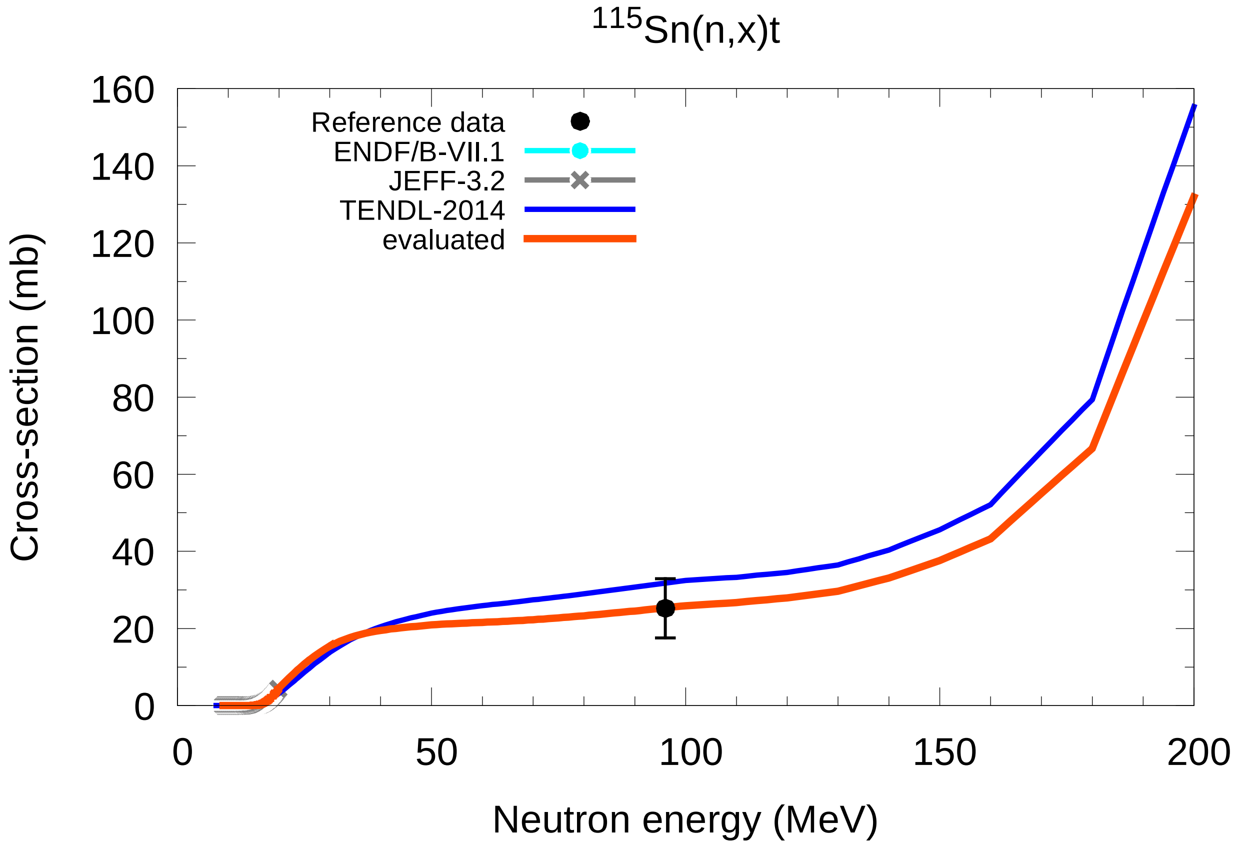
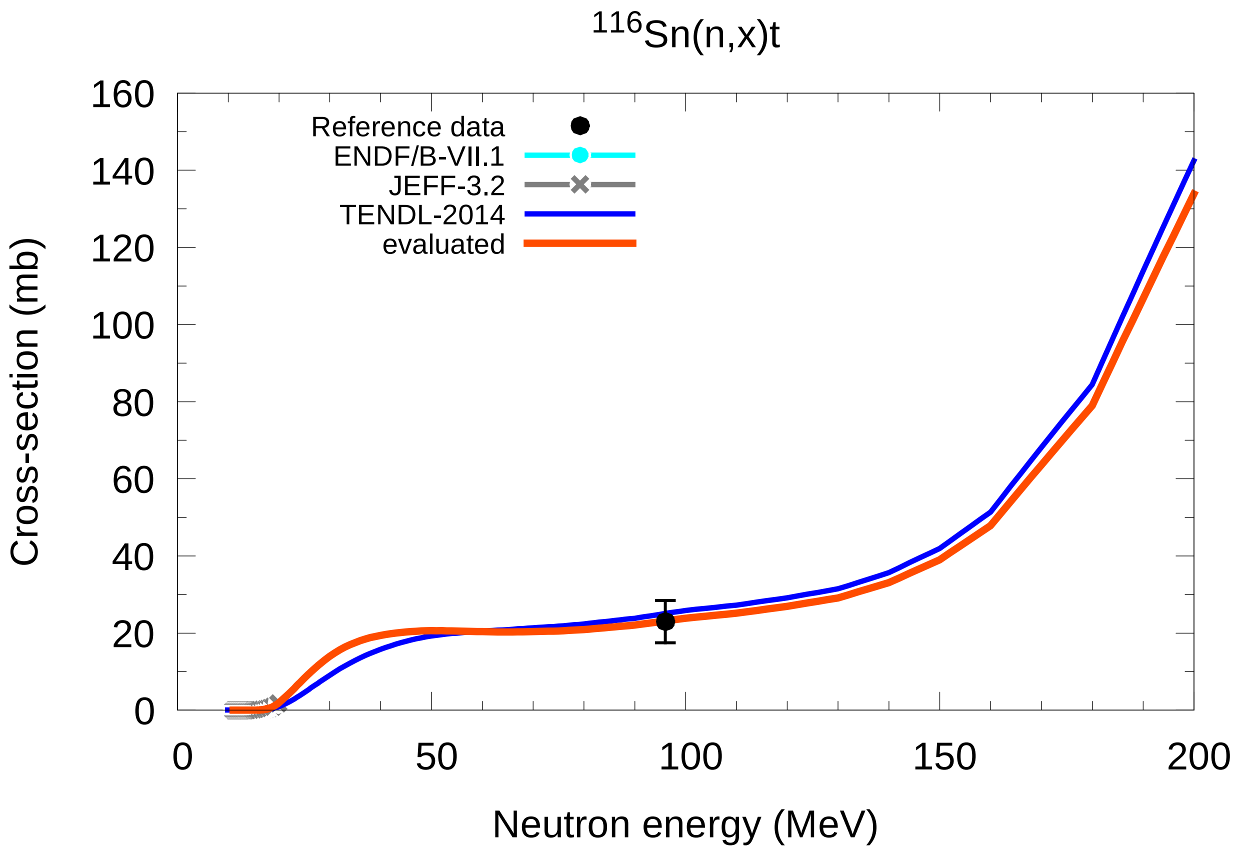
150
200


115Sn(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
0
50
100
150
200


116Sn(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
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120
140
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0
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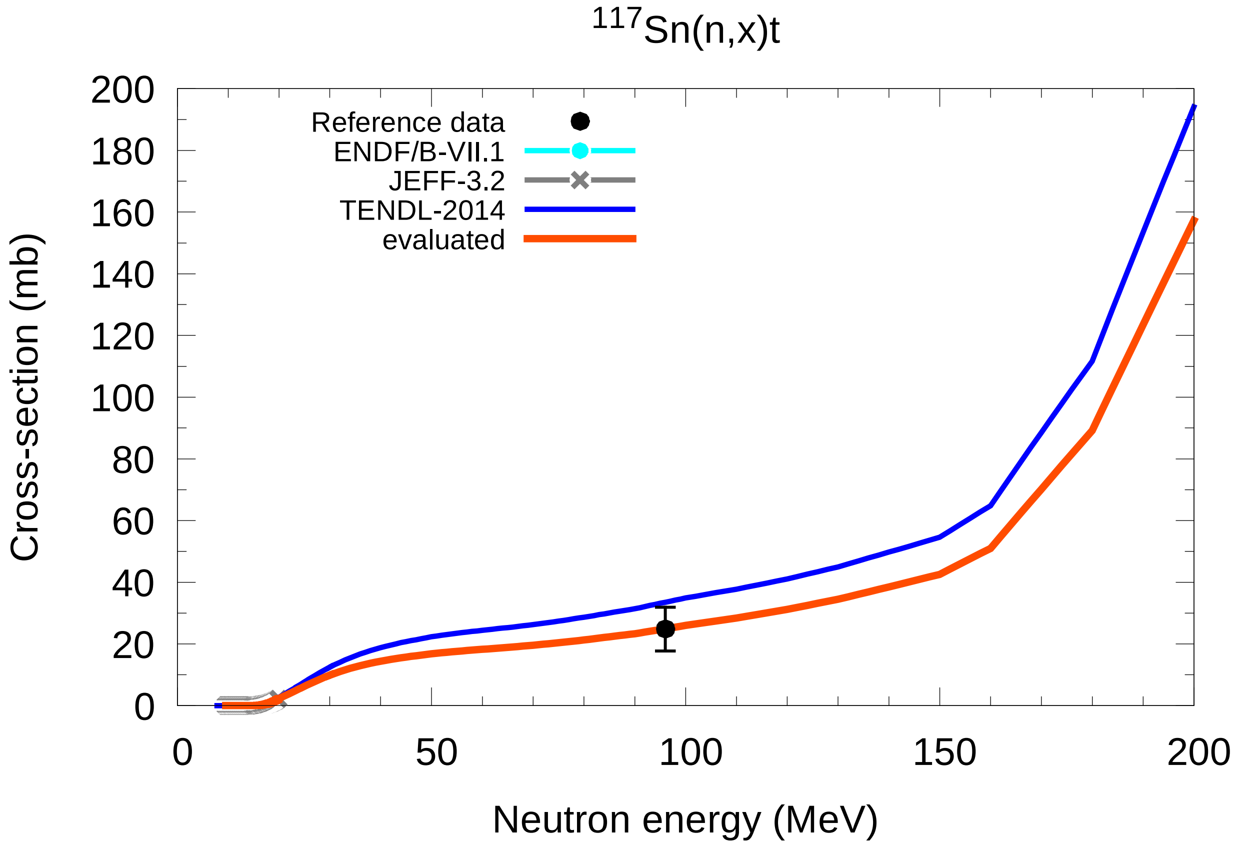
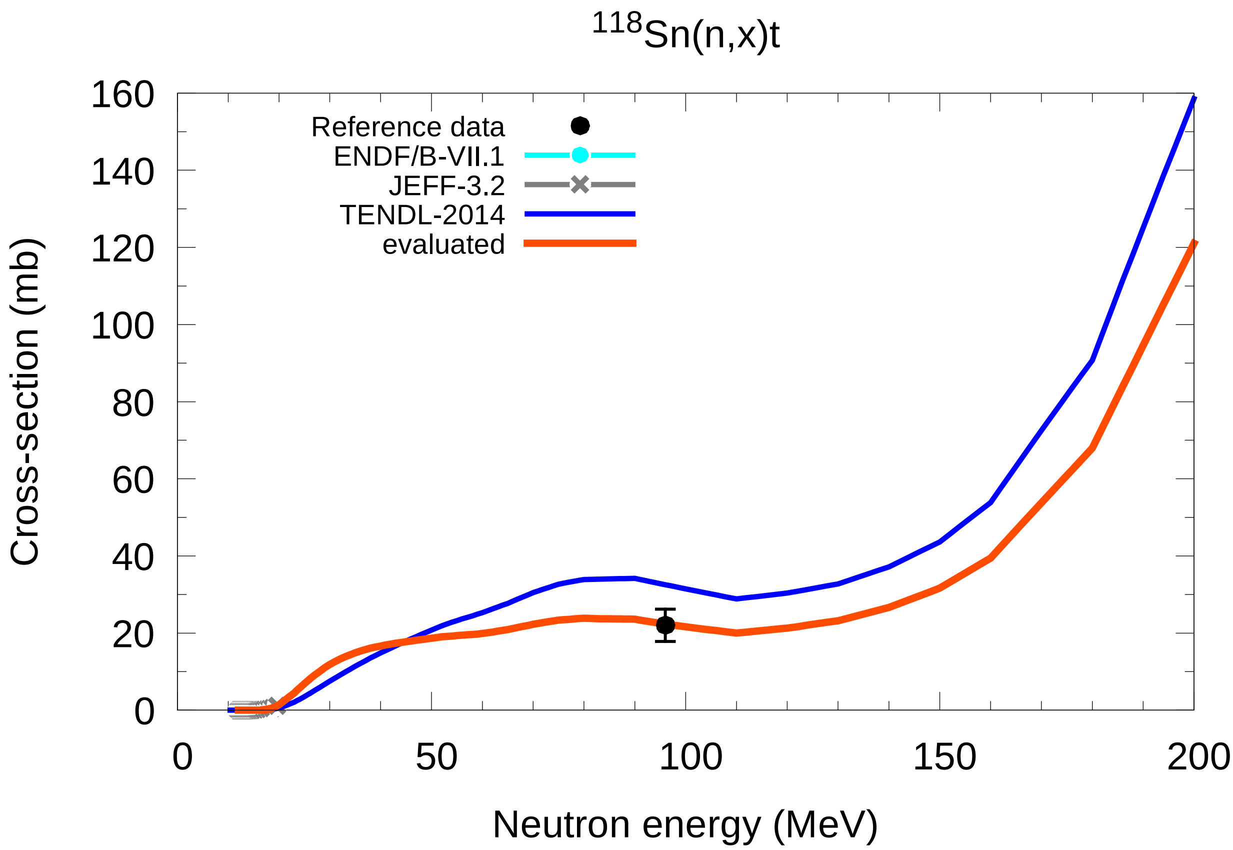
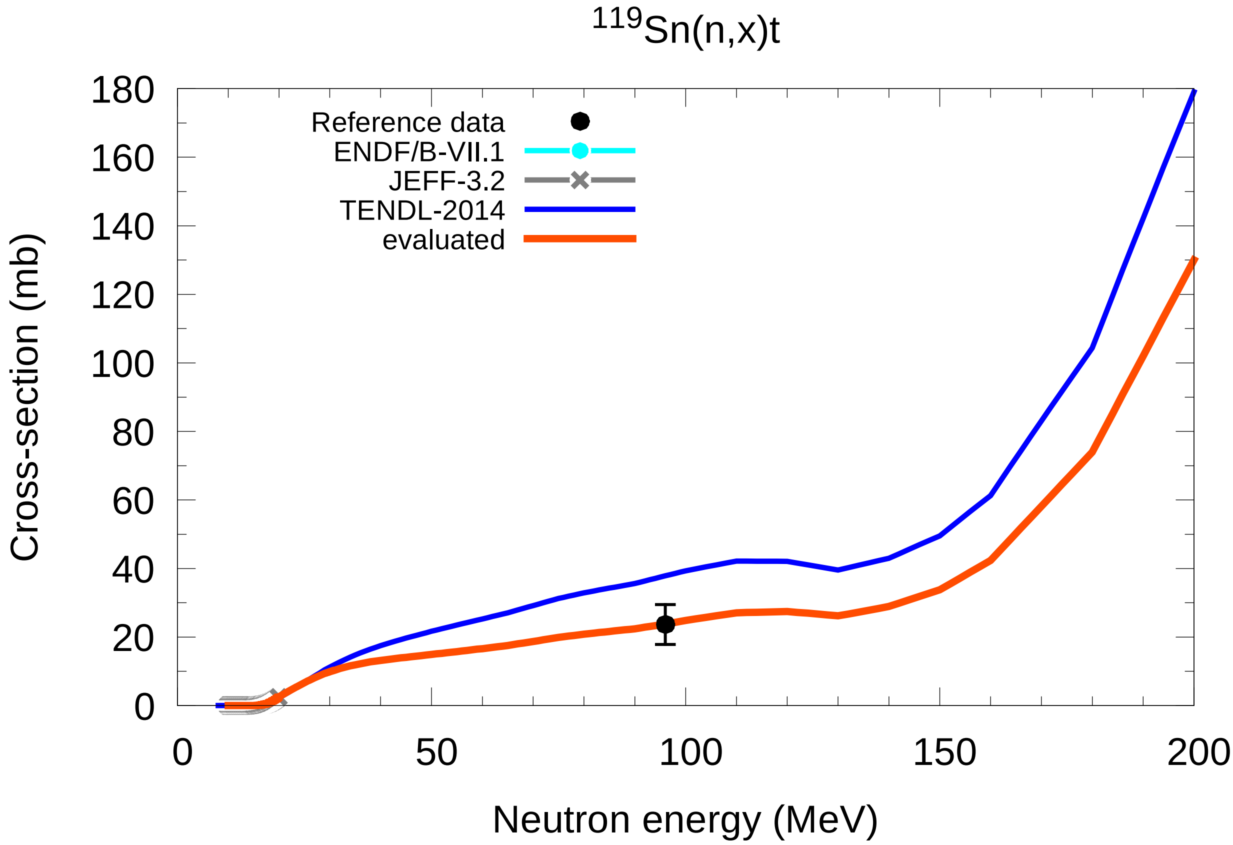
100
150
200



$^{117}Sn(n,x)t$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200



$^{118}Sn(n,x)t$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
0
50
100
150
200



^{119}Sn(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
0
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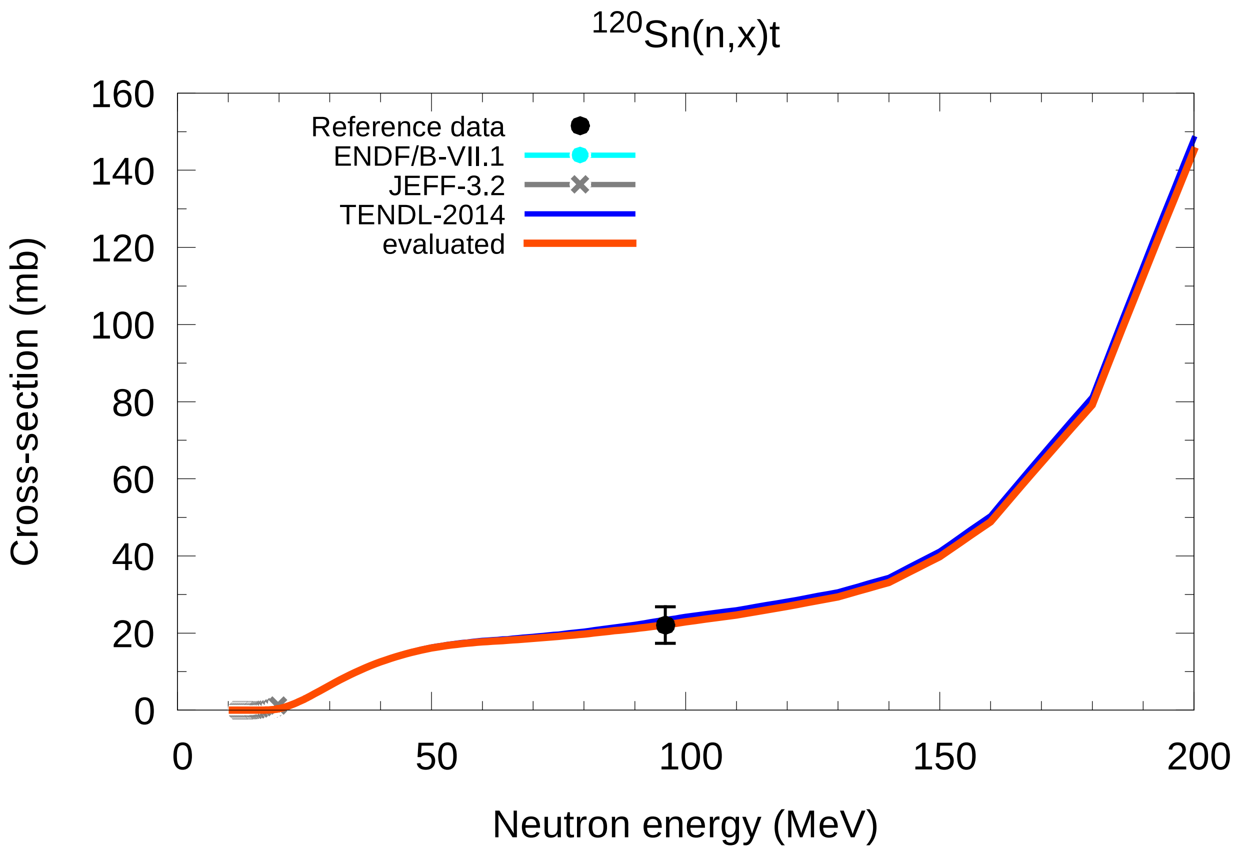
100
150
200



^{120}Sn(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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40
60
80
100
120
140
160
0
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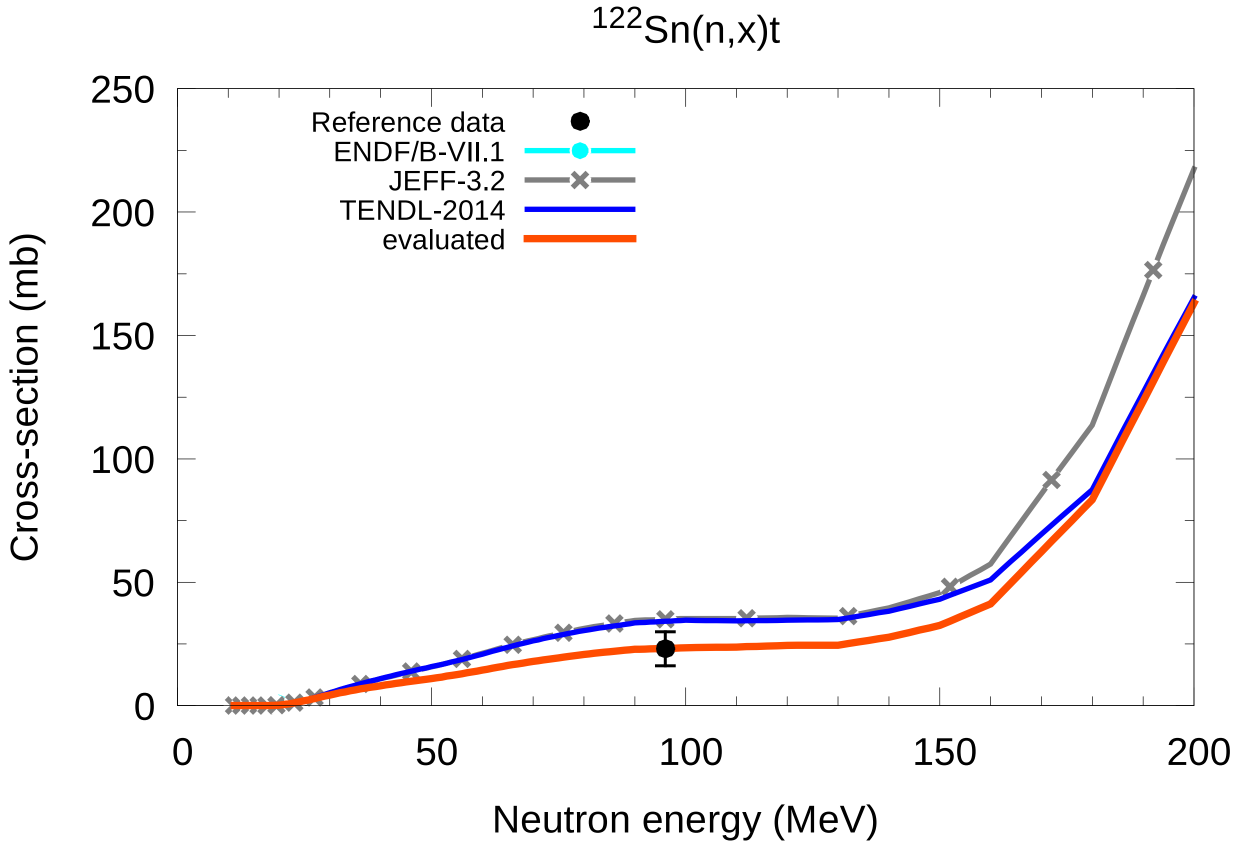
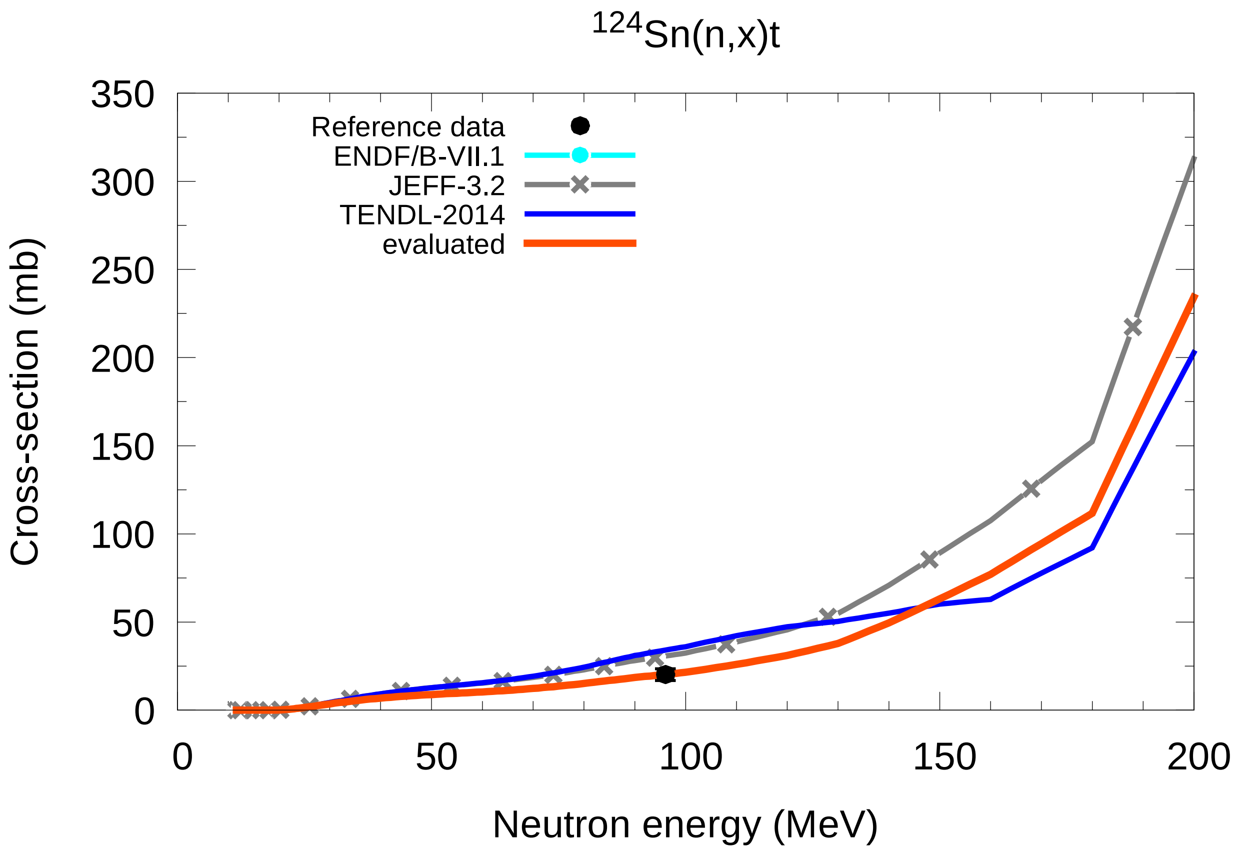
100
150
200



^{122}Sn(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



^{124}Sn(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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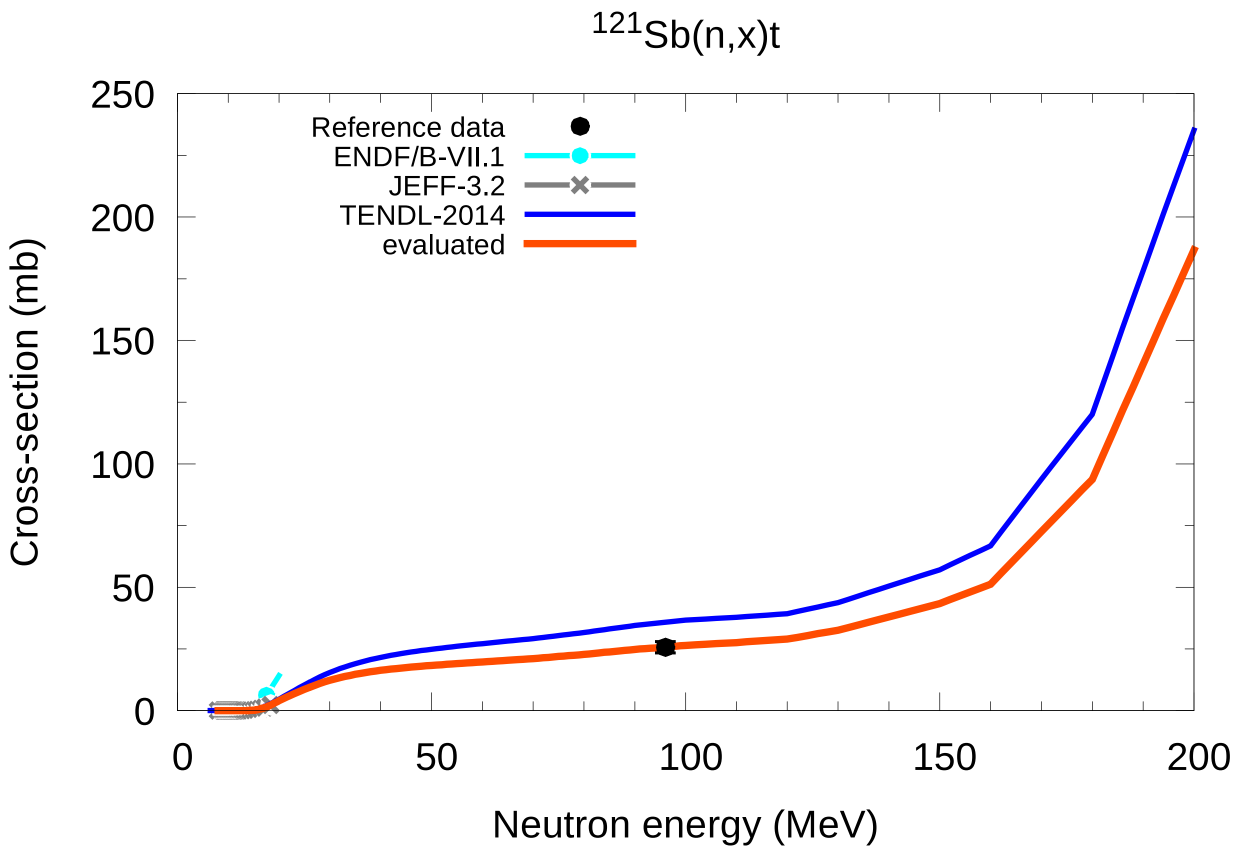
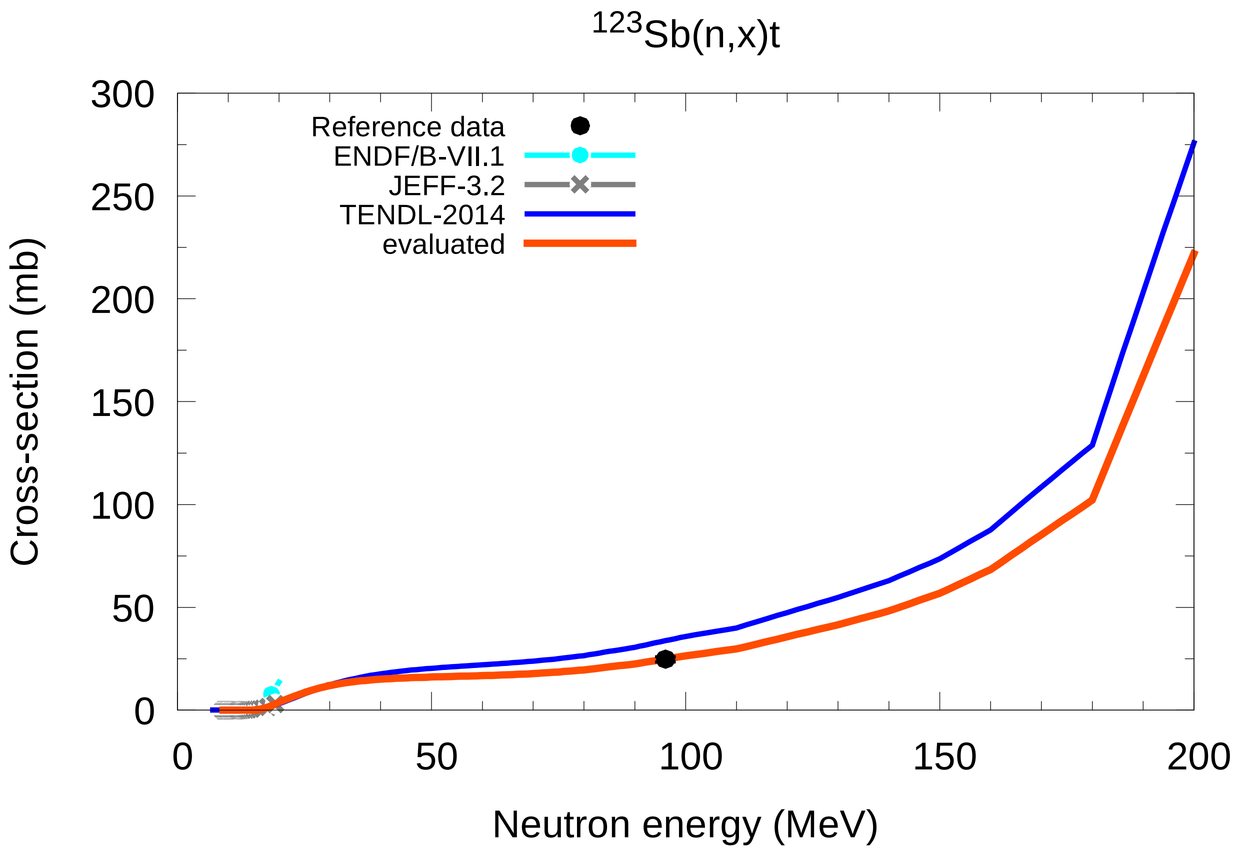
100
150
200
250
300
350



^{121}Sb(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



^{123}Sb(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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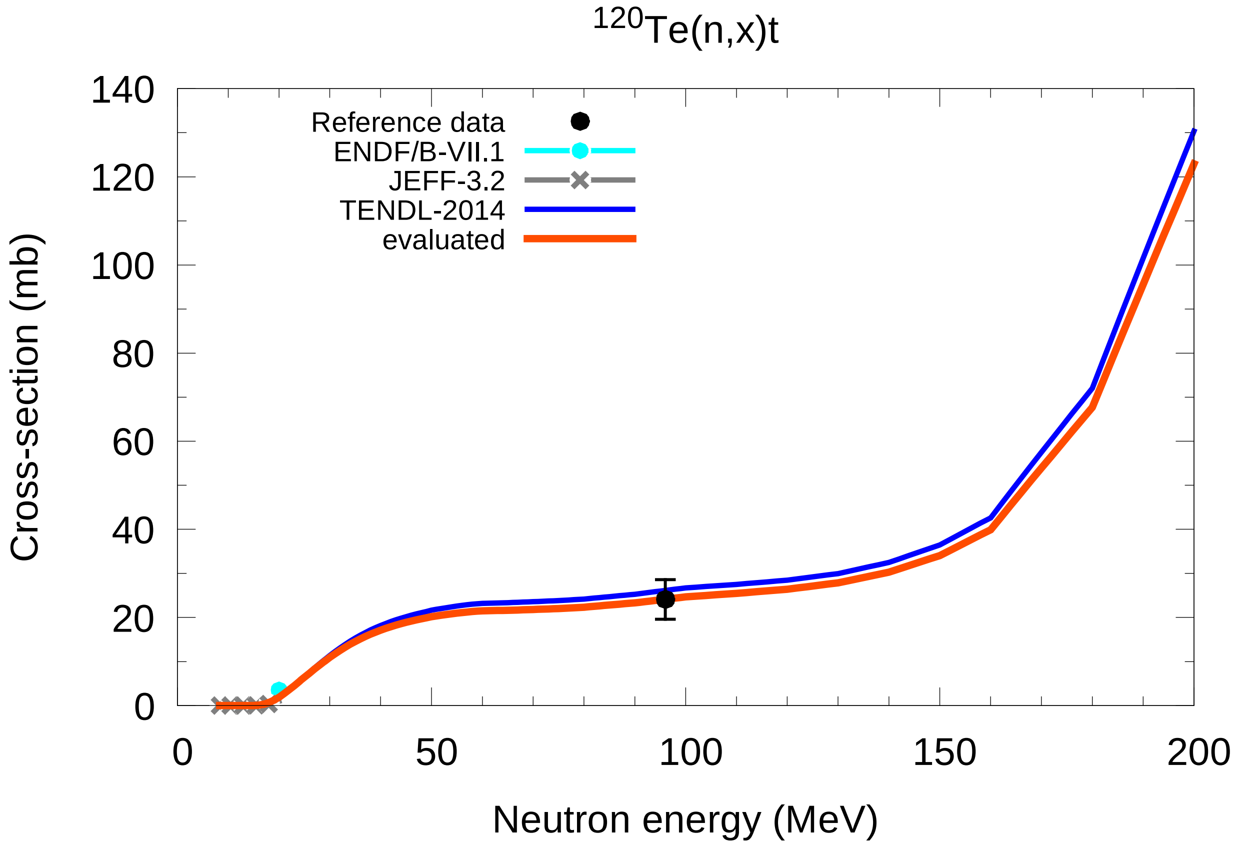
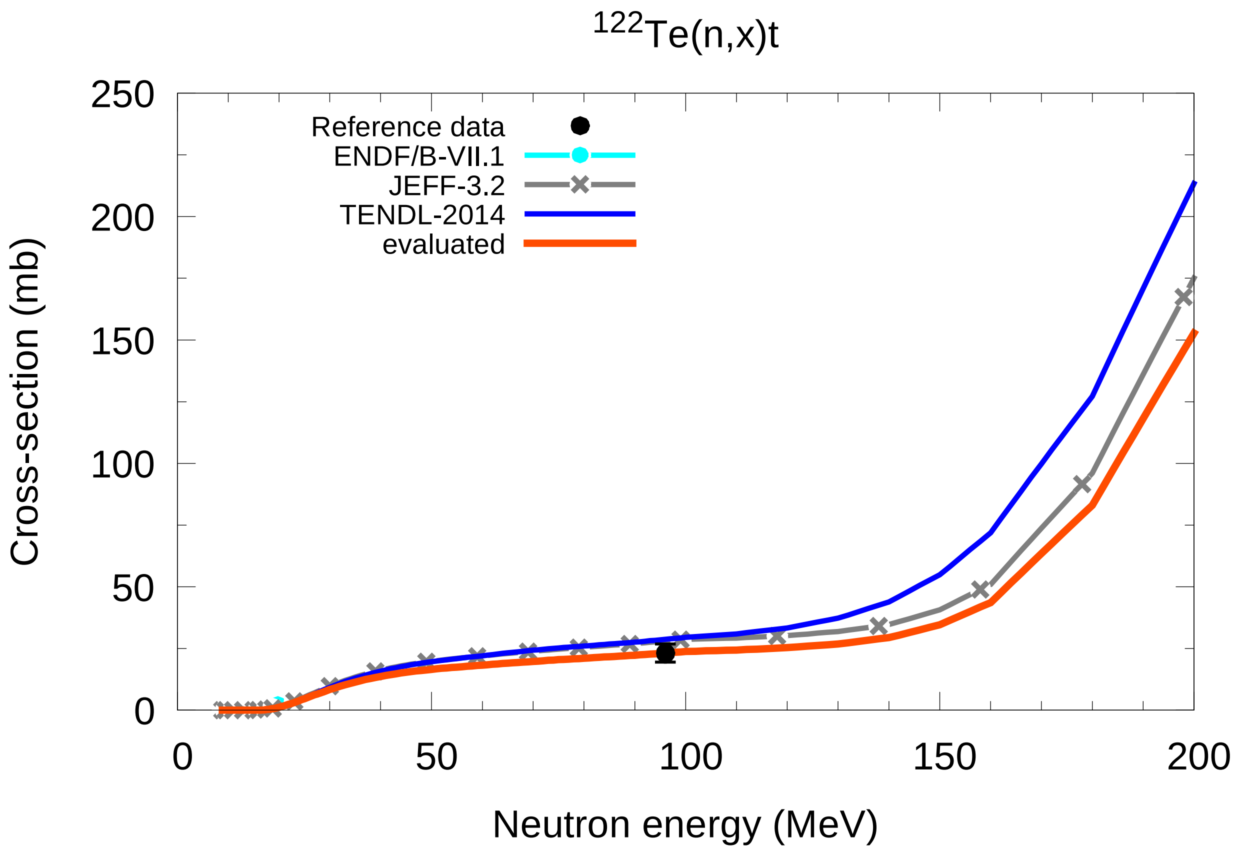
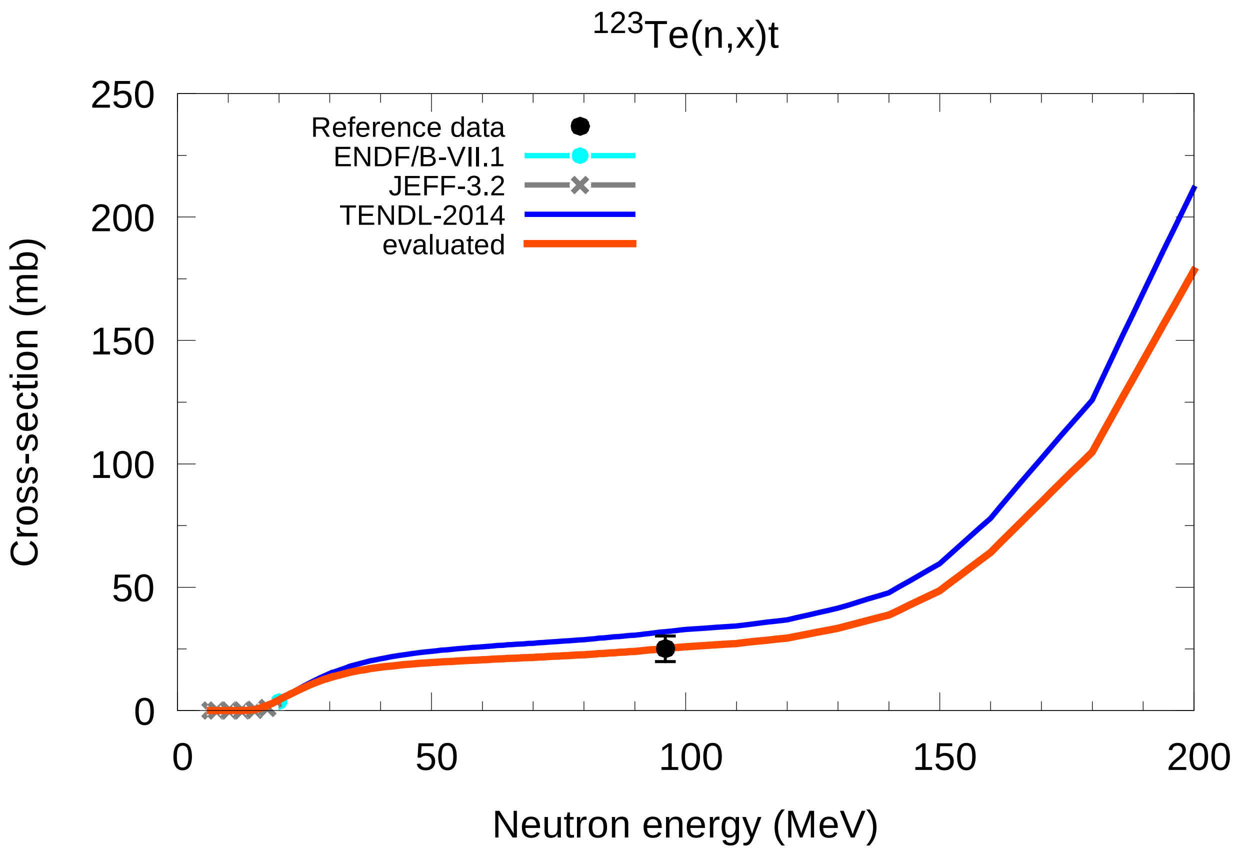
100
150
200
250
300



^{120}Te(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
0
50
100
150
200



^{122}Te(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
0
50
100
150
200


^{123}Te(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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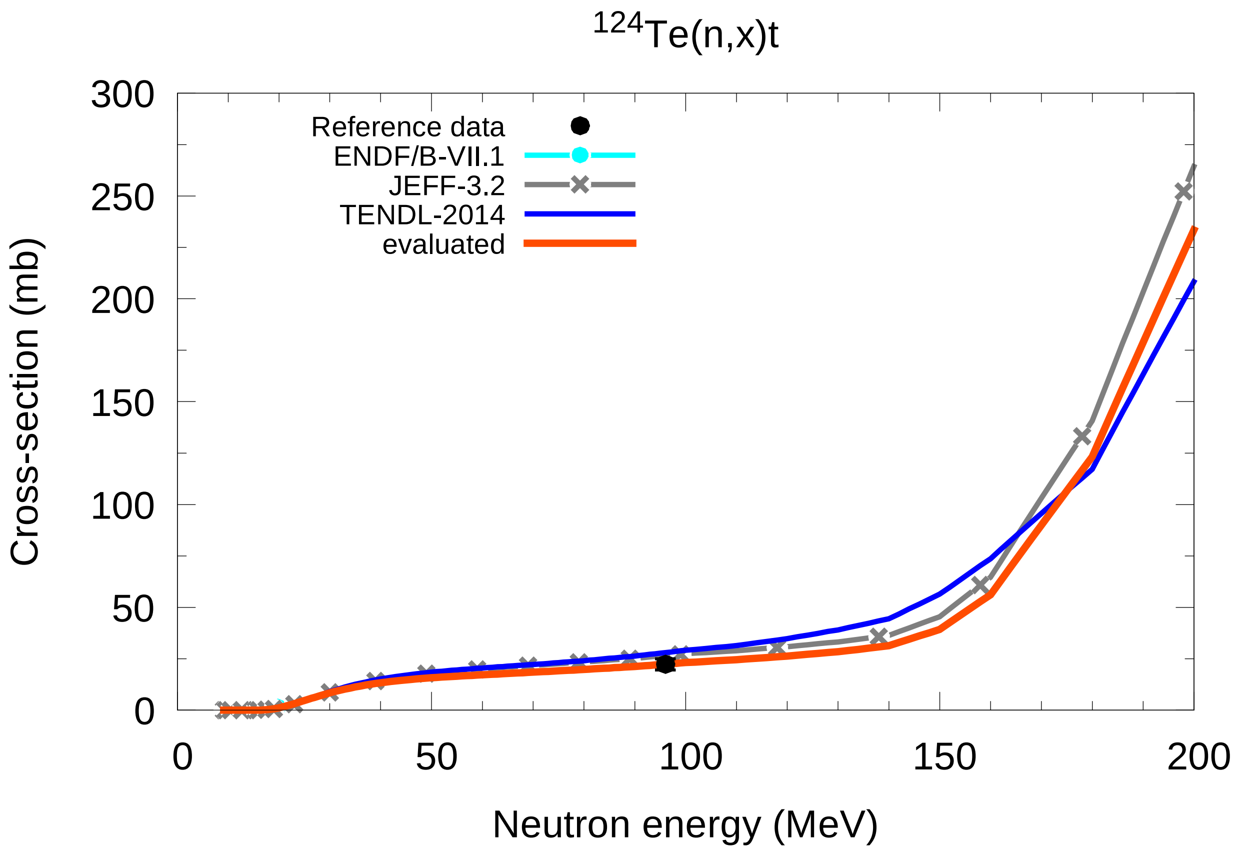
100
150
200
250


^{124}Te(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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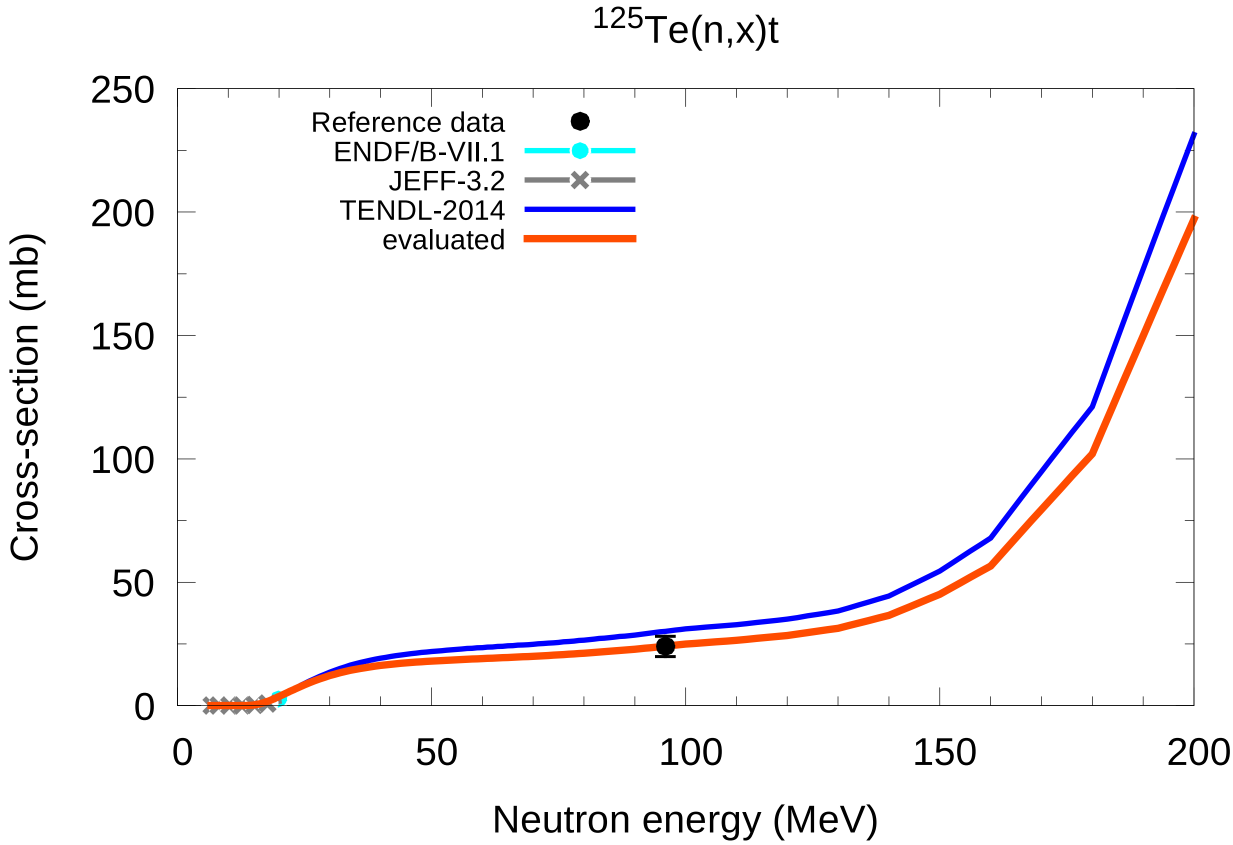
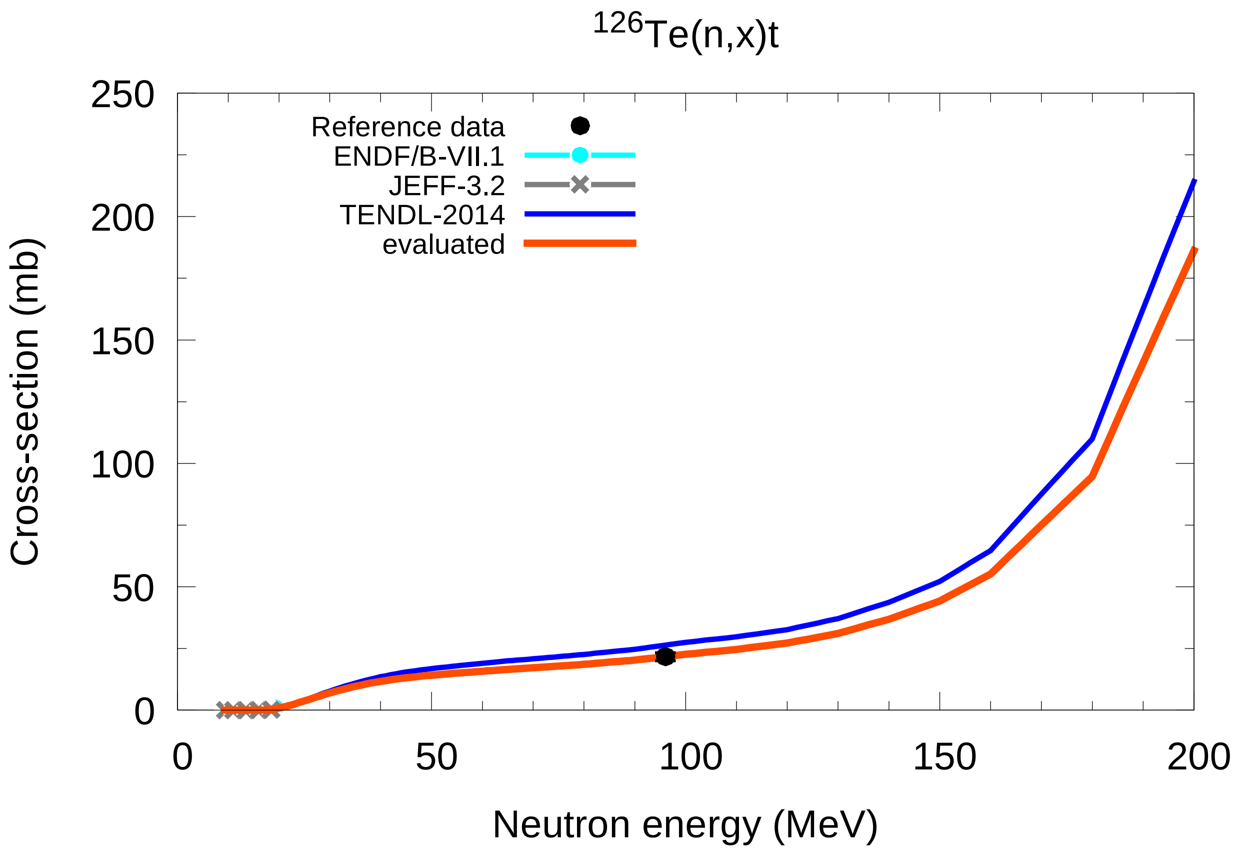
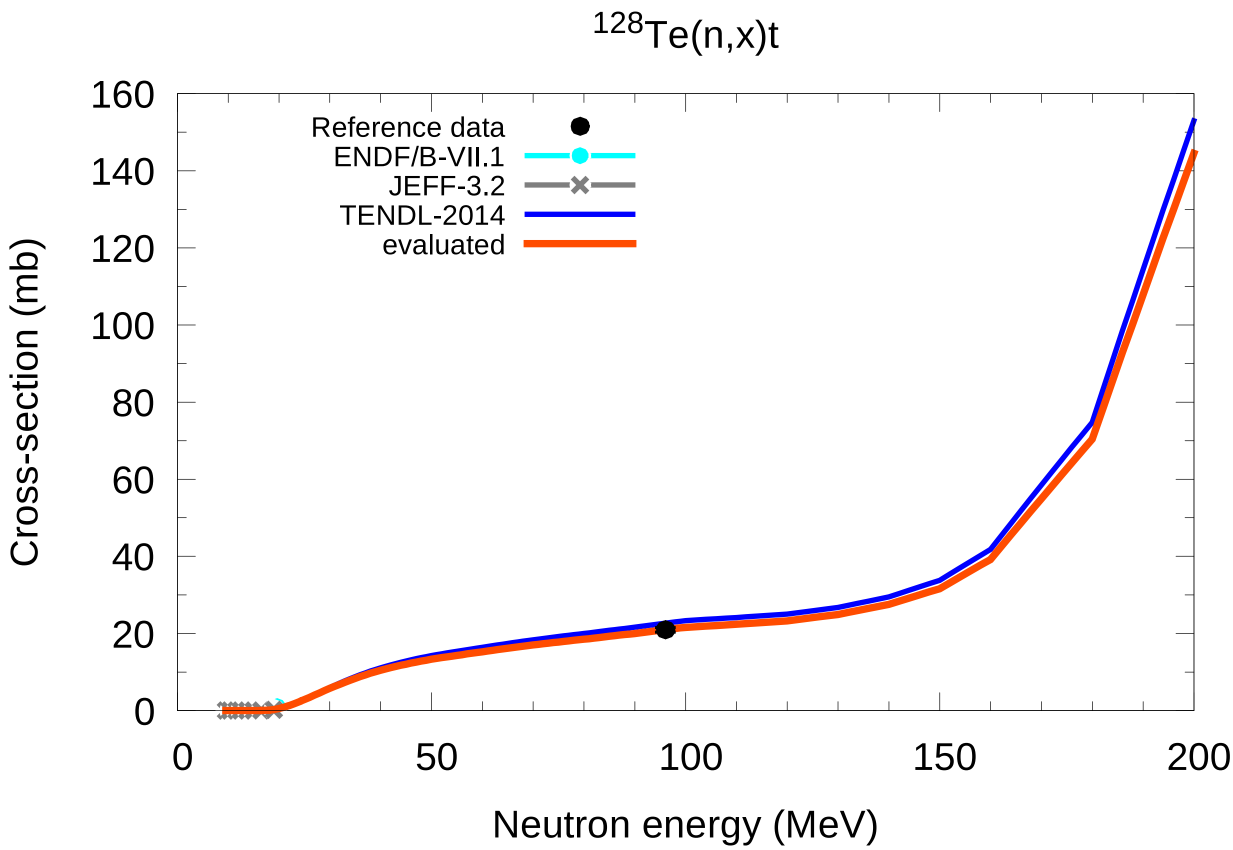
100
150
200
250
300



125Te(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



126Te(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



^{128}Te(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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40
60
80
100
120
140
160
0
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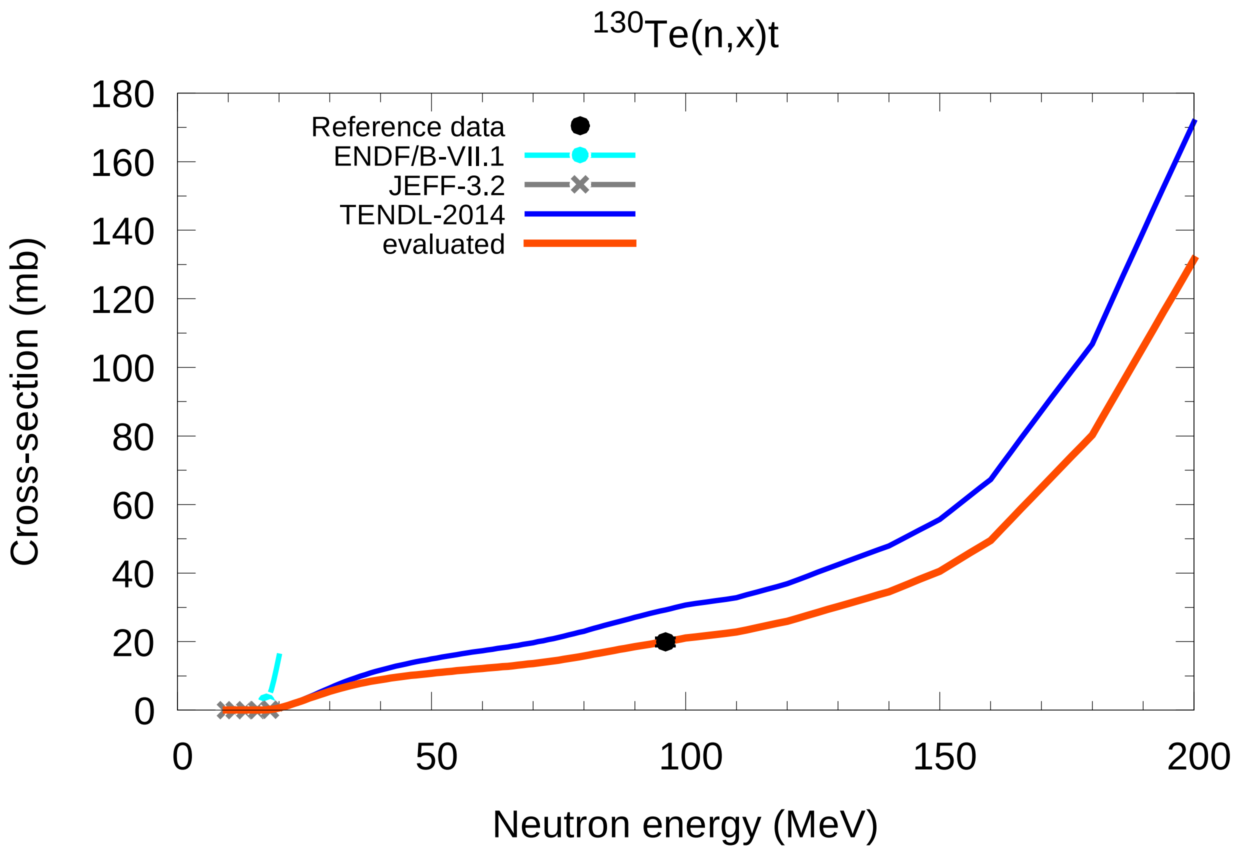
100
150
200



^{130}Te(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
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140
160
180
0
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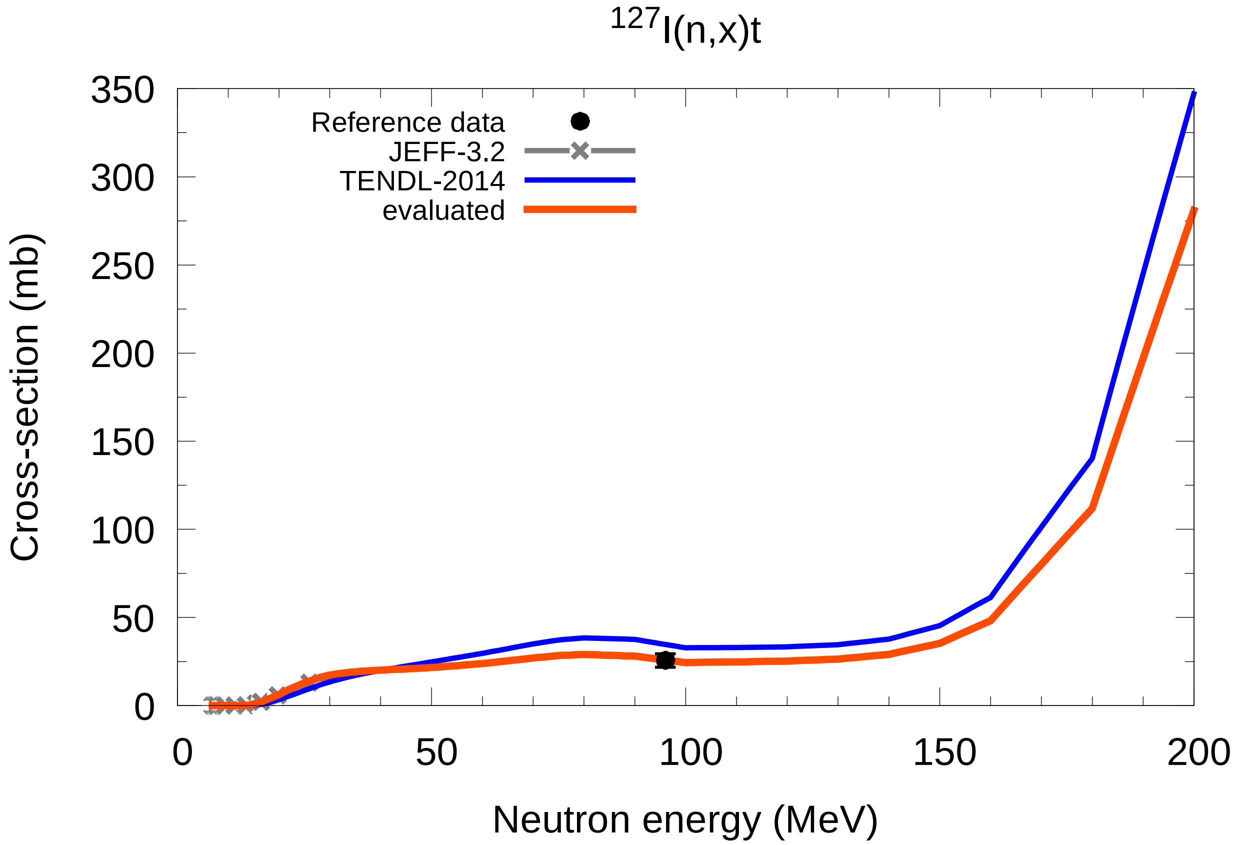
150
200


$^{127}I(n,x)t$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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100
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250
300
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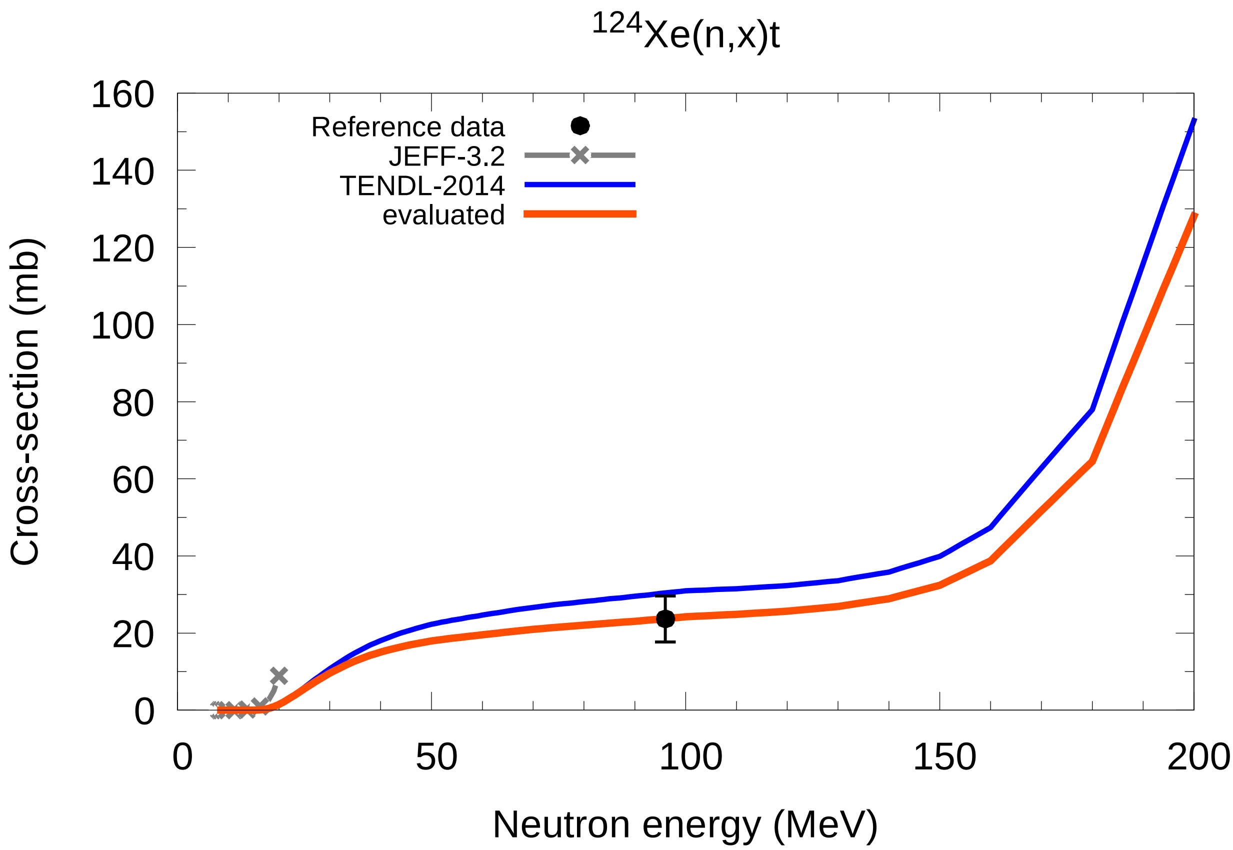
100
150
200


$^{124}Xe(n,x)t$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
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120
140
160
0
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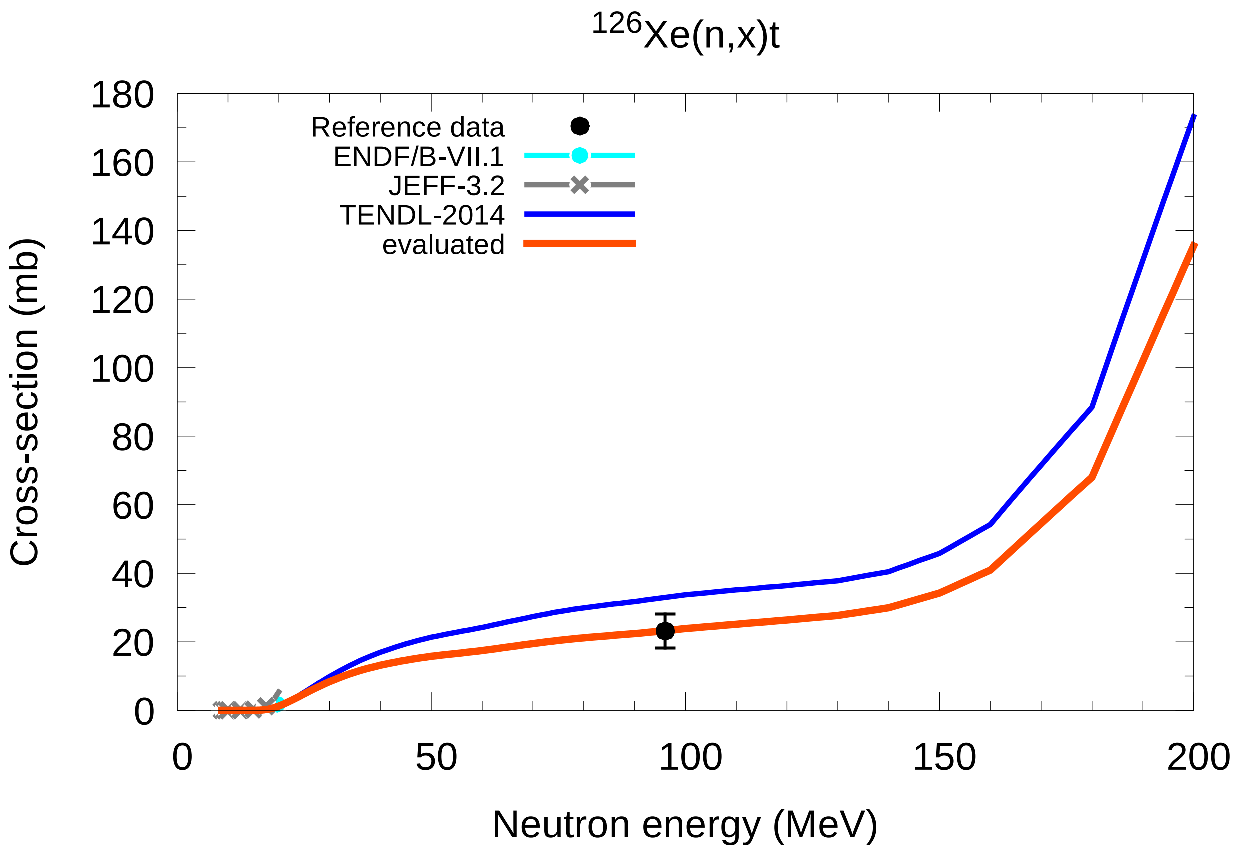
100
150
200



^{126}Xe(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
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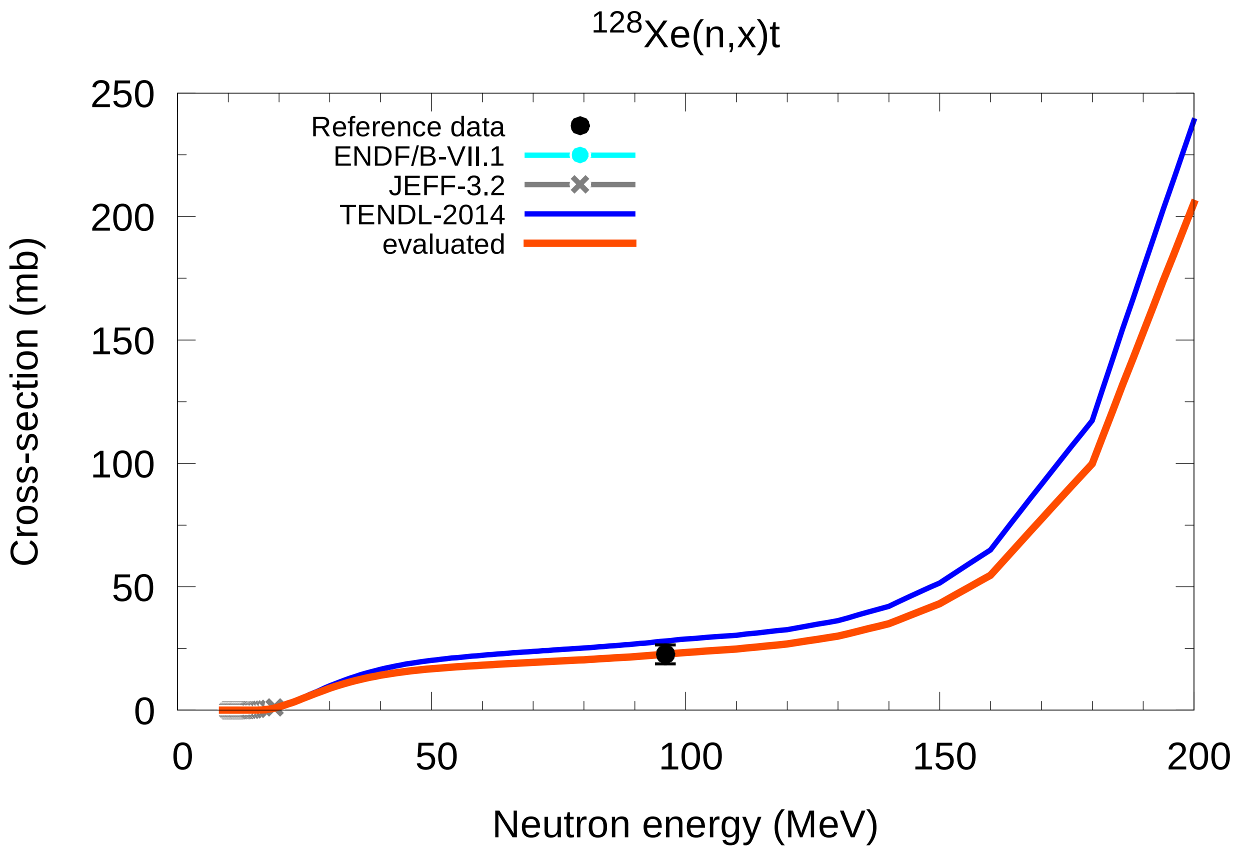
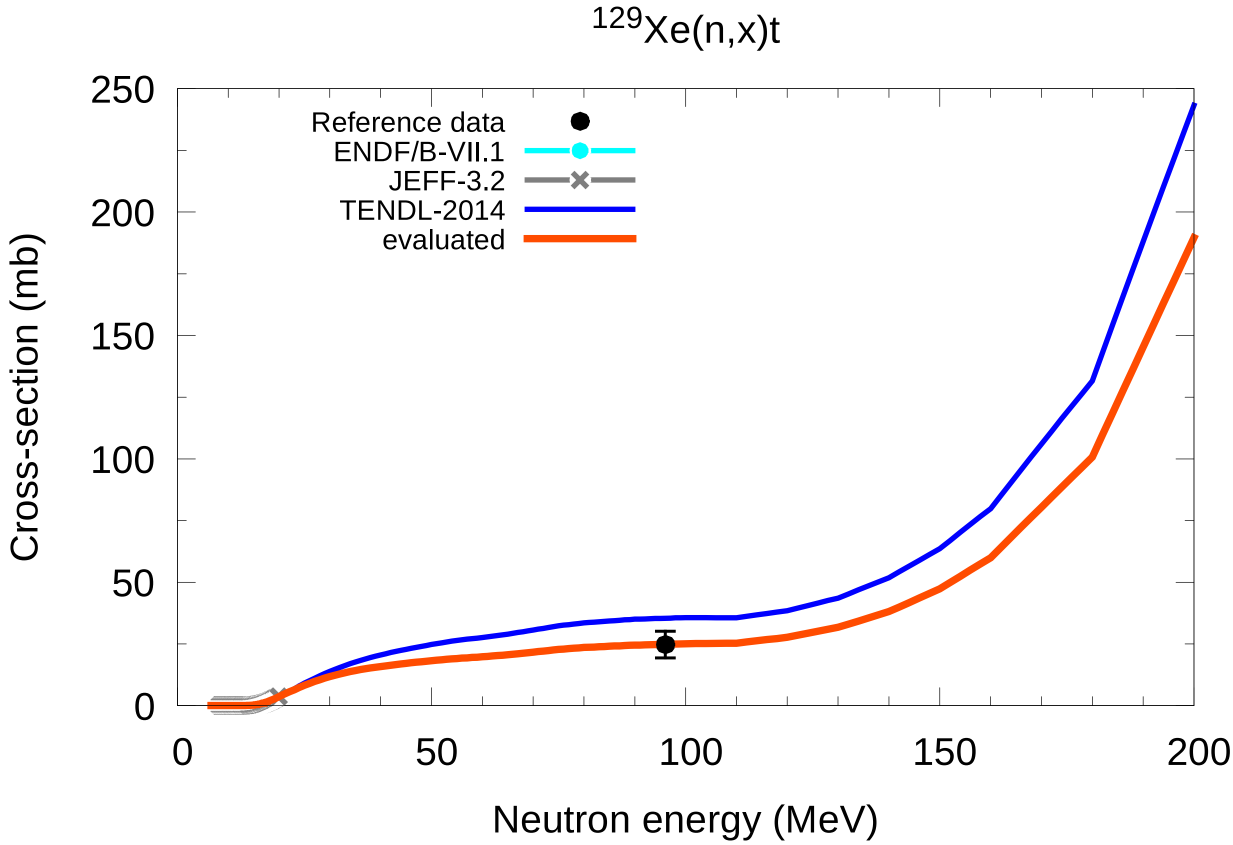
100
150
200



^{128}Xe(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
0
50
100
150
200



^{129}Xe(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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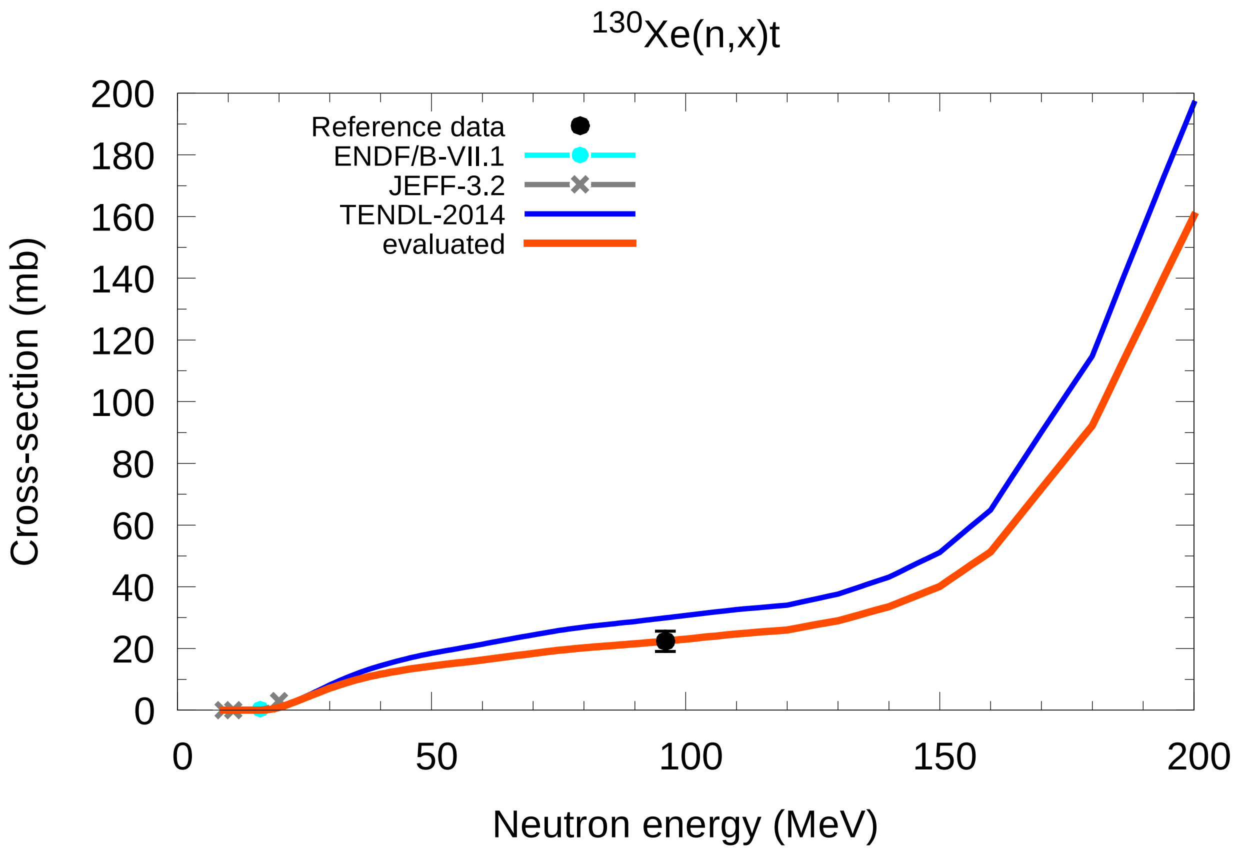
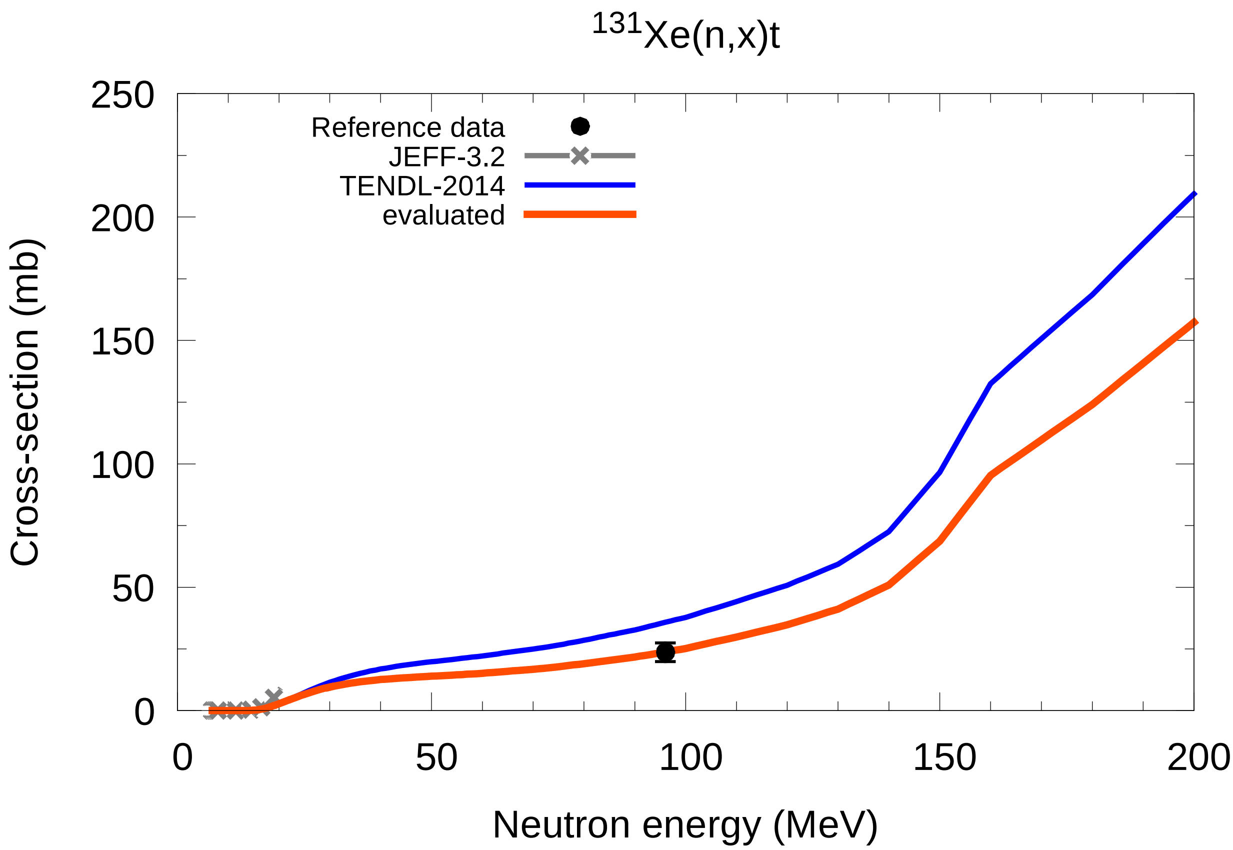
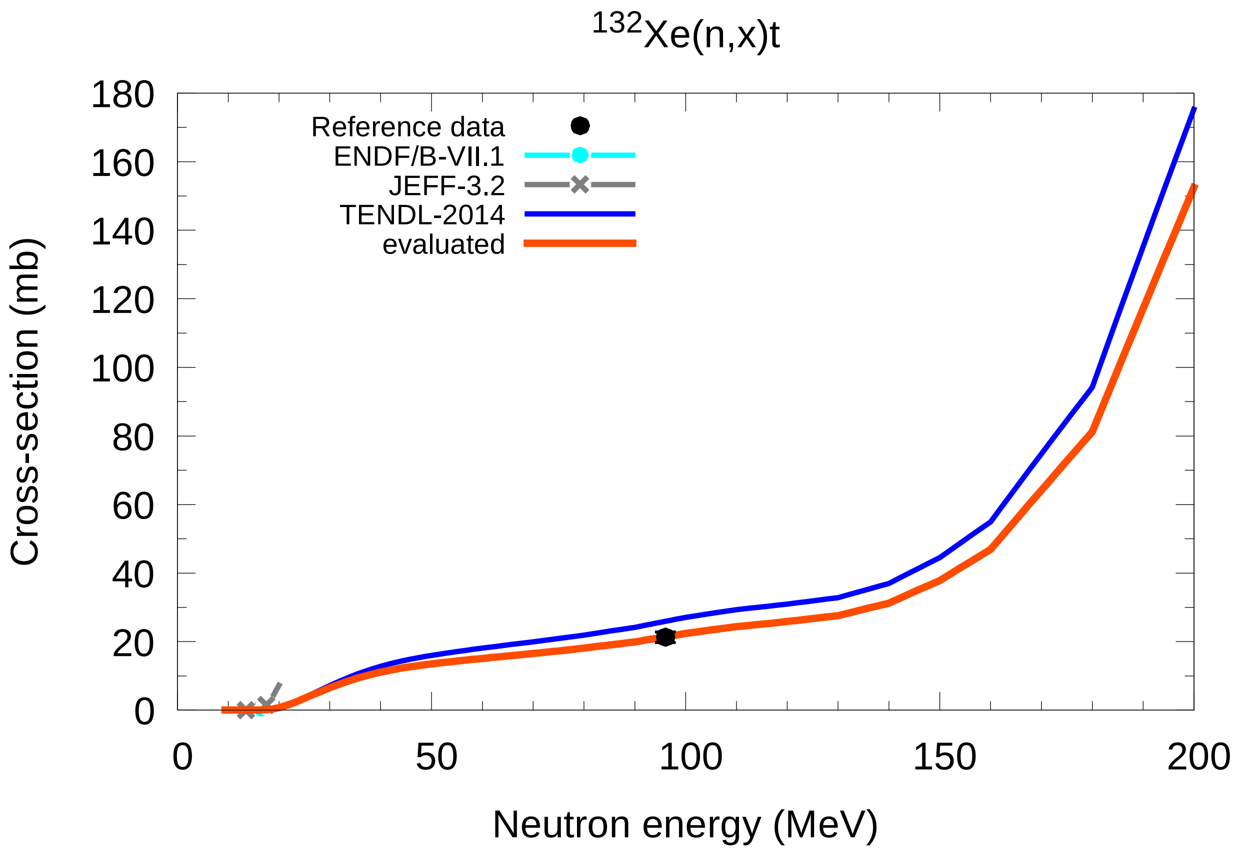
100
150
200
250



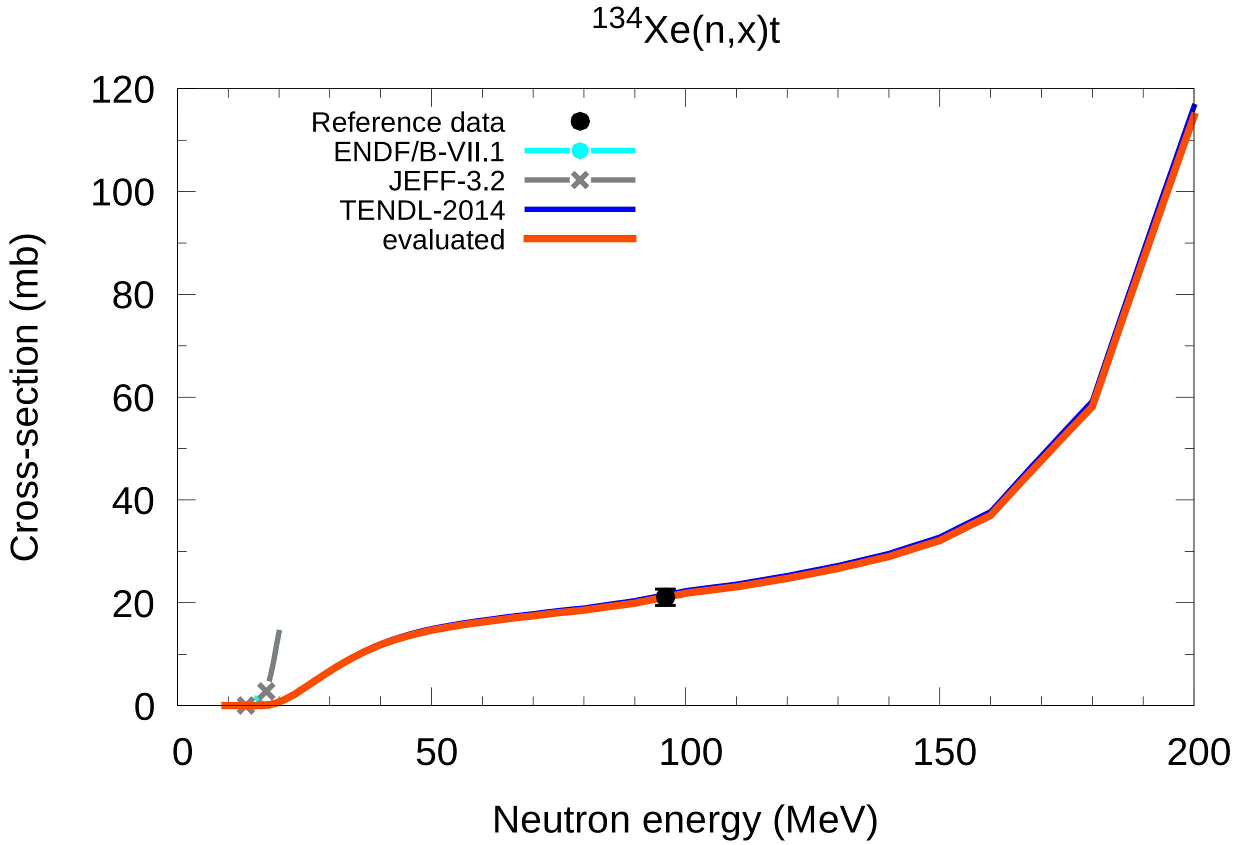
^{130}Xe(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200
50
150



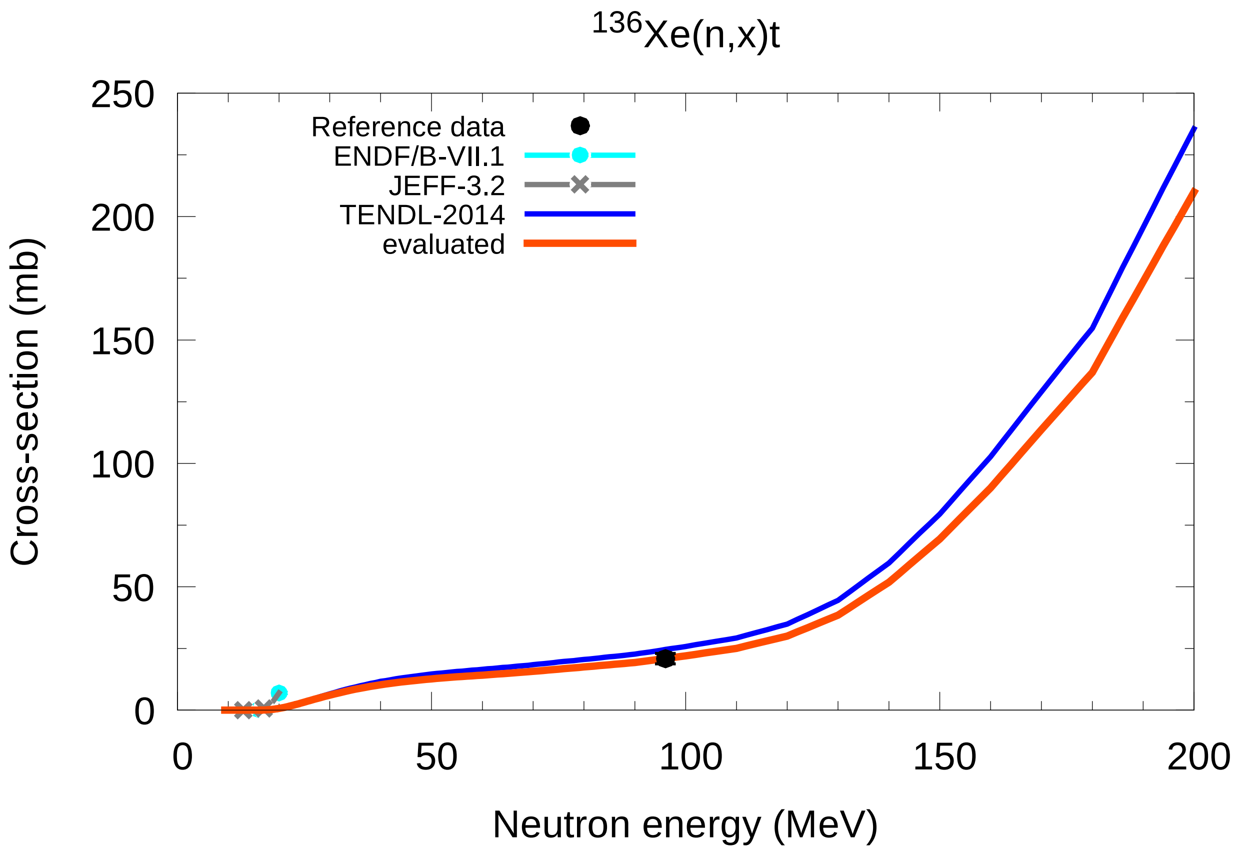
$^{131}Xe(n,x)t$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



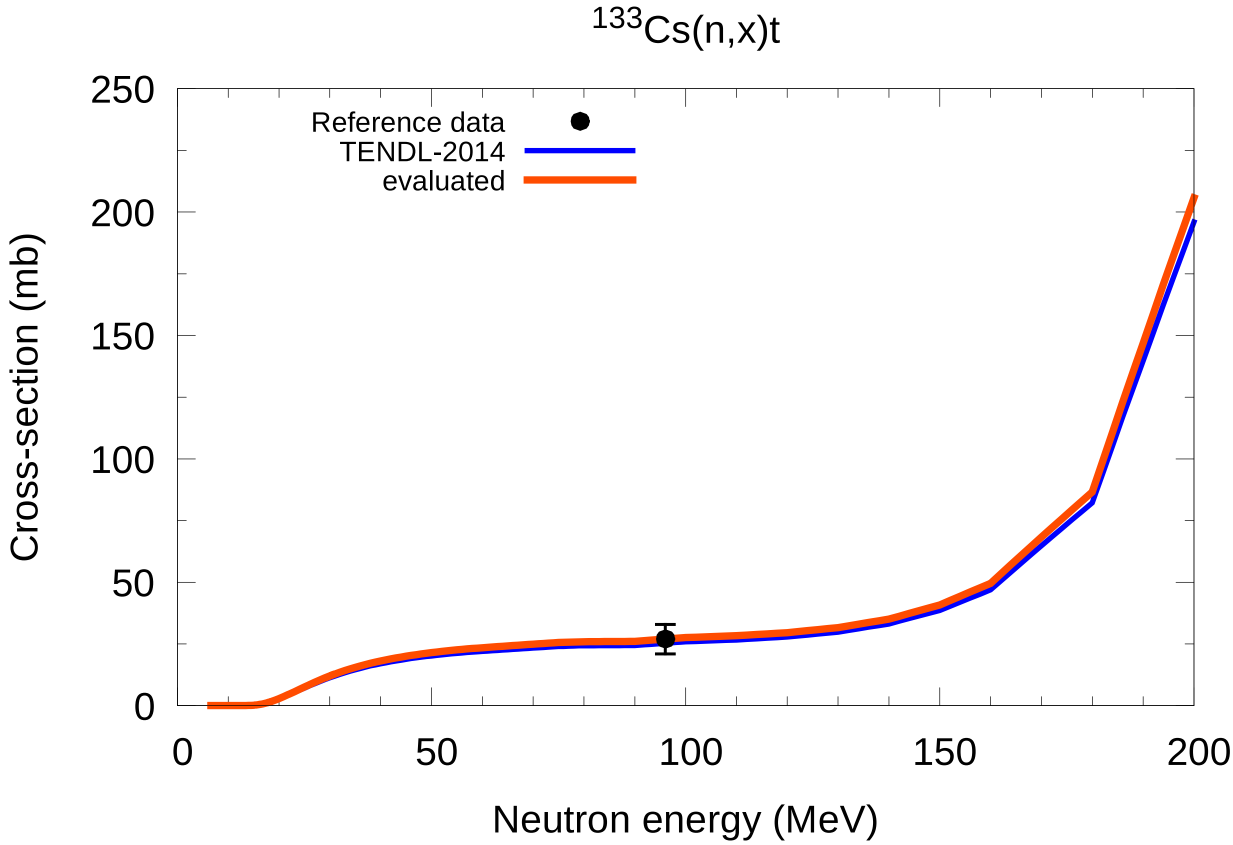
$^{132}Xe(n,x)t$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
50
150
200



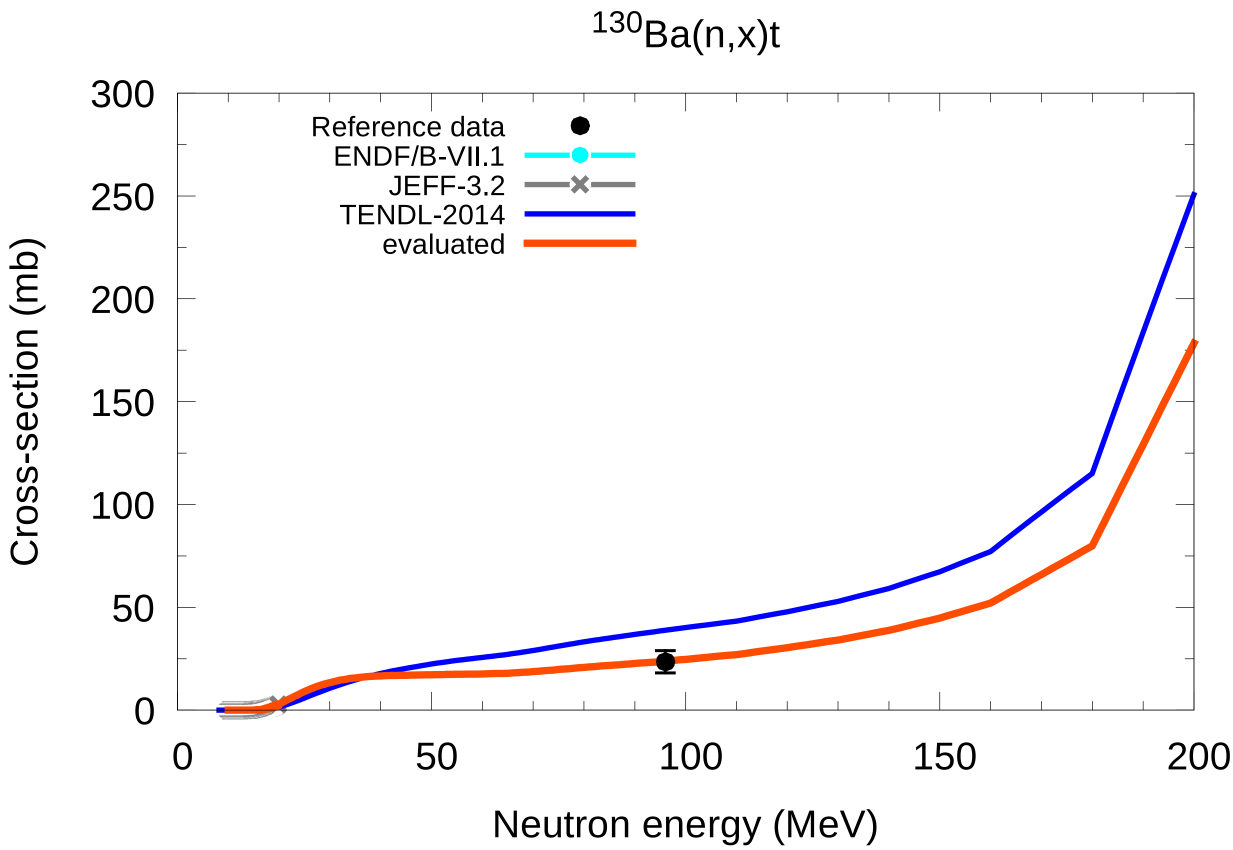
134Xe(n,x)t
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
20
40
60
80
100
120
0
50
100
150
200



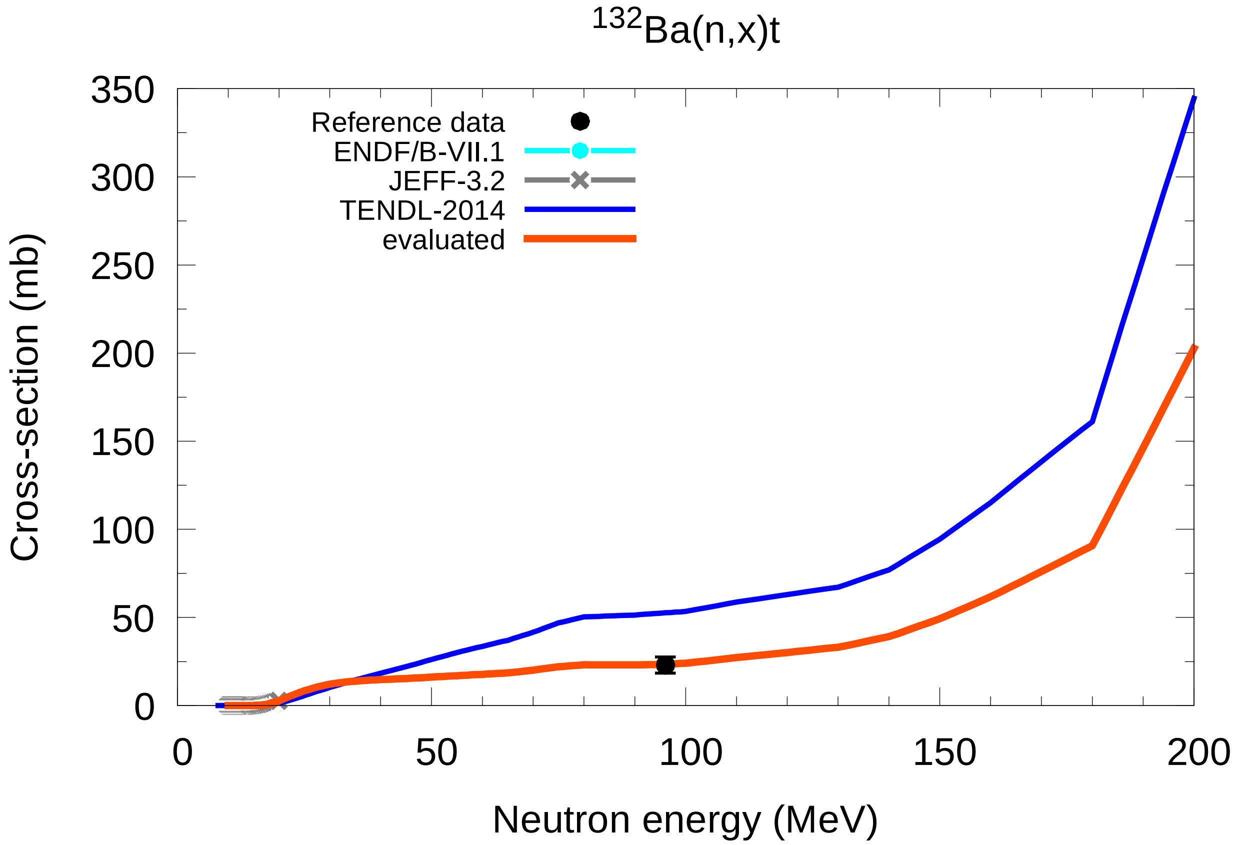
136Xe(n,x)t
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
0
50
100
150
200



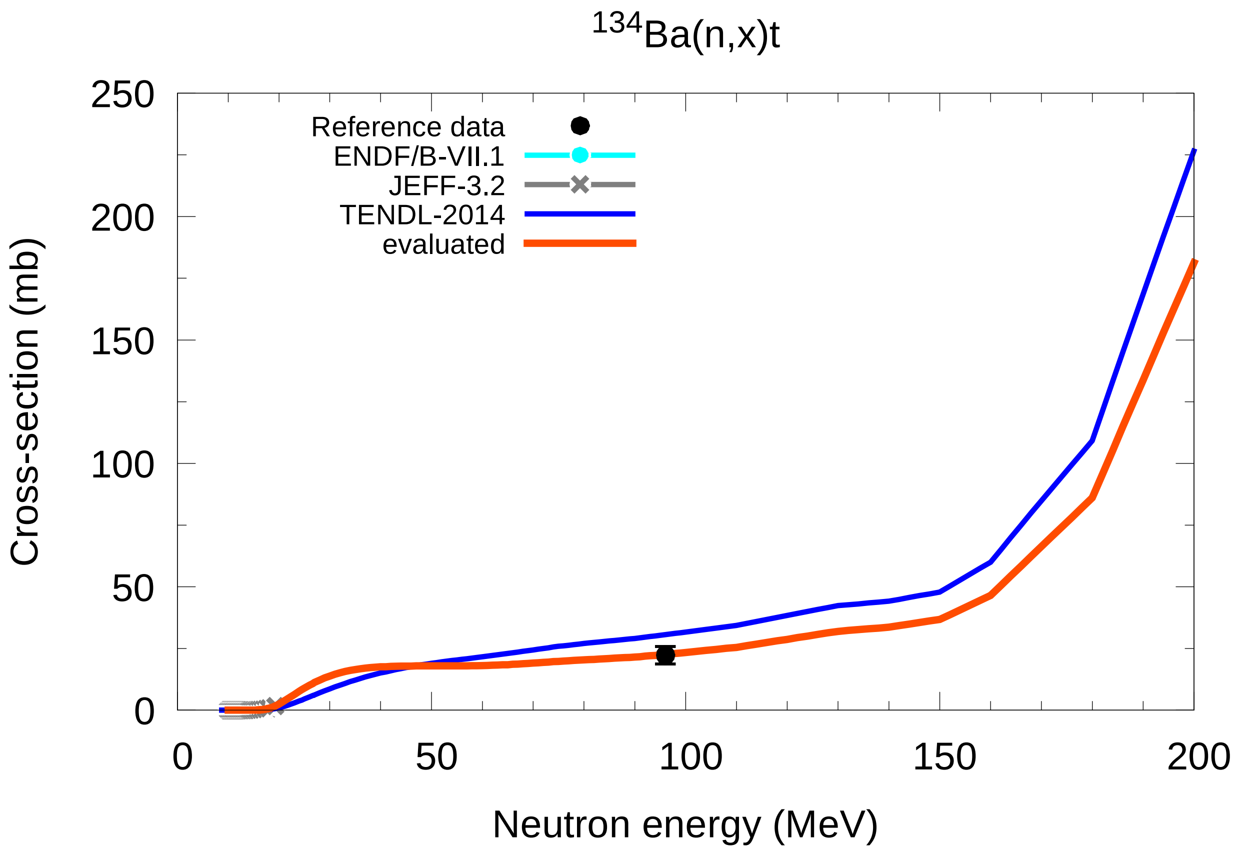
^{133}Cs(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



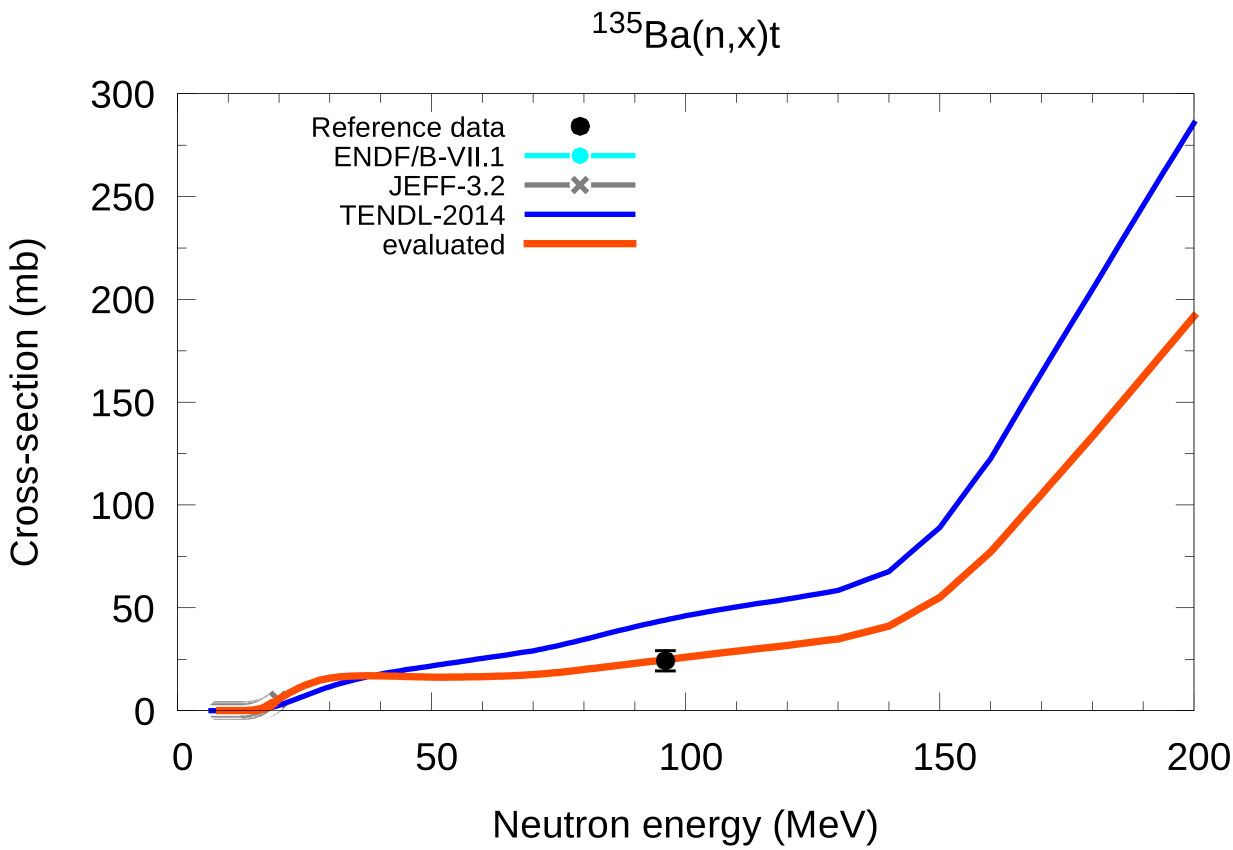
^{130}Ba(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



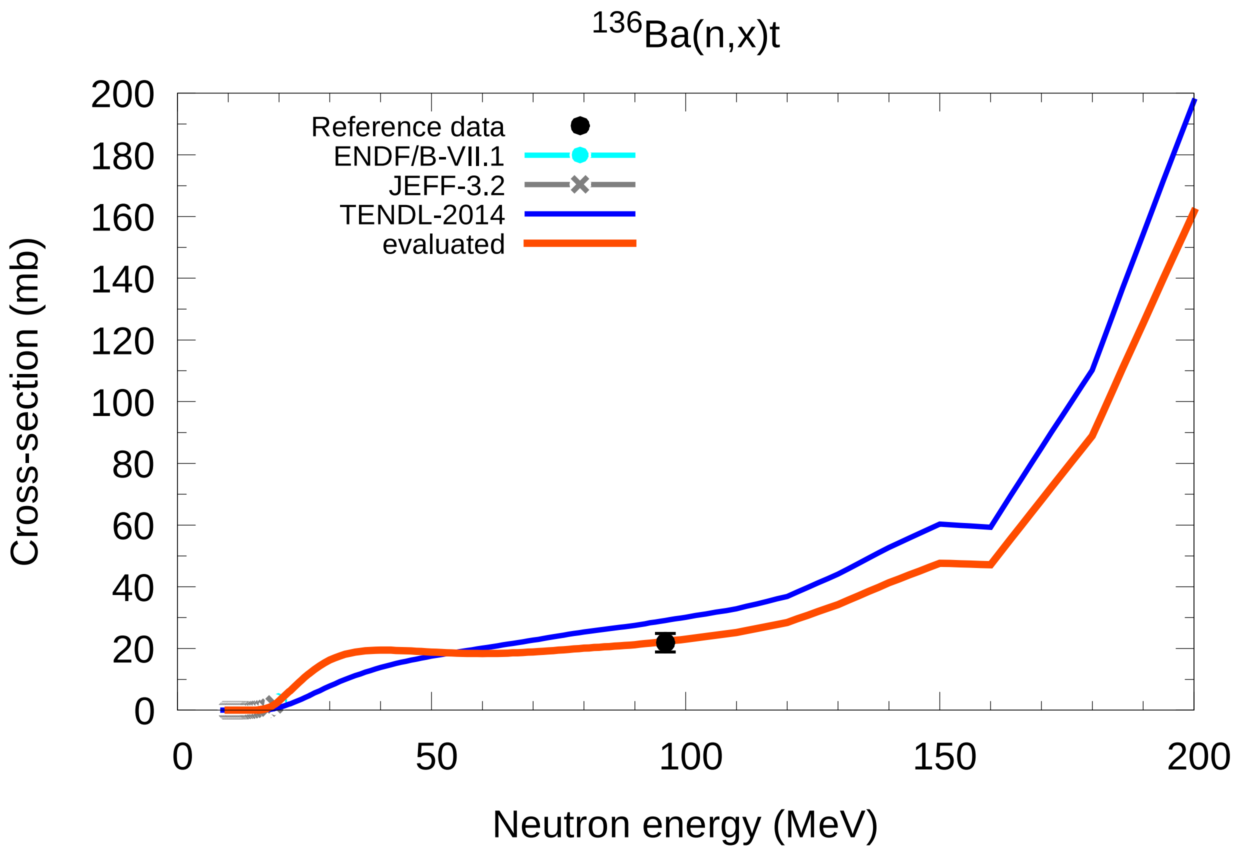
$^{132}Ba(n,x)t$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300
350



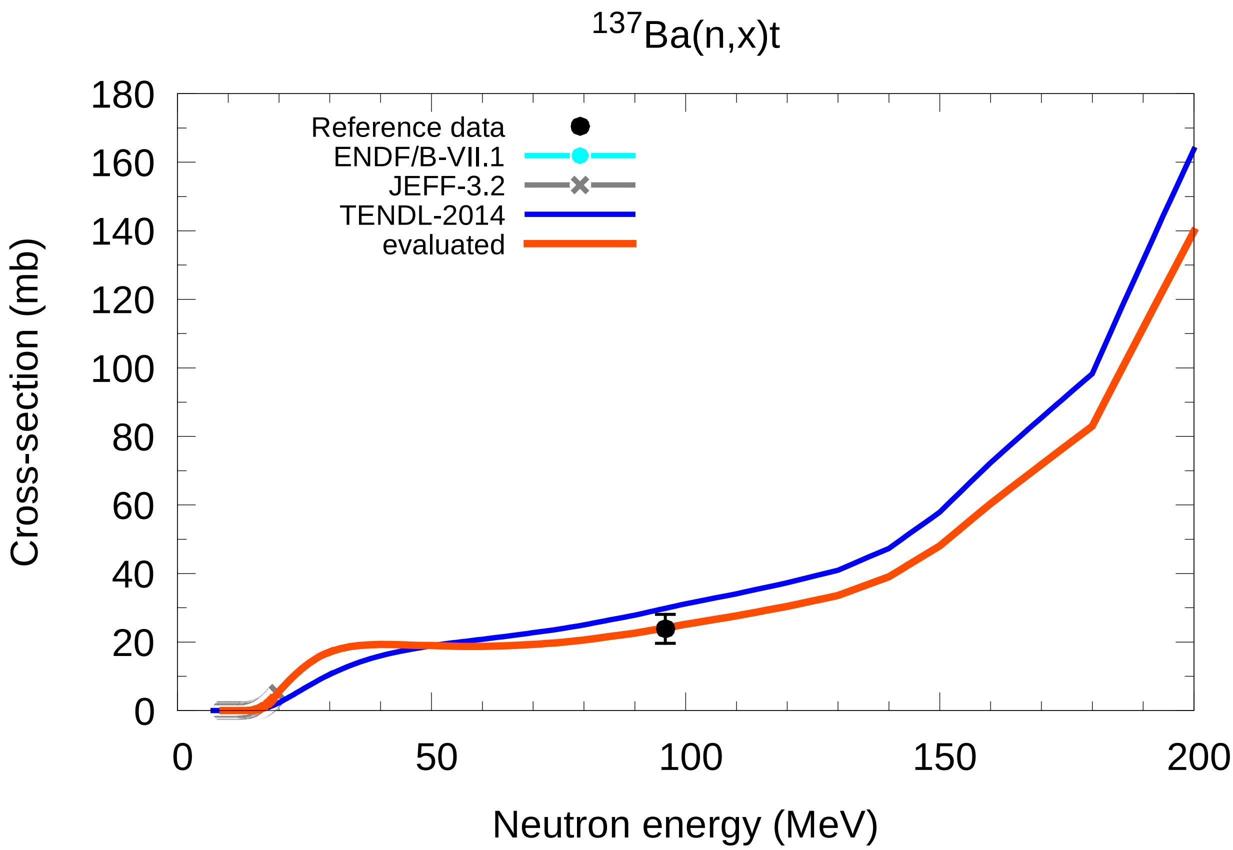
$^{134}Ba(n,x)t$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250



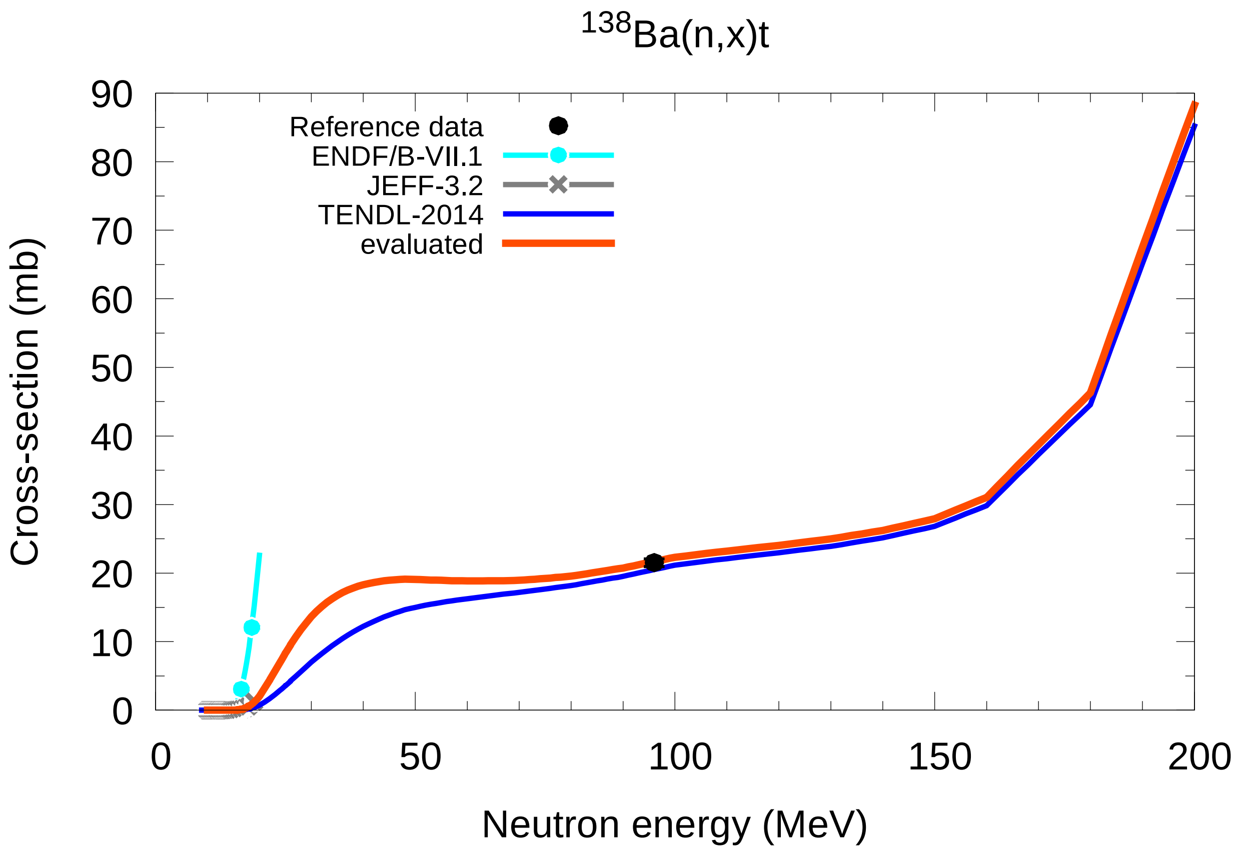
^{135}Ba(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
0
50
100
150
200



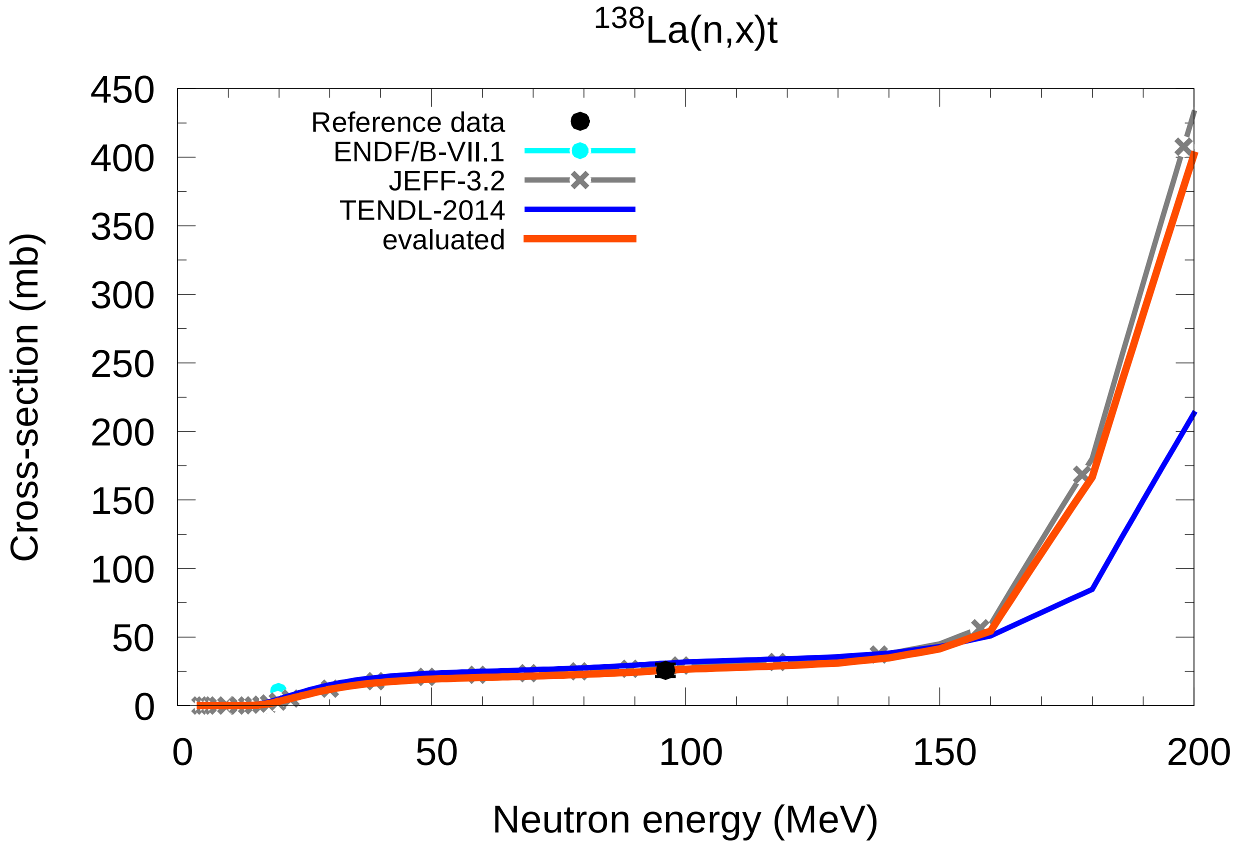
^{136}Ba(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200



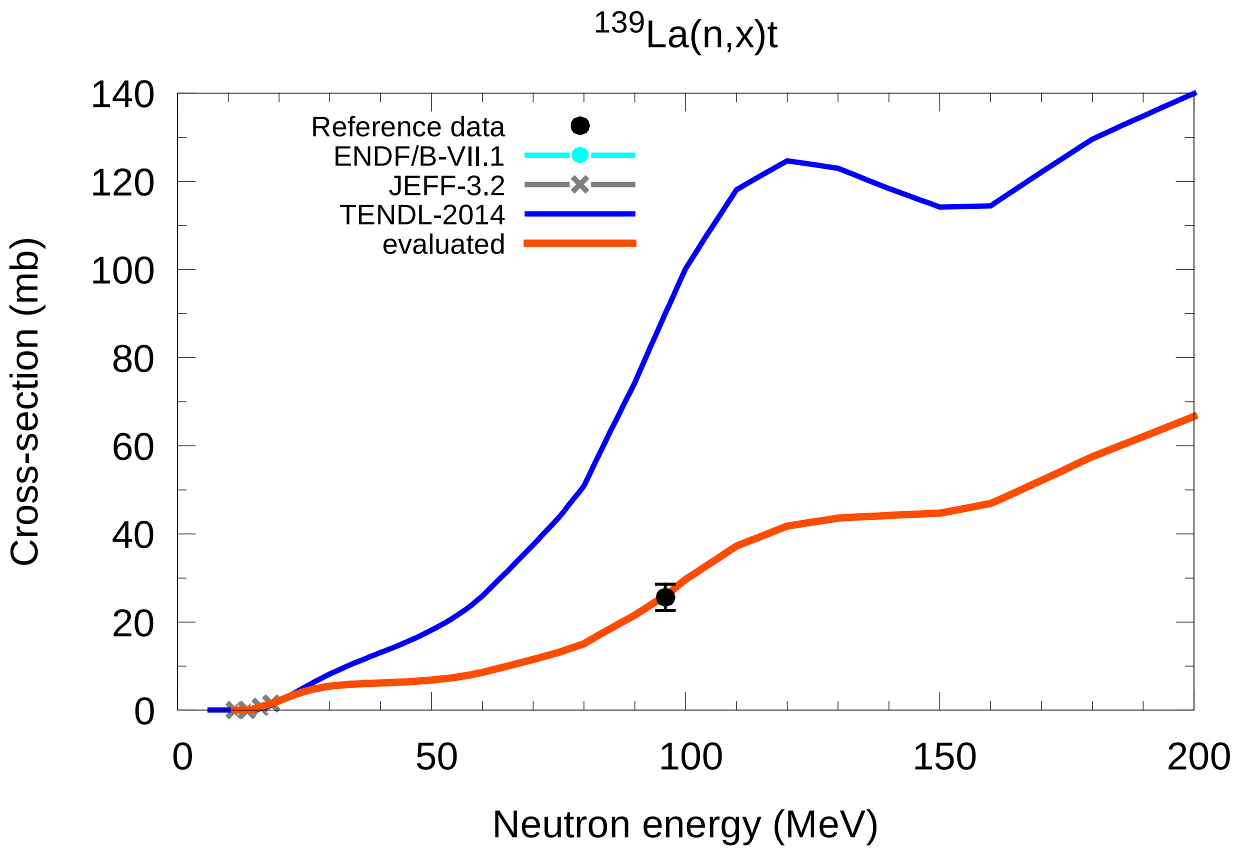
^{137}Ba(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
0
50
100
150
200



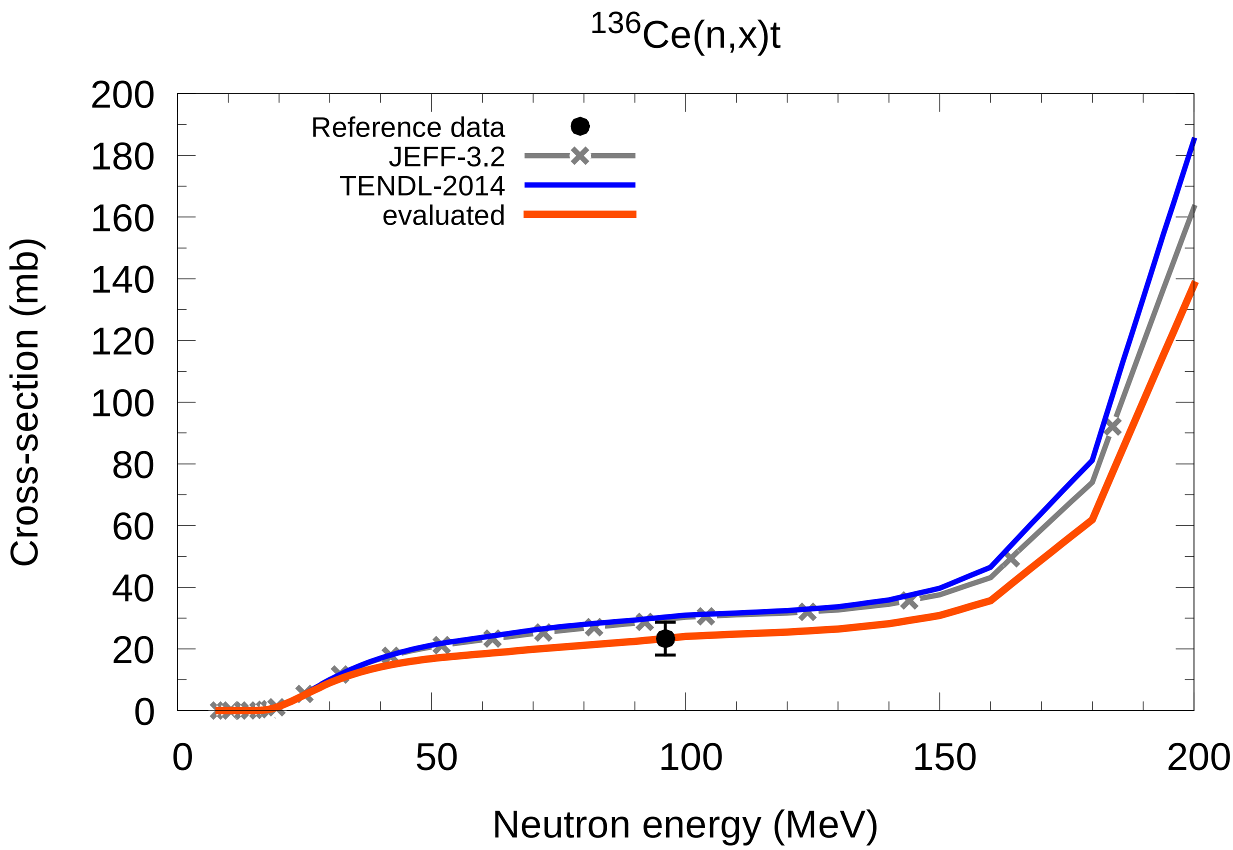
^{138}Ba(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
10
20
30
40
50
60
70
80
90
0
50
100
150
200



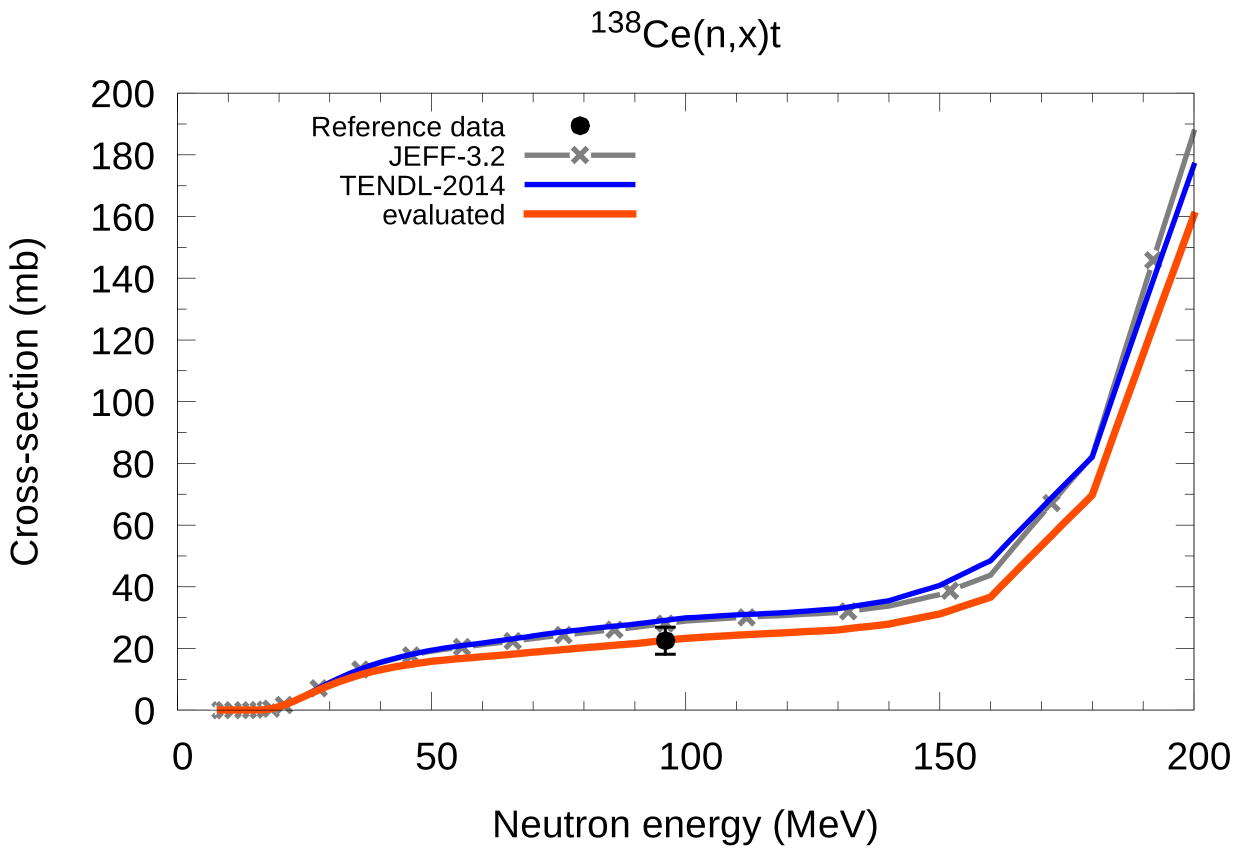
^{138}La(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



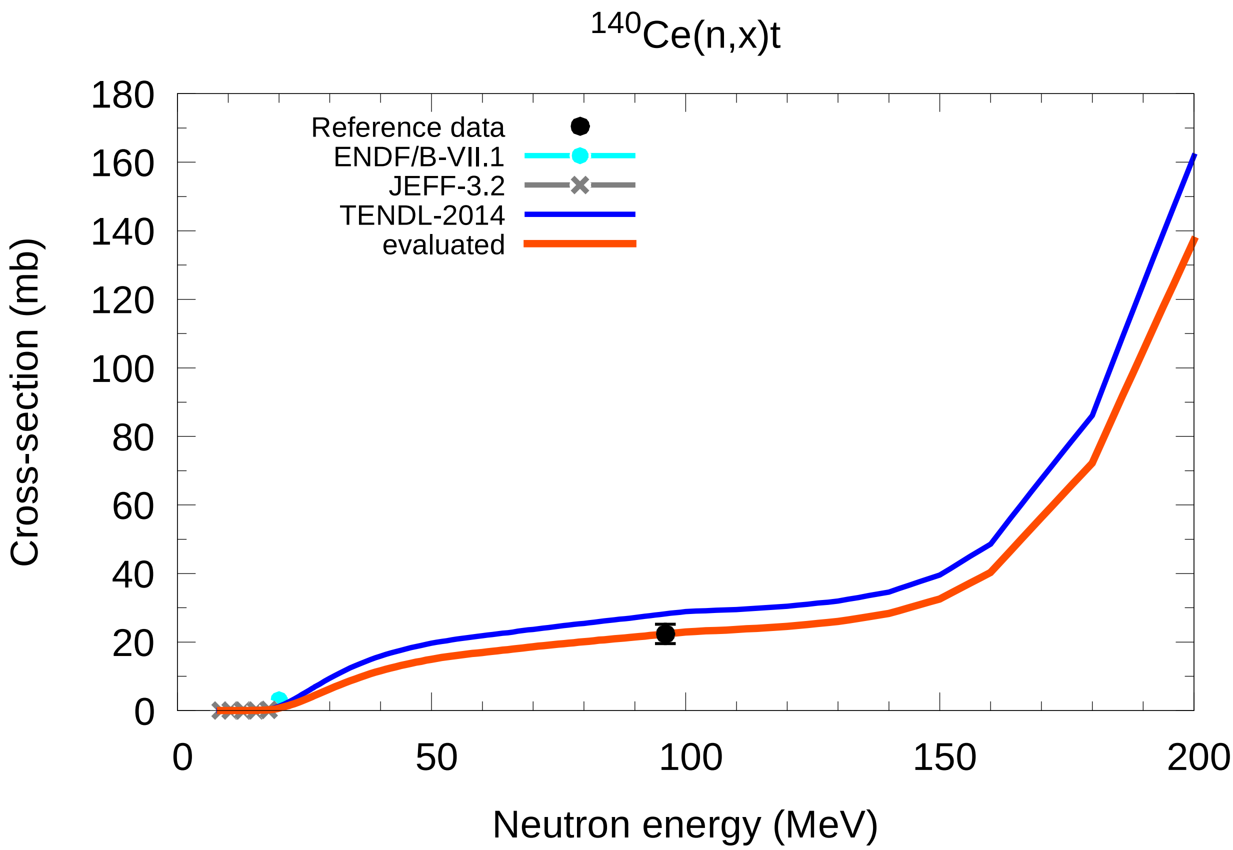
^{139}La(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
50
150
200



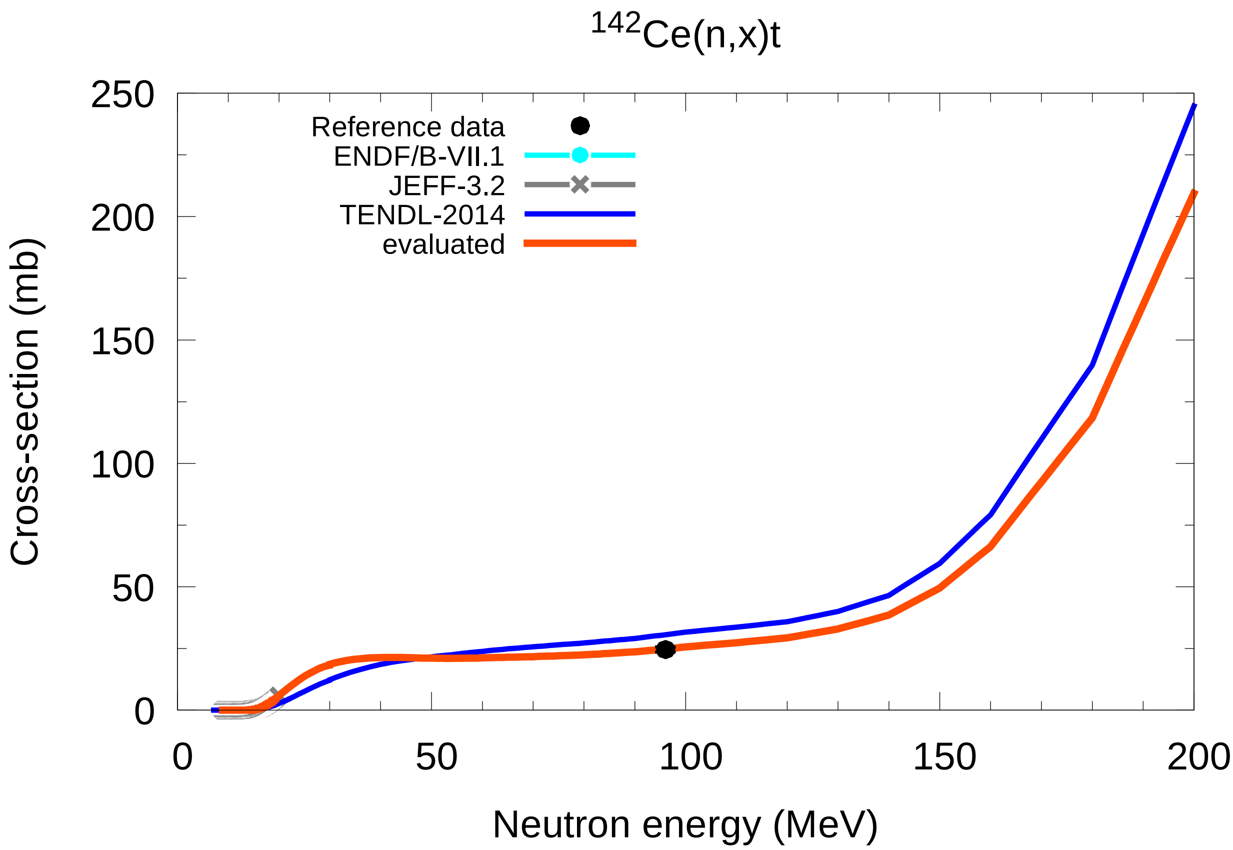
^{136}Ce(n,x)t
Cross-section (mb)
Neutron energy (MeV)
Reference data
JEFF-3.2
TENDL-2014
evaluated
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200



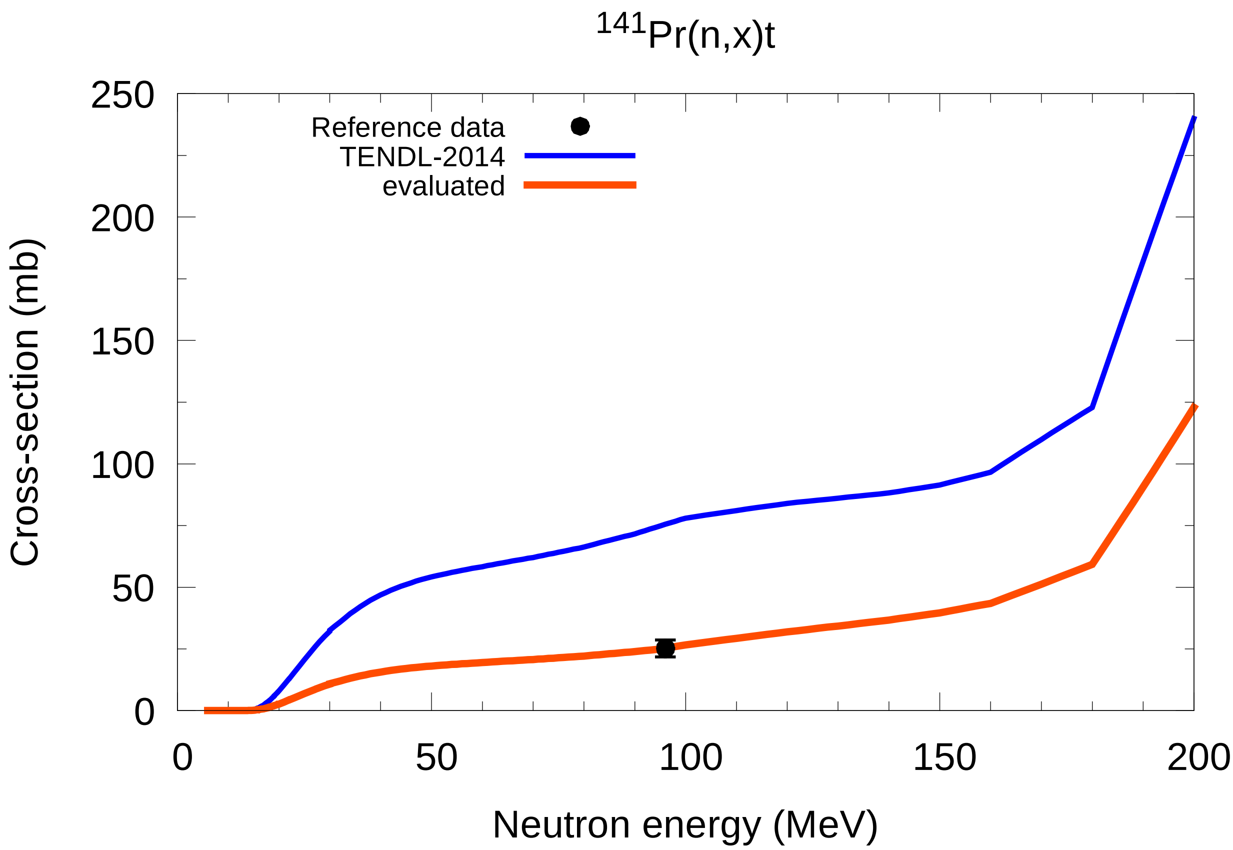
^{138}Ce(n,x)t
Cross-section (mb)
Neutron energy (MeV)
Reference data
JEFF-3.2
TENDL-2014
evaluated
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200



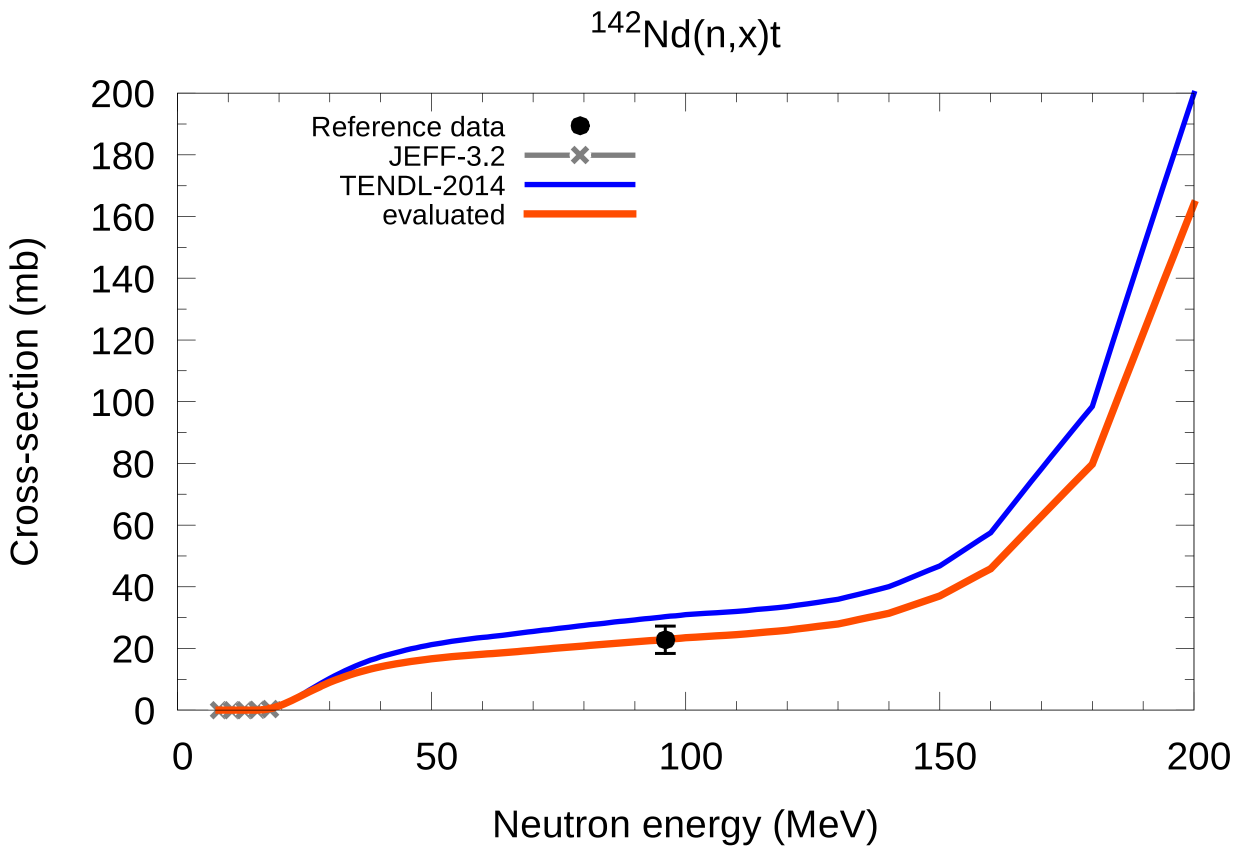
^{140}Ce(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
0
50
100
150
200



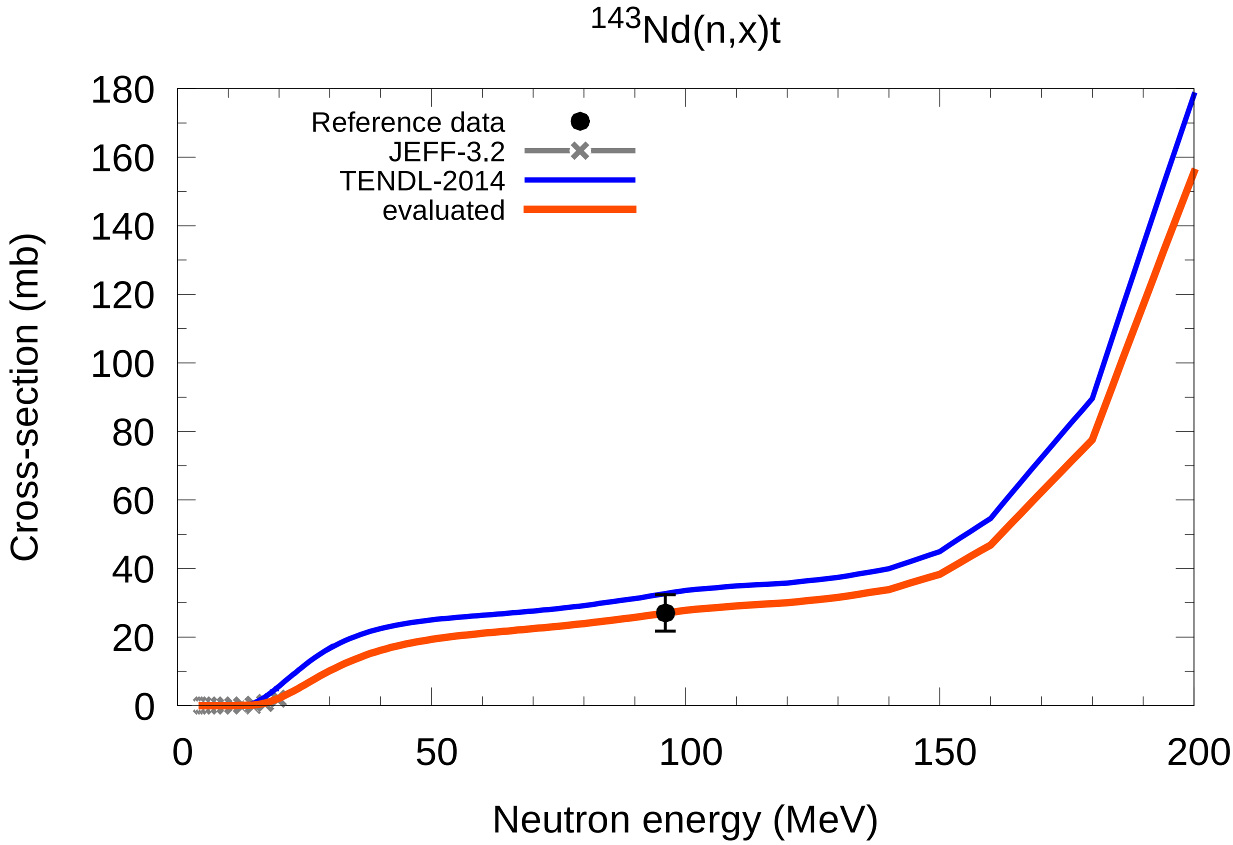
^{142}Ce(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
0
50
100
150
200



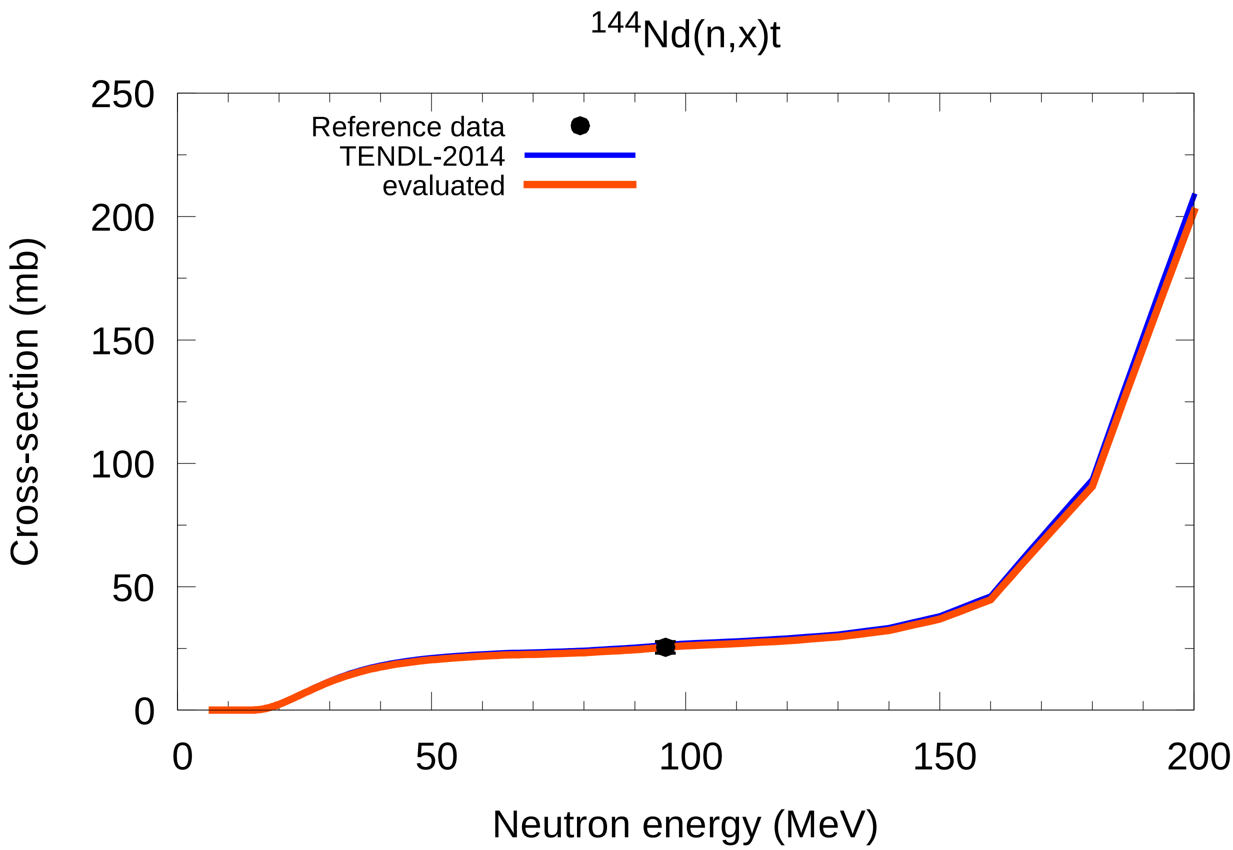
$^{141}Pr(n,x)t$
Reference data
TENDL-2014
evaluated
Cross-section (mb)
0
50
100
150
200
250
0
50
100
150
200
Neutron energy (MeV)



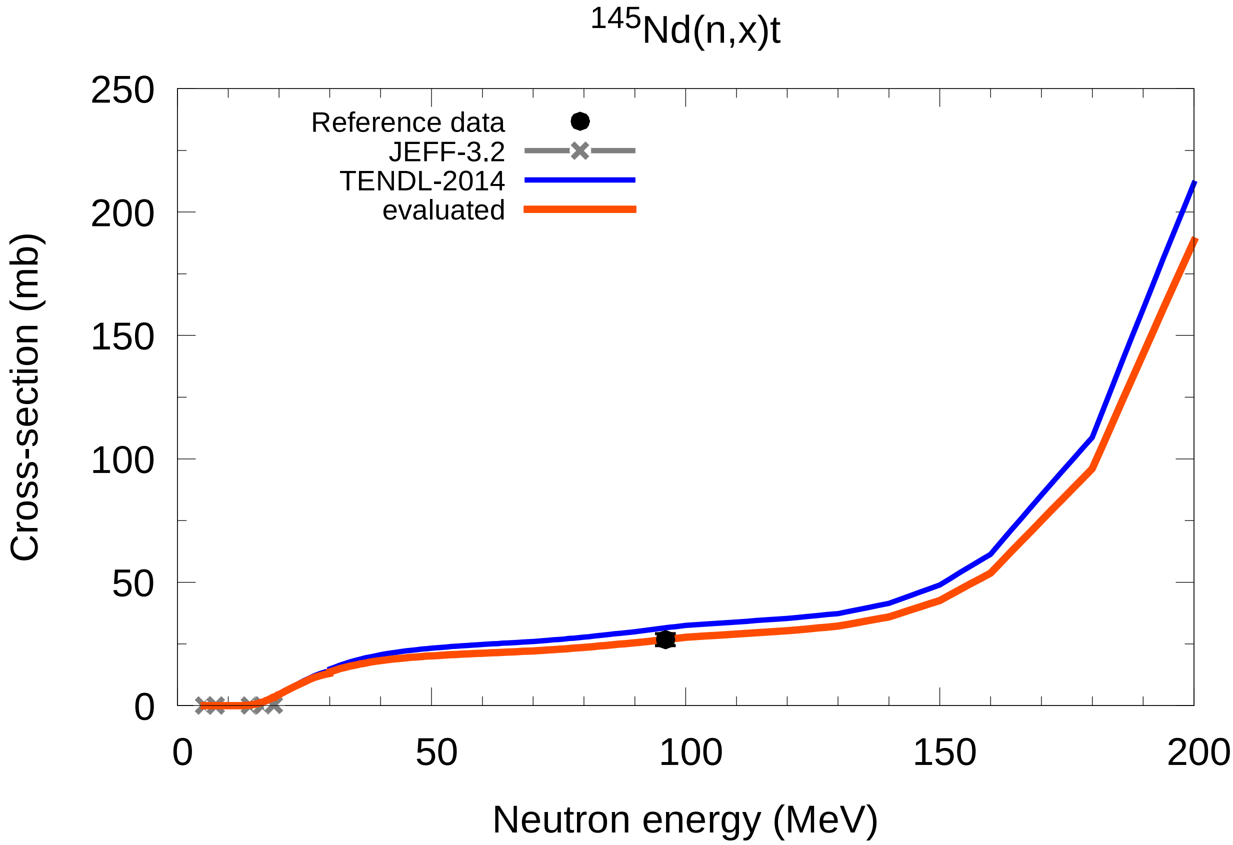
$^{142}Nd(n,x)t$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200
Neutron energy (MeV)



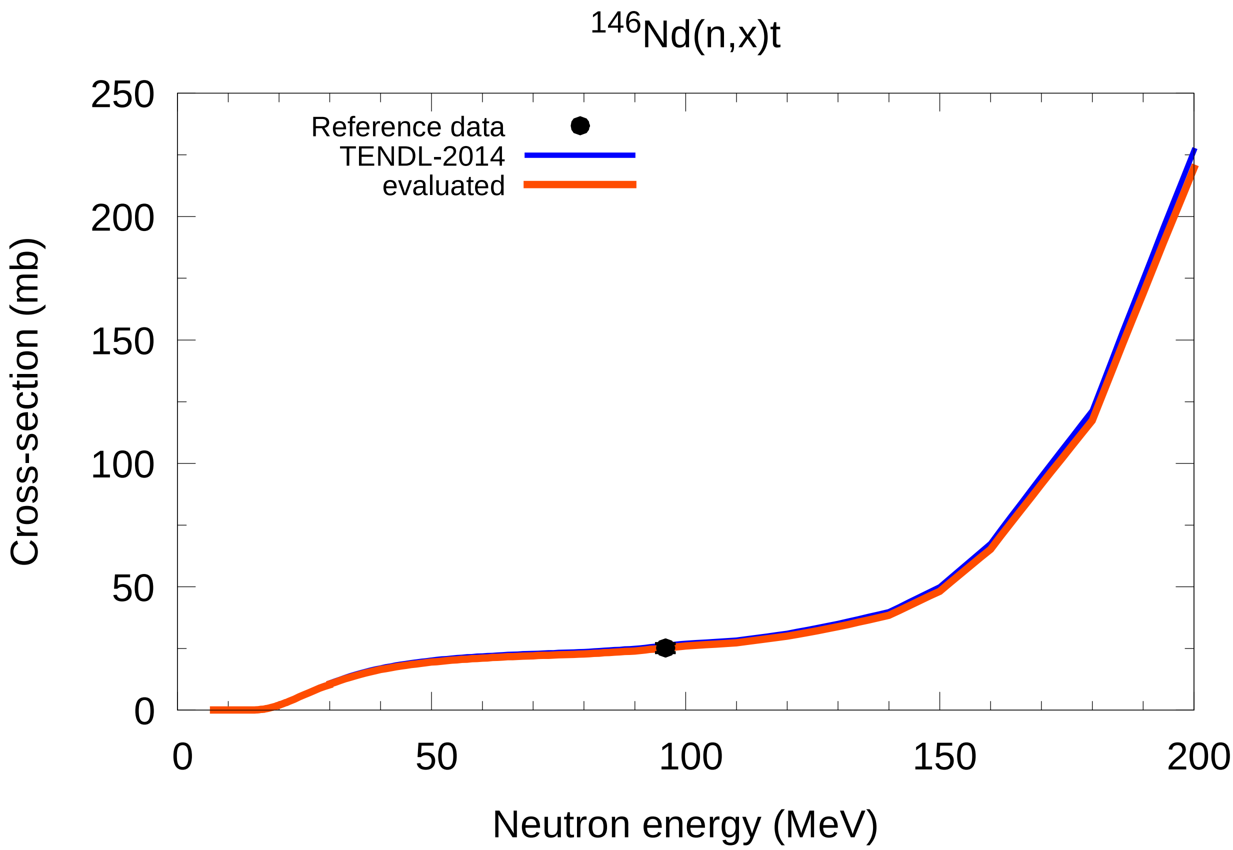
^{143}Nd(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
0
50
100
150
200



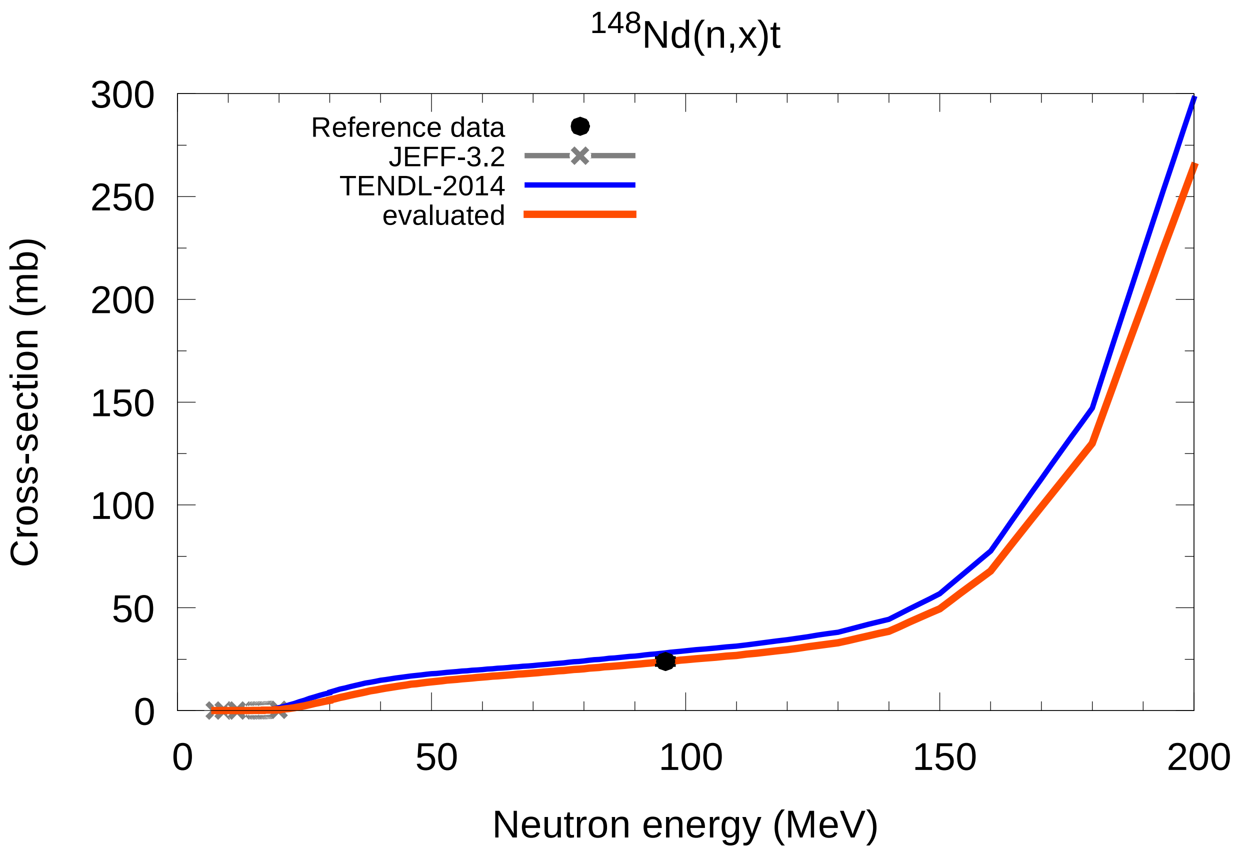
^{144}Nd(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
0
50
100
150
200



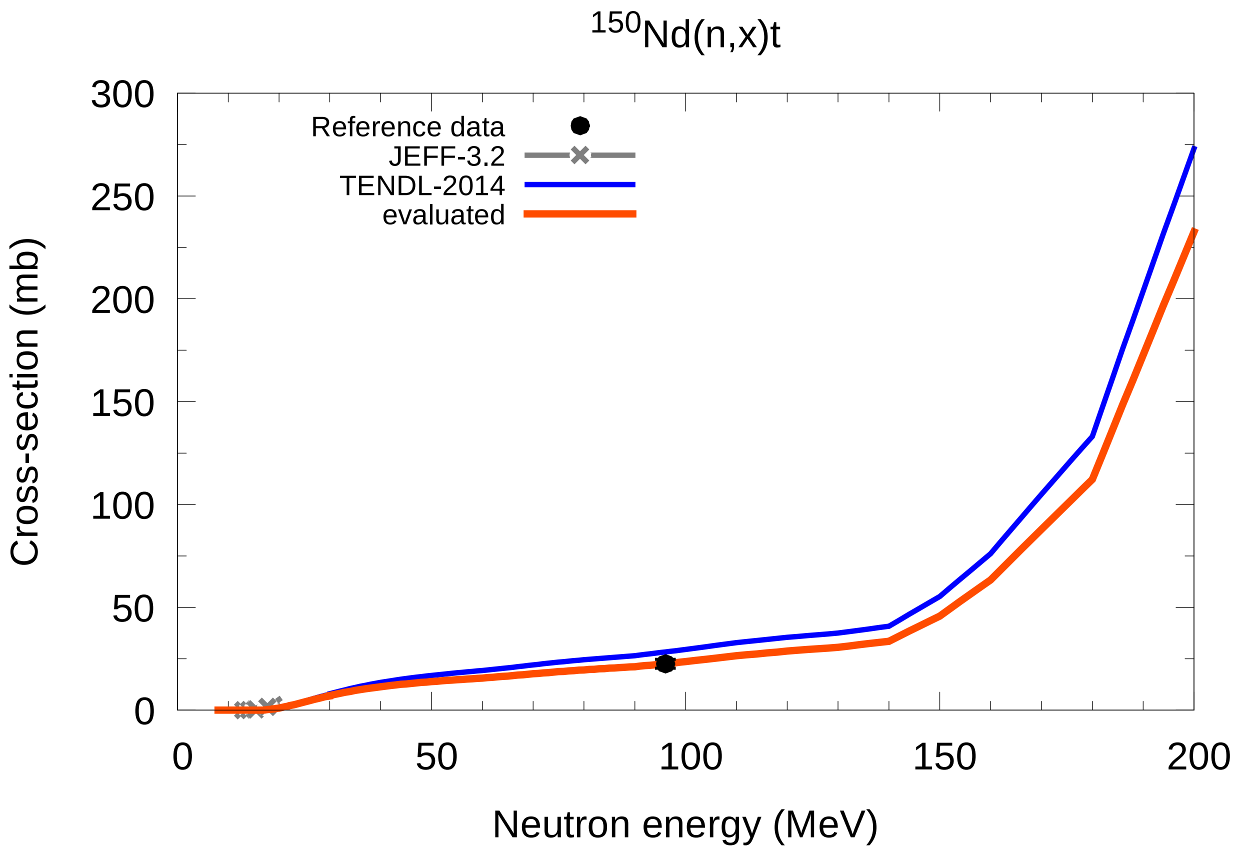
^{145}Nd(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



^{146}Nd(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



^{148}Nd(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



^{150}Nd(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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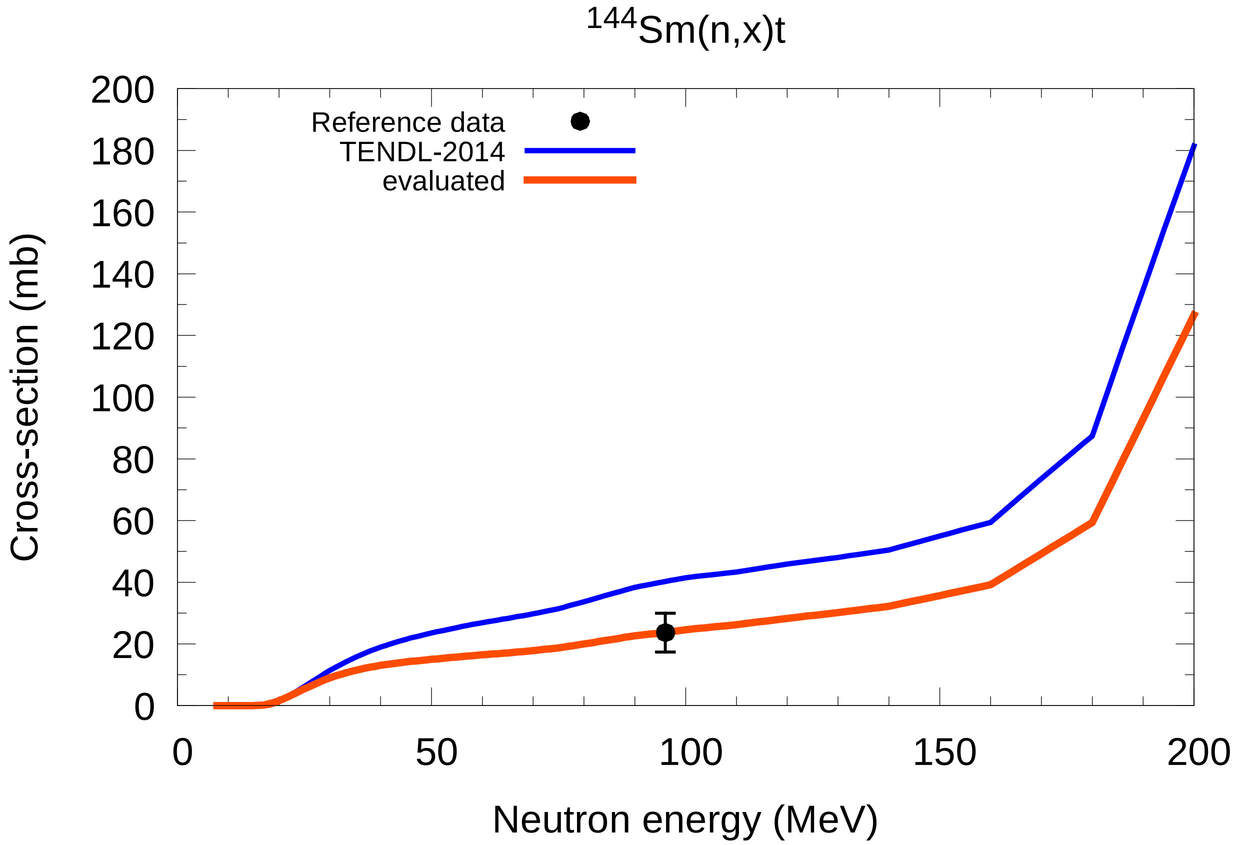
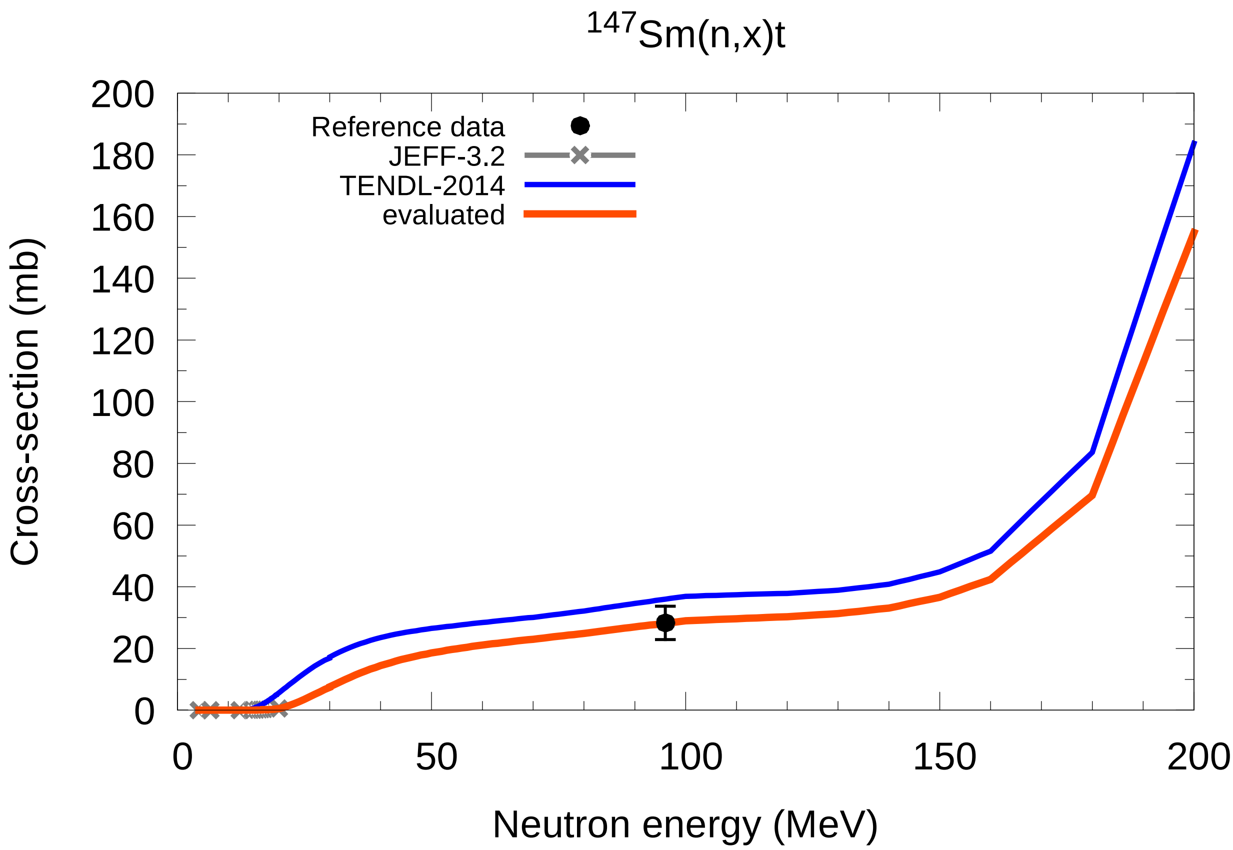
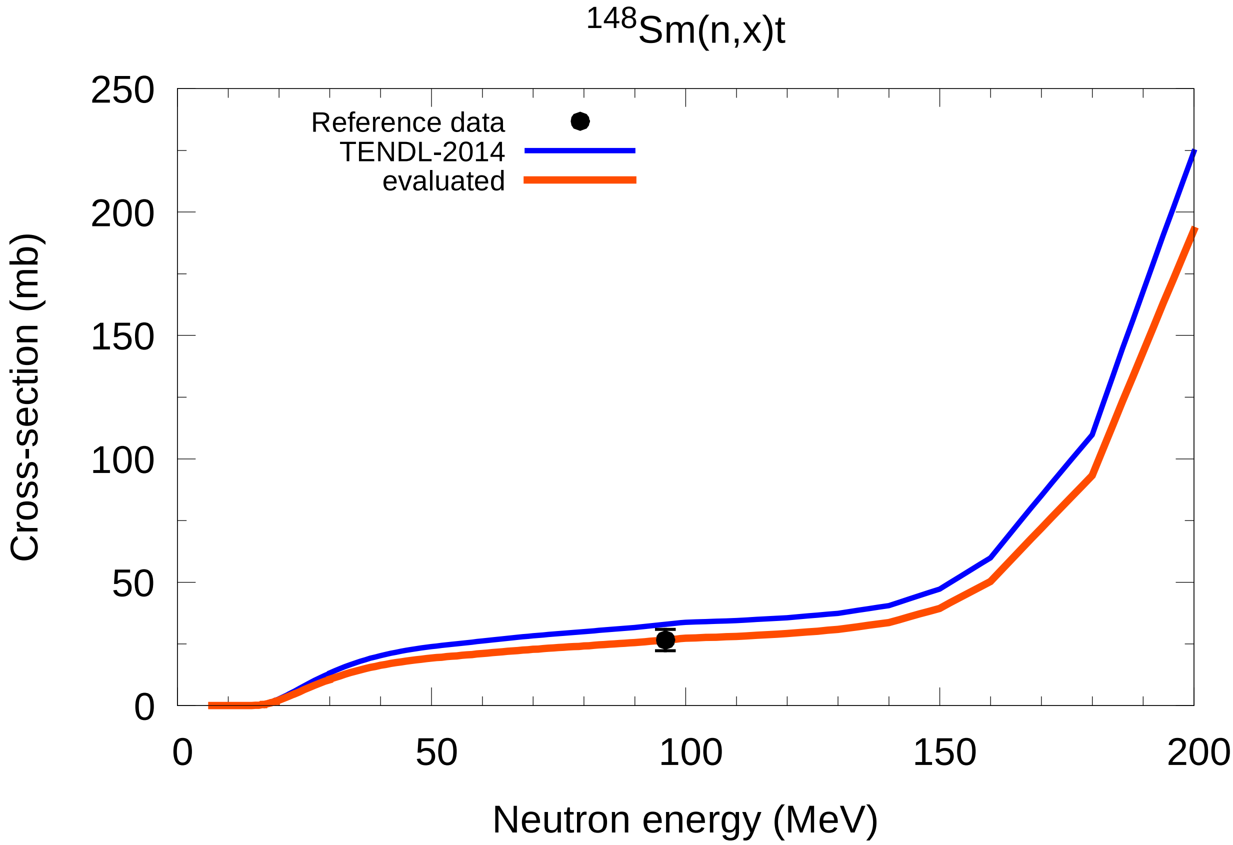
100
150
200
250
300

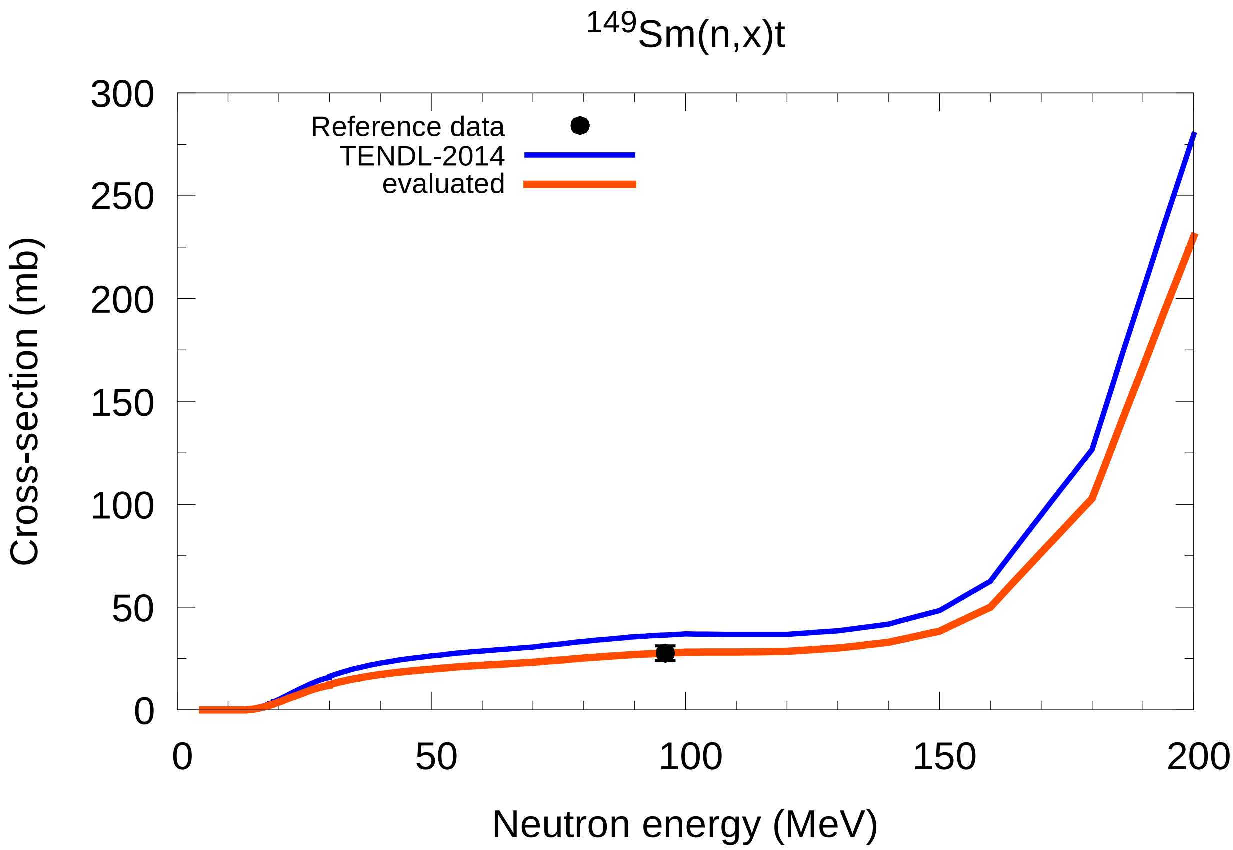


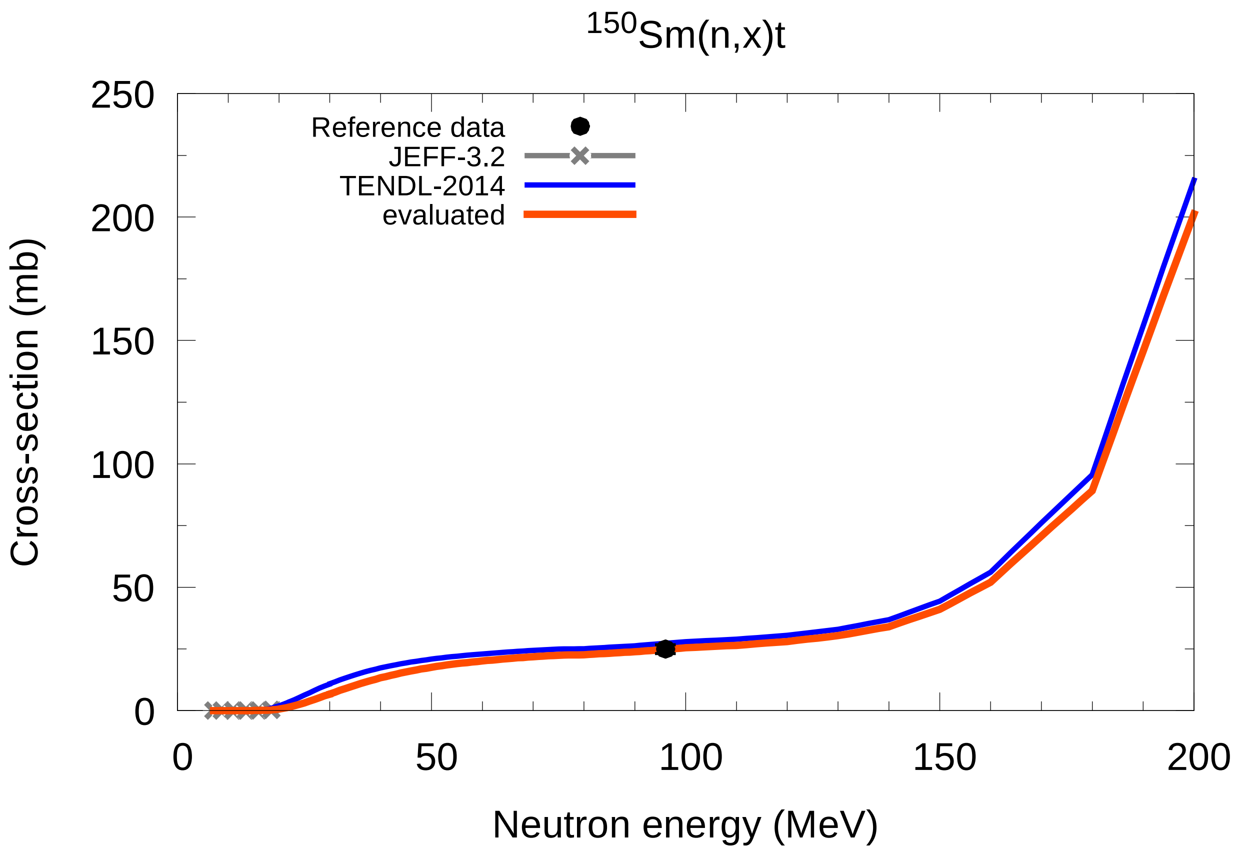
^{144}Sm(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200



^{147}Sm(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200


^{148}Sm(n,x)t
Cross-section (mb)
Neutron energy (MeV)
Reference data
TENDL-2014
evaluated
0
50
100
150
200
250


^{149}Sm(n,x)t
Cross-section (mb)
Neutron energy (MeV)
Reference data
TENDL-2014
evaluated
0
50
100
150
200
250
300



150Sm(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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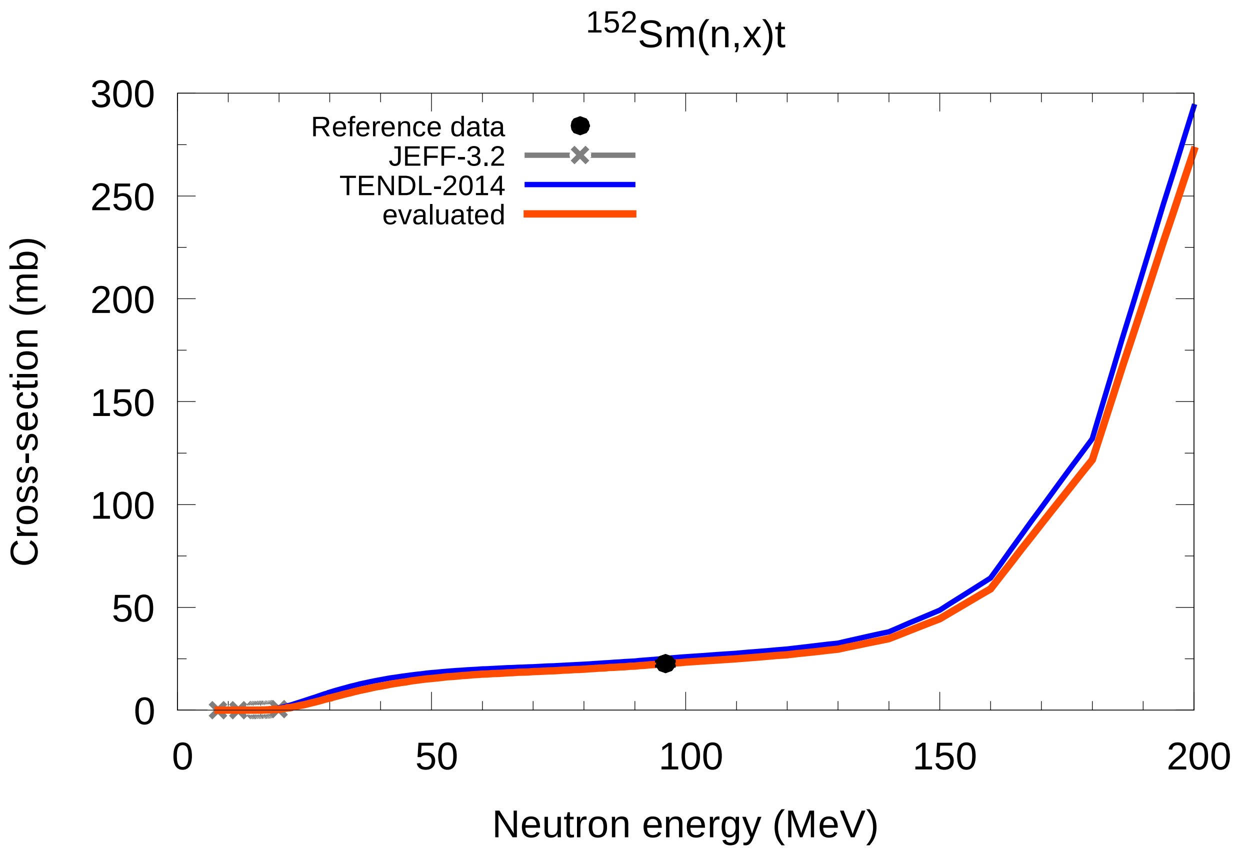
100
150
200
250



152Sm(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
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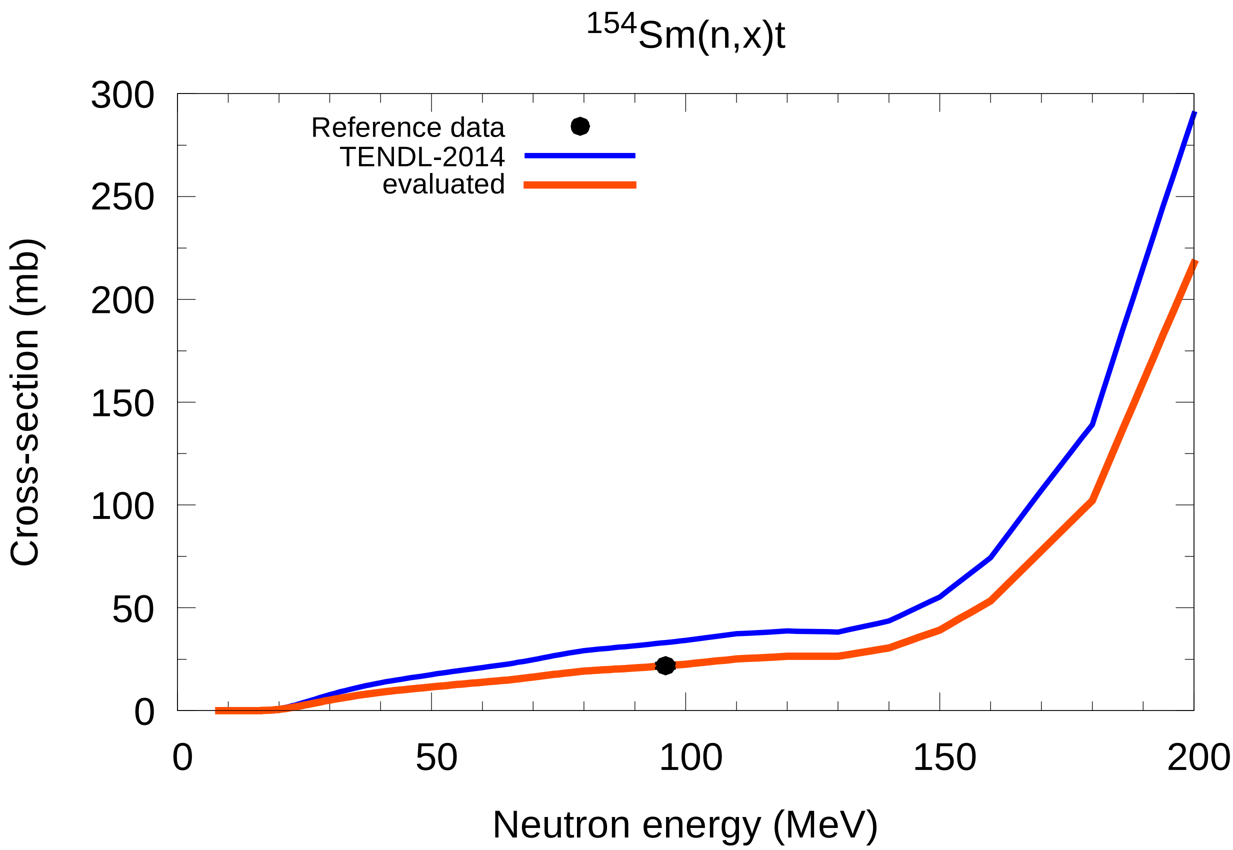
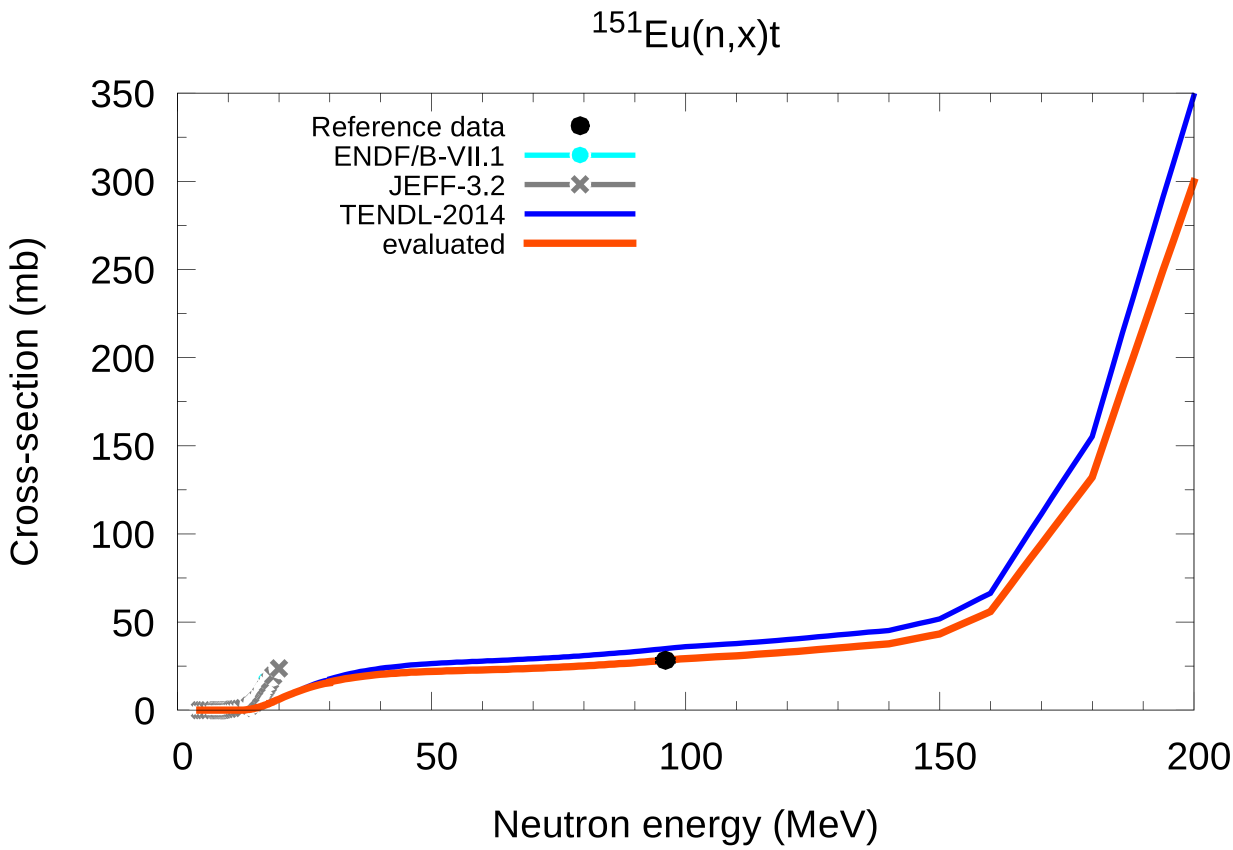
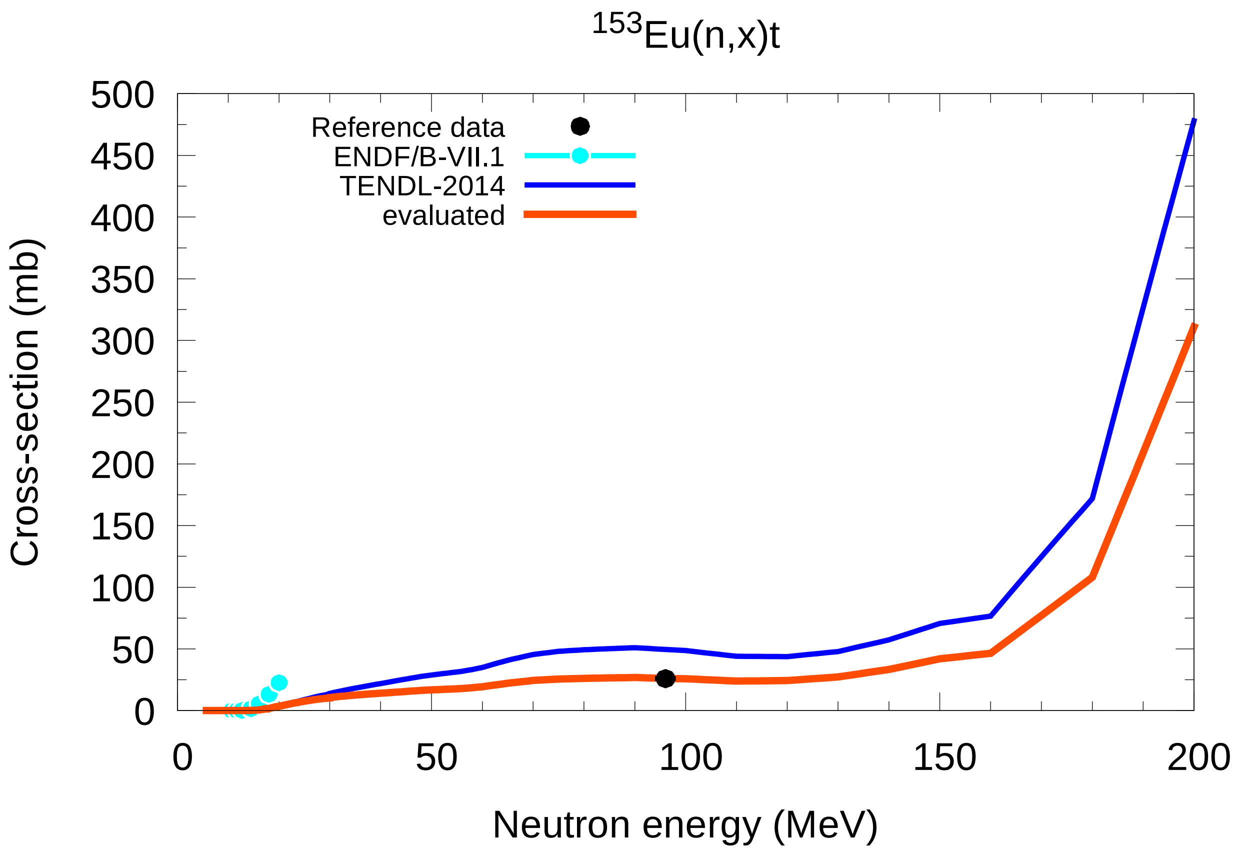
100
150
200
250
300



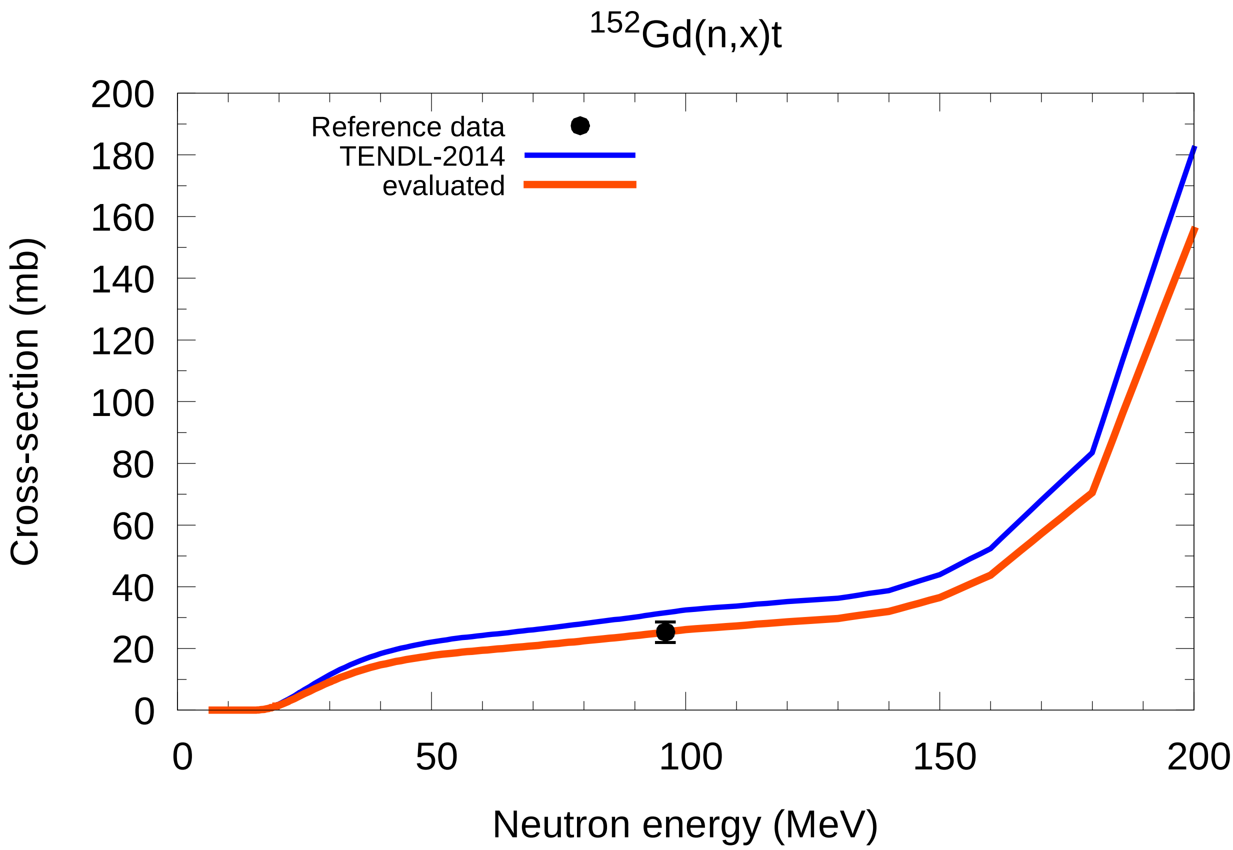
154Sm(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)



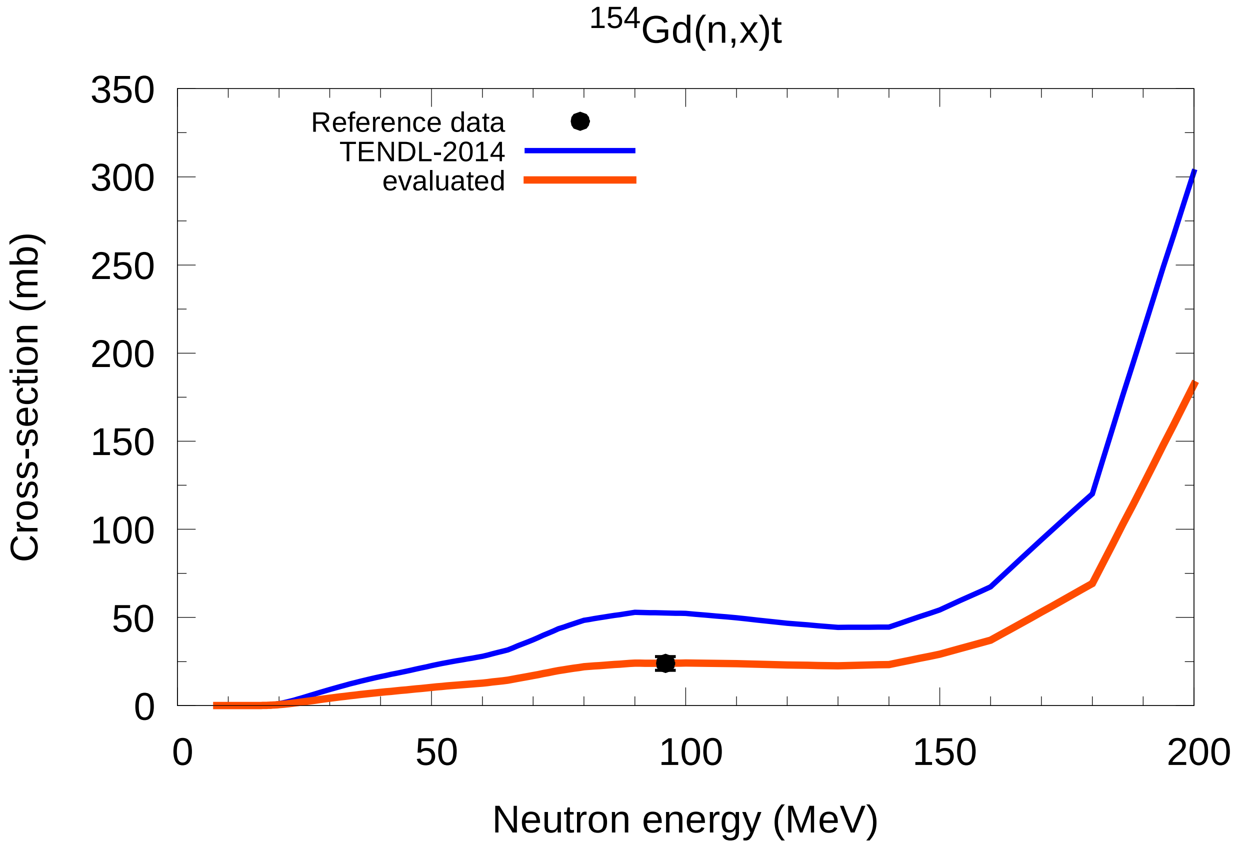
151Eu(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)



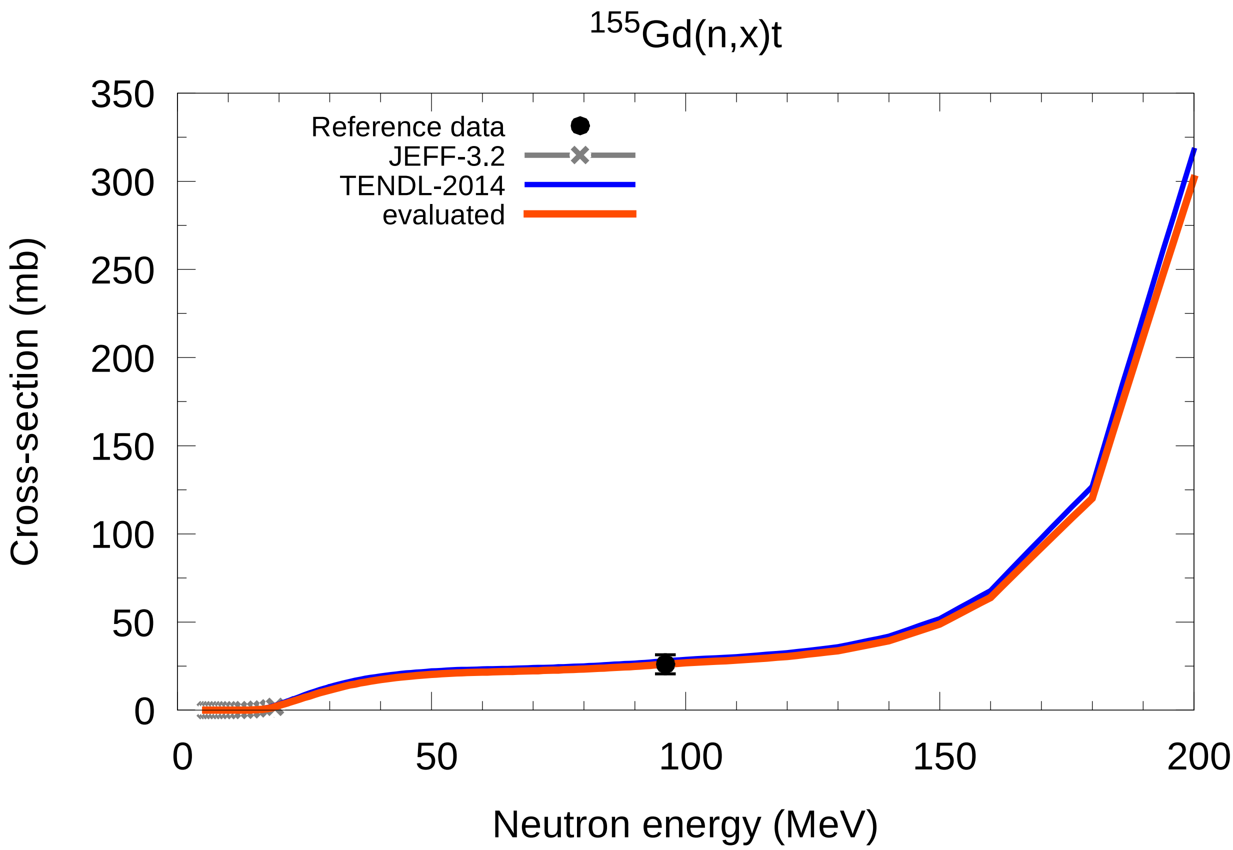
^{153}Eu(n,x)t
Reference data
ENDF/B-VII.1
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500
0
50
100
150
200



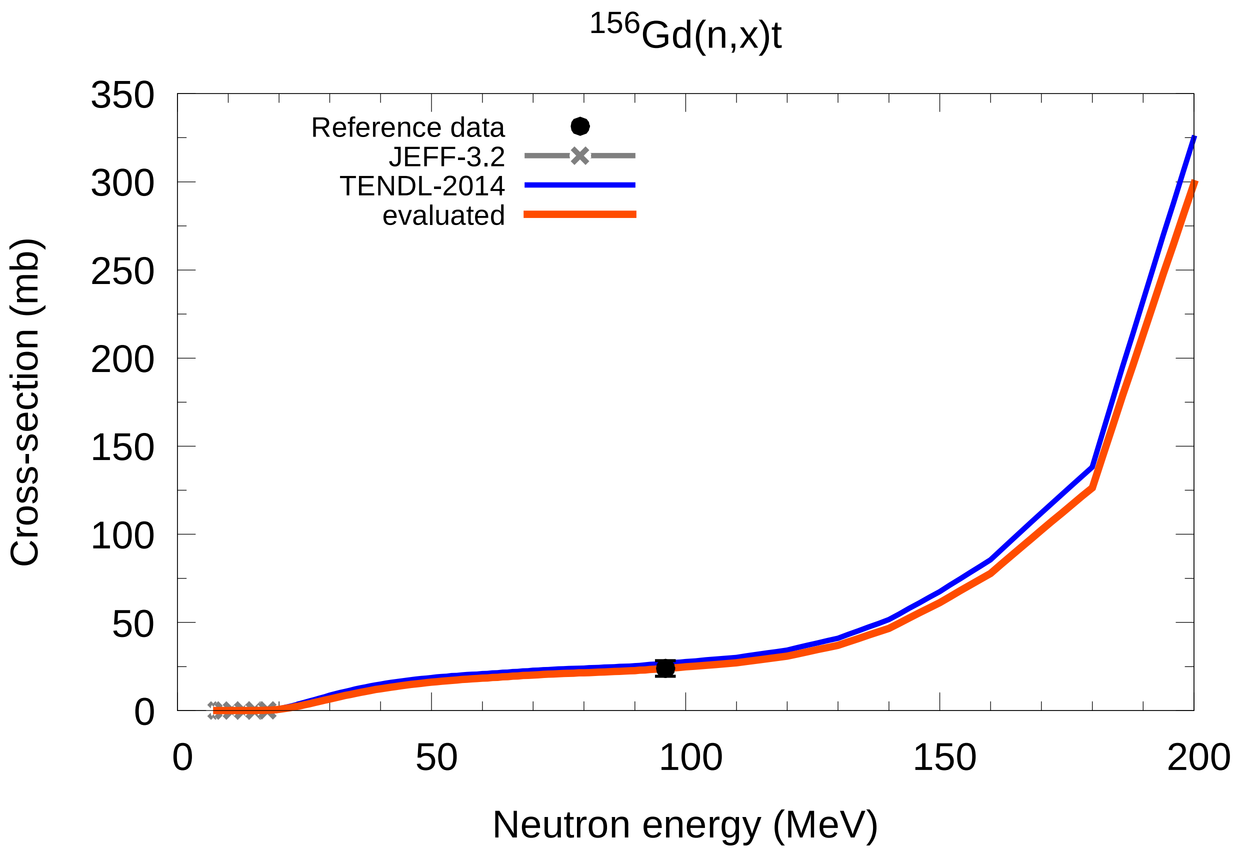
^{152}Gd(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200



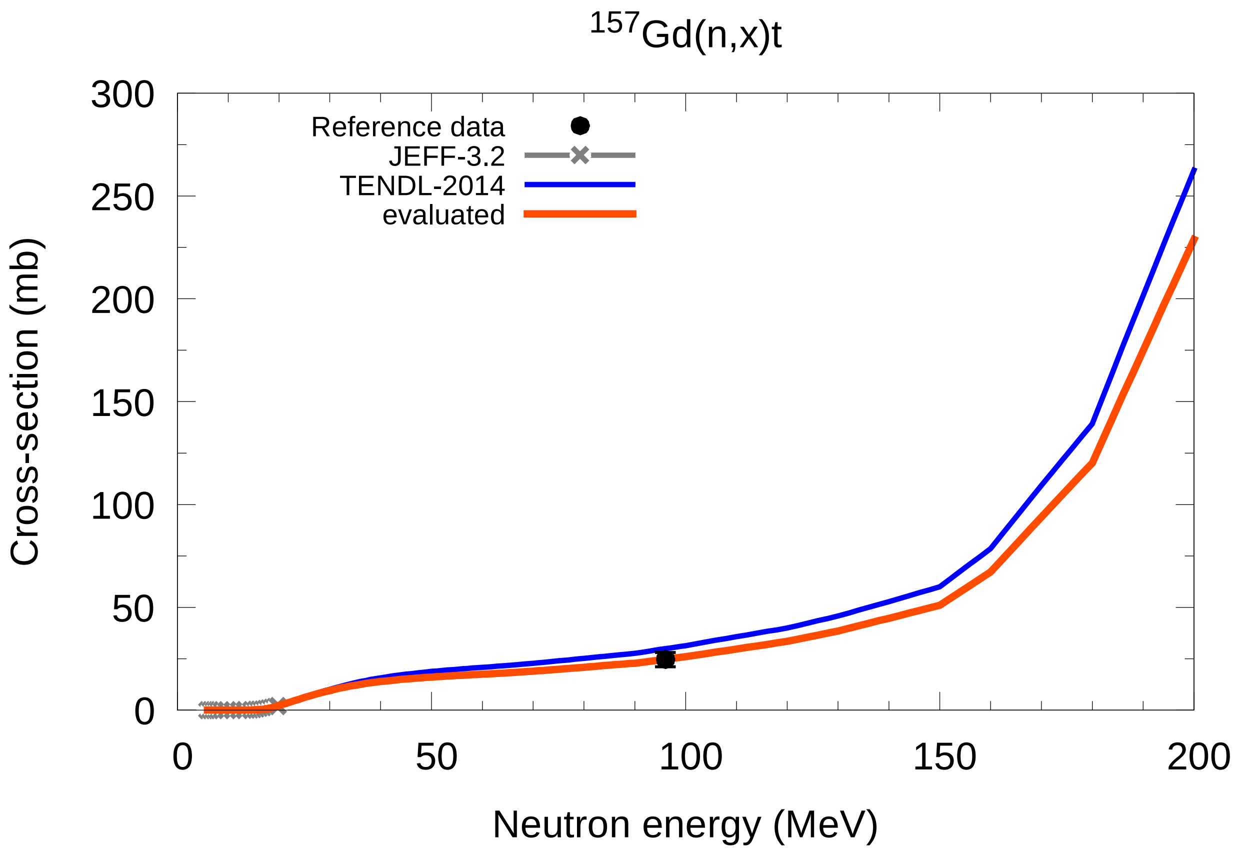
^{154}Gd(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
0
50
100
150
200



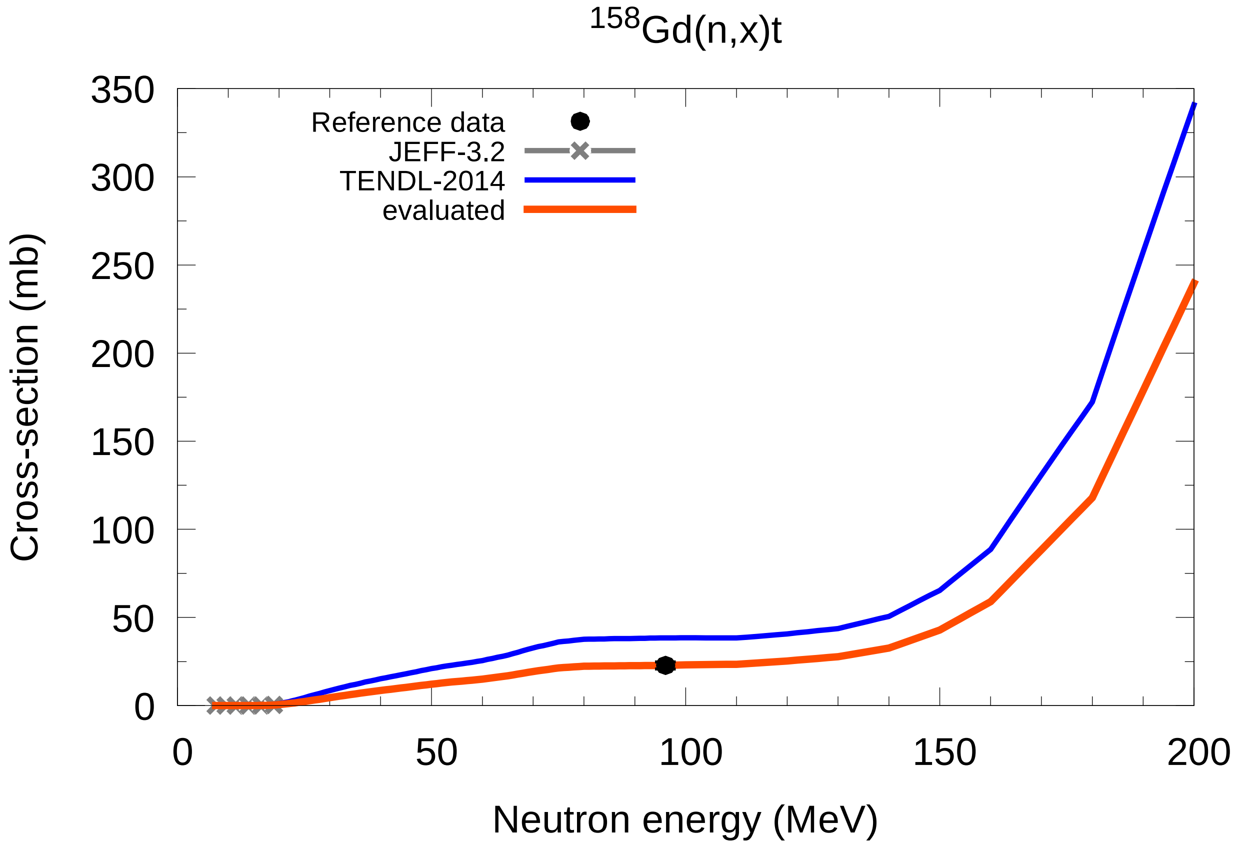
^{155}Gd(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
0
50
100
150
200

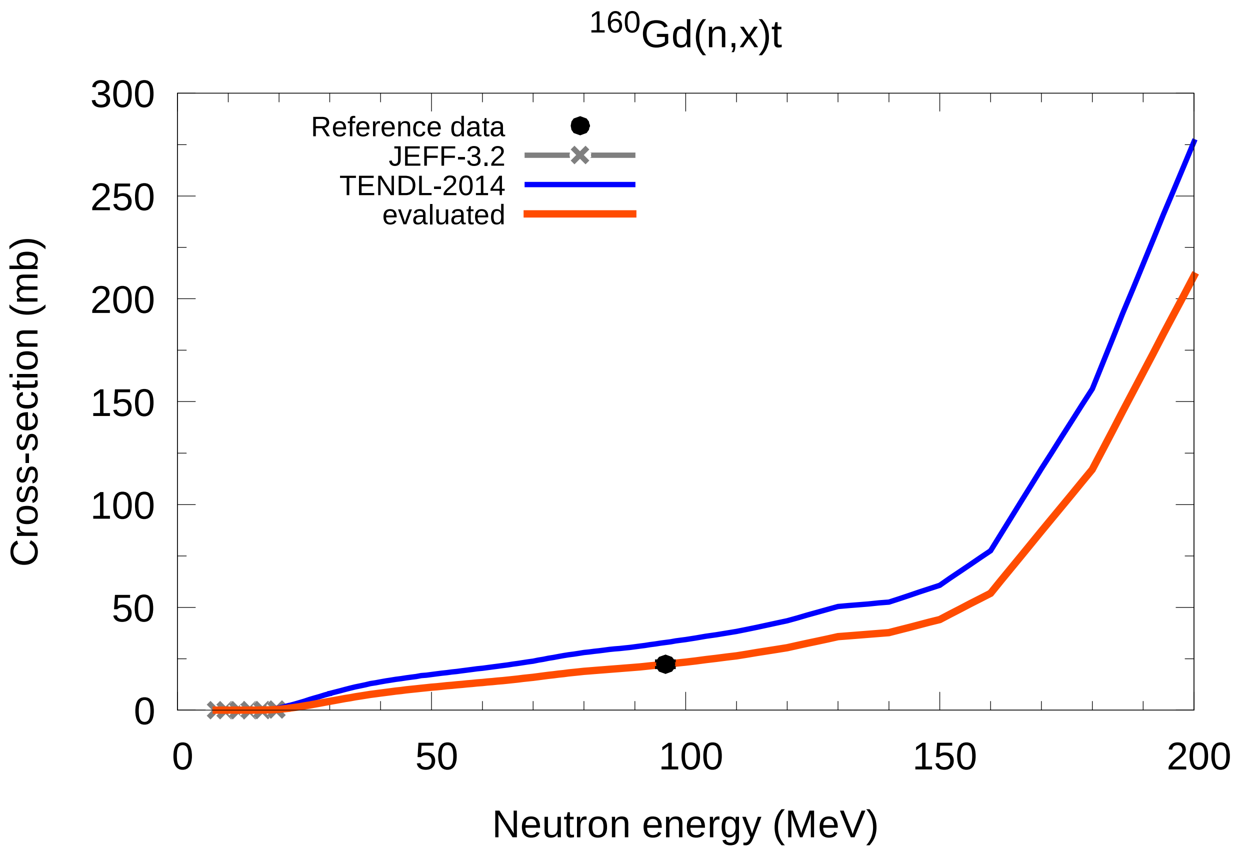


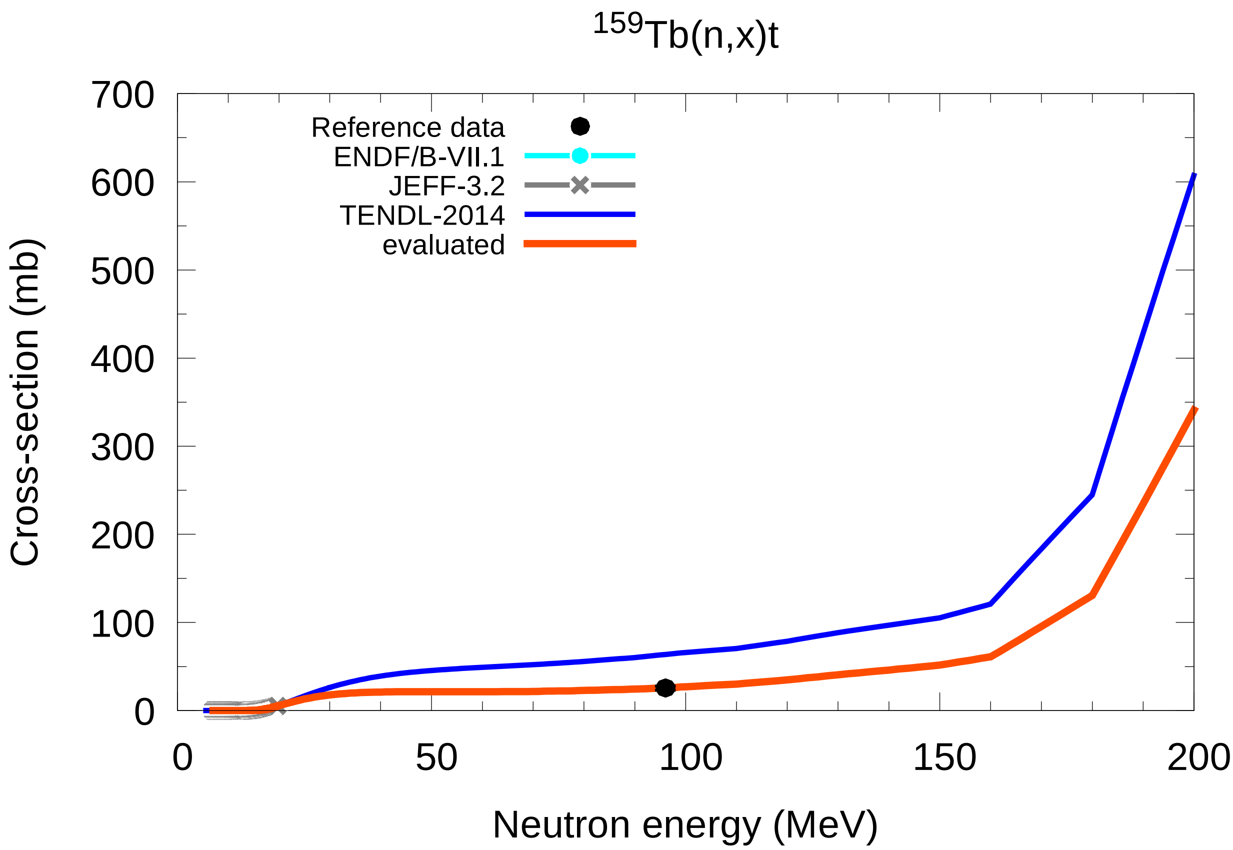
^{156}Gd(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



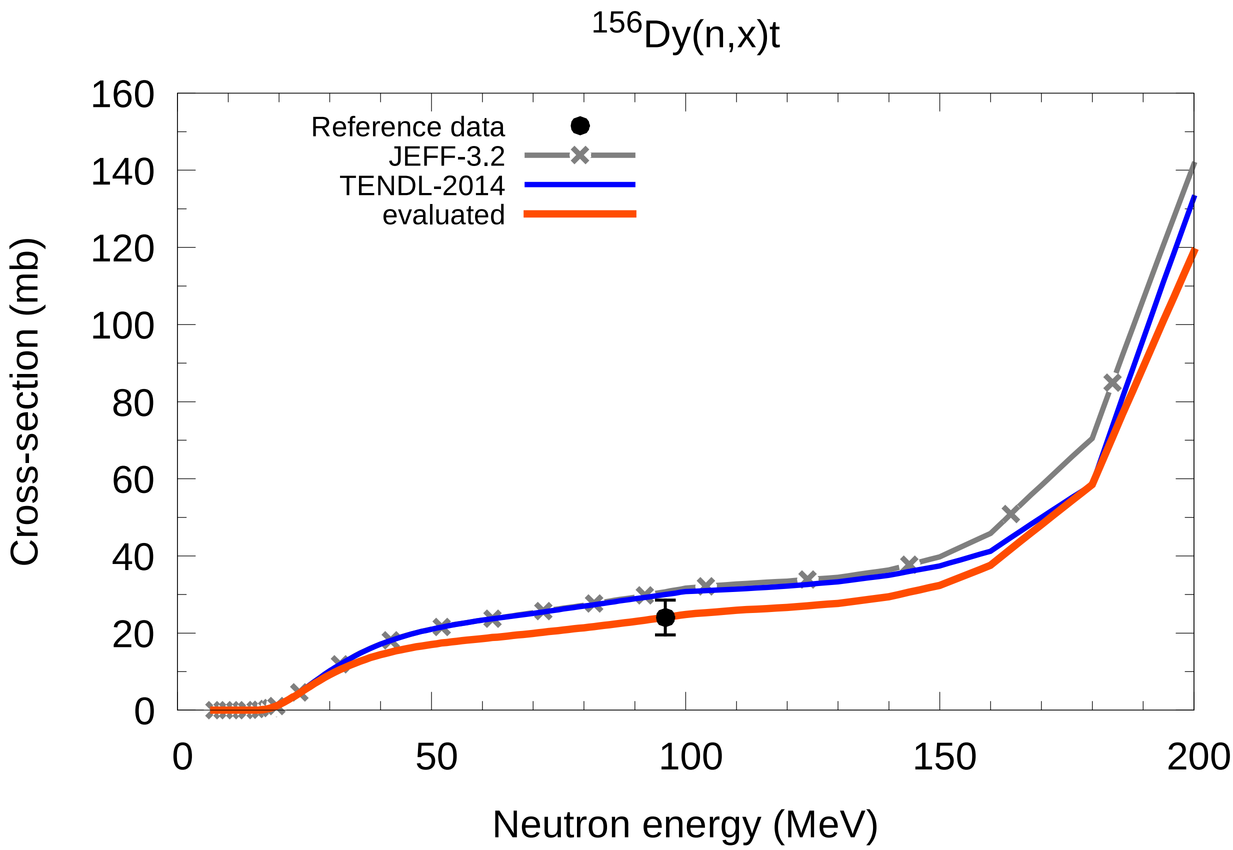
^{157}Gd(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300


$^{158}Gd(n,x)t$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350

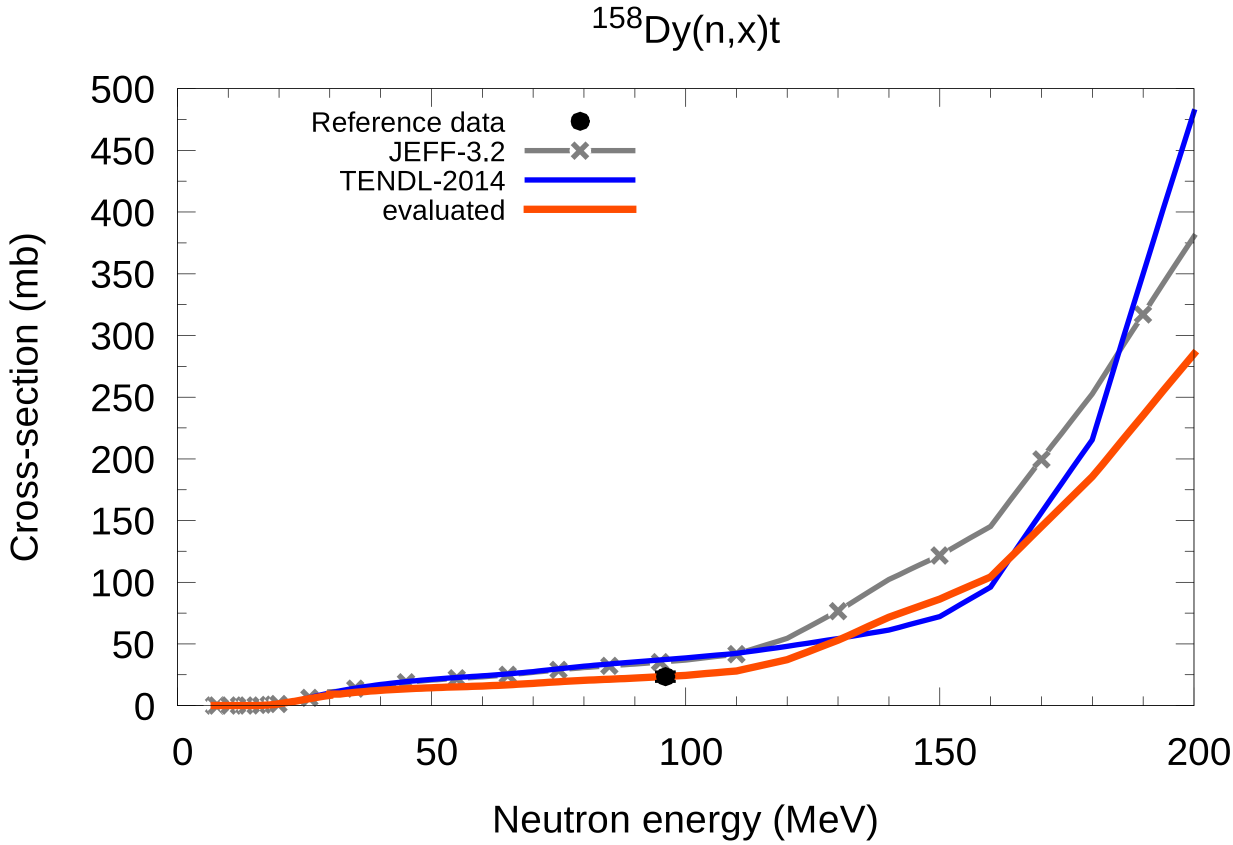

$^{160}Gd(n,x)t$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



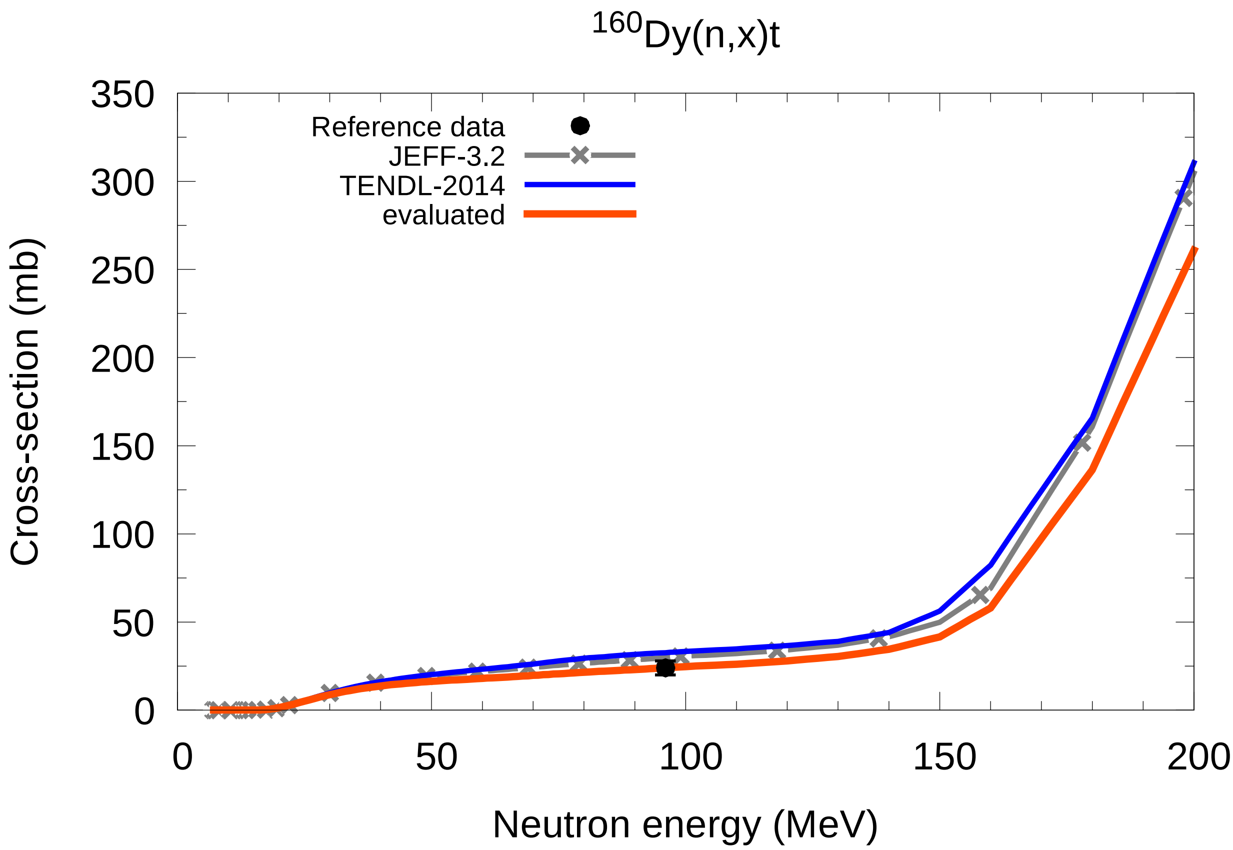
^{159}Tb(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
0
100
200
300
400
500
600
700
0
50
100
150
200
Neutron energy (MeV)



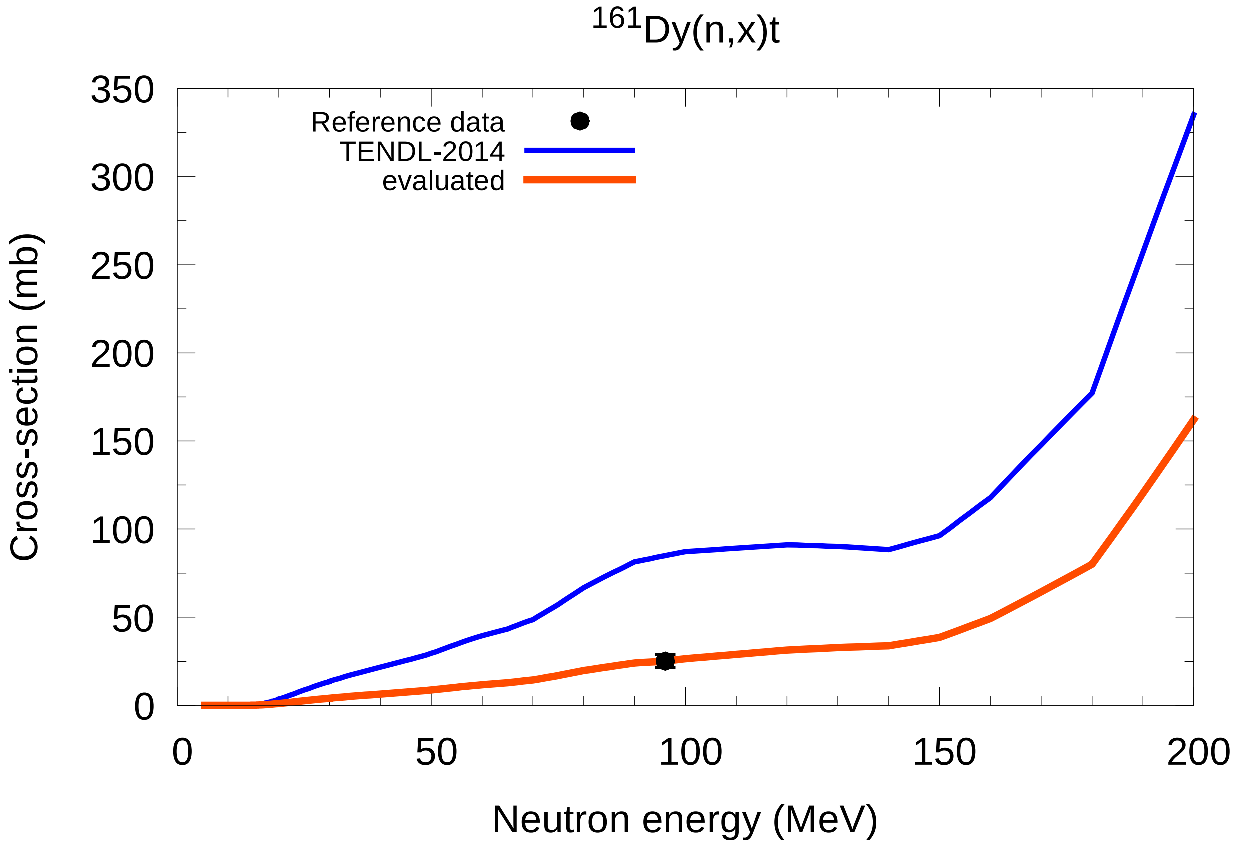
^{156}Dy(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
0
20
40
60
80
100
120
140
160
0
50
100
150
200
Neutron energy (MeV)



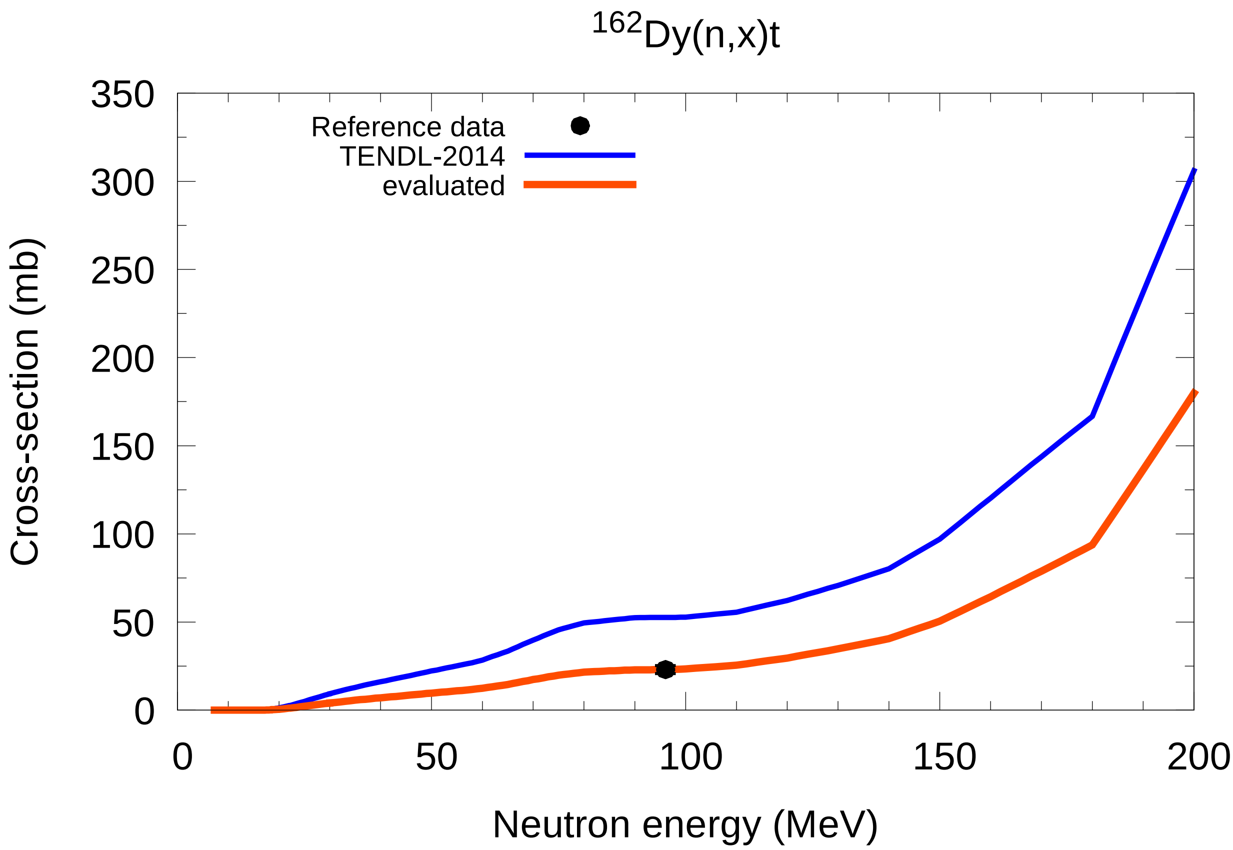
158Dy(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



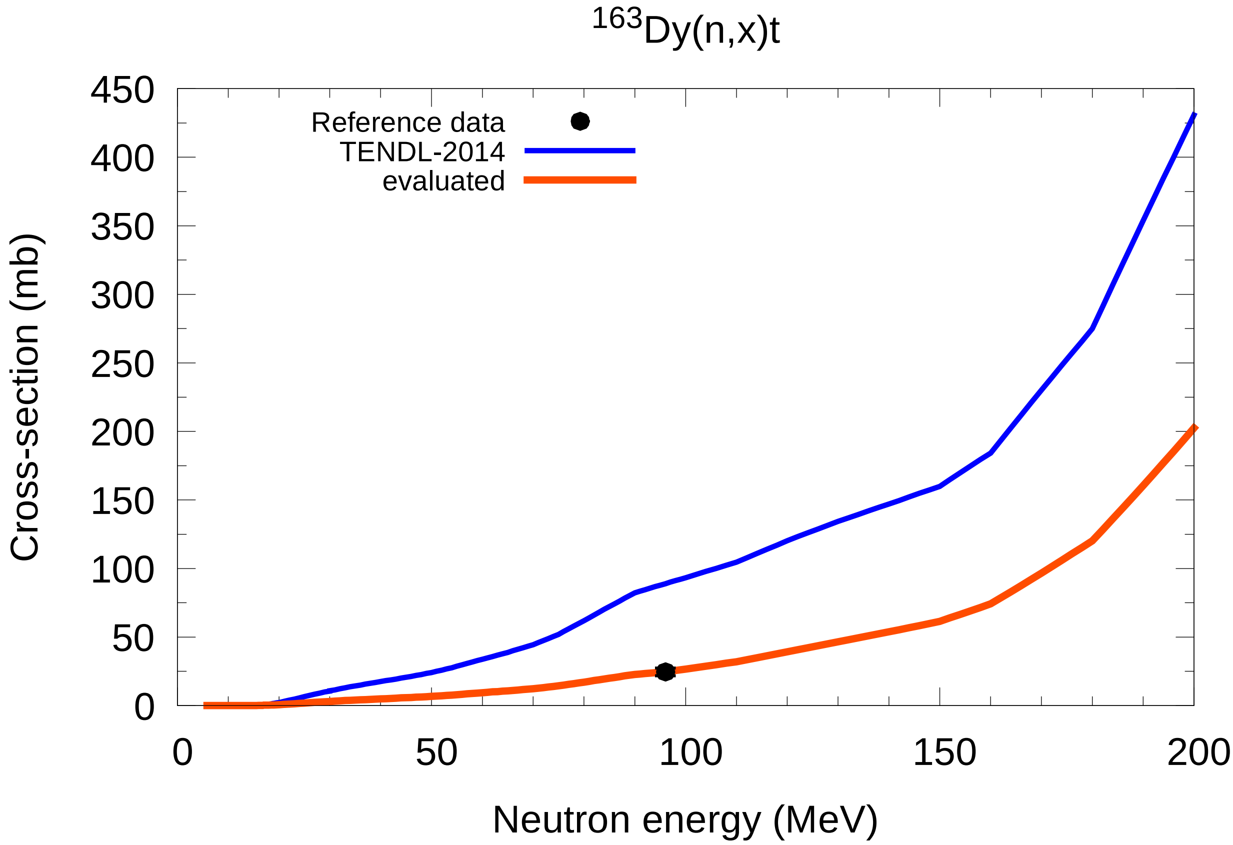
160Dy(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



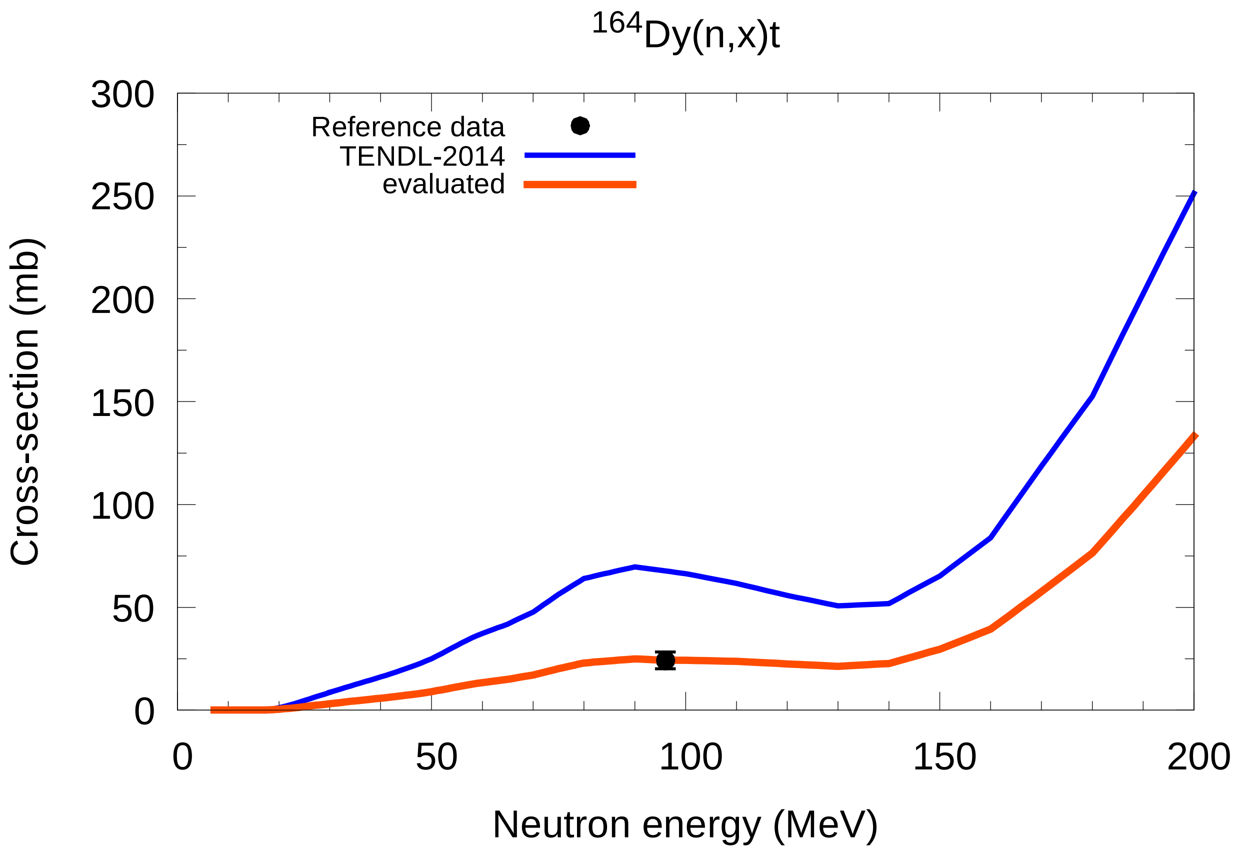
^{161}Dy(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



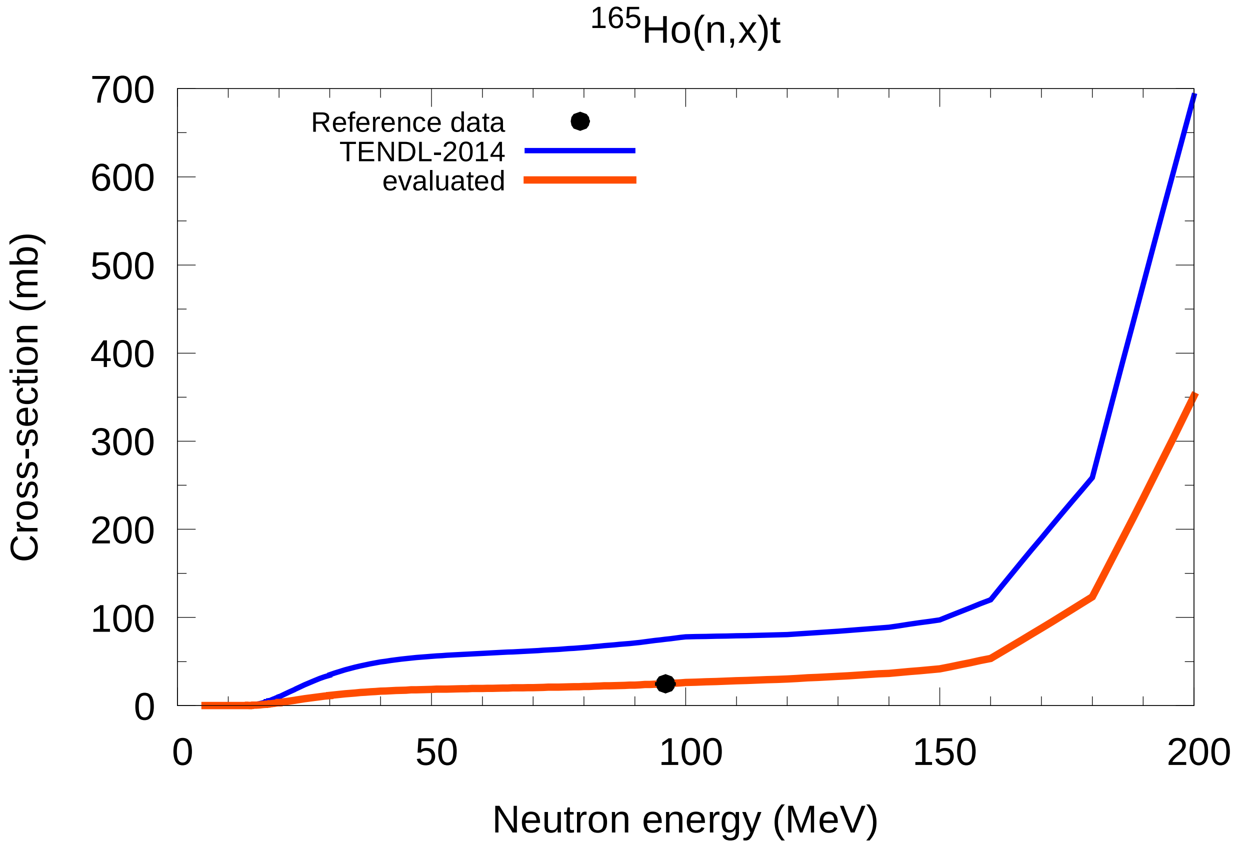
^{162}Dy(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



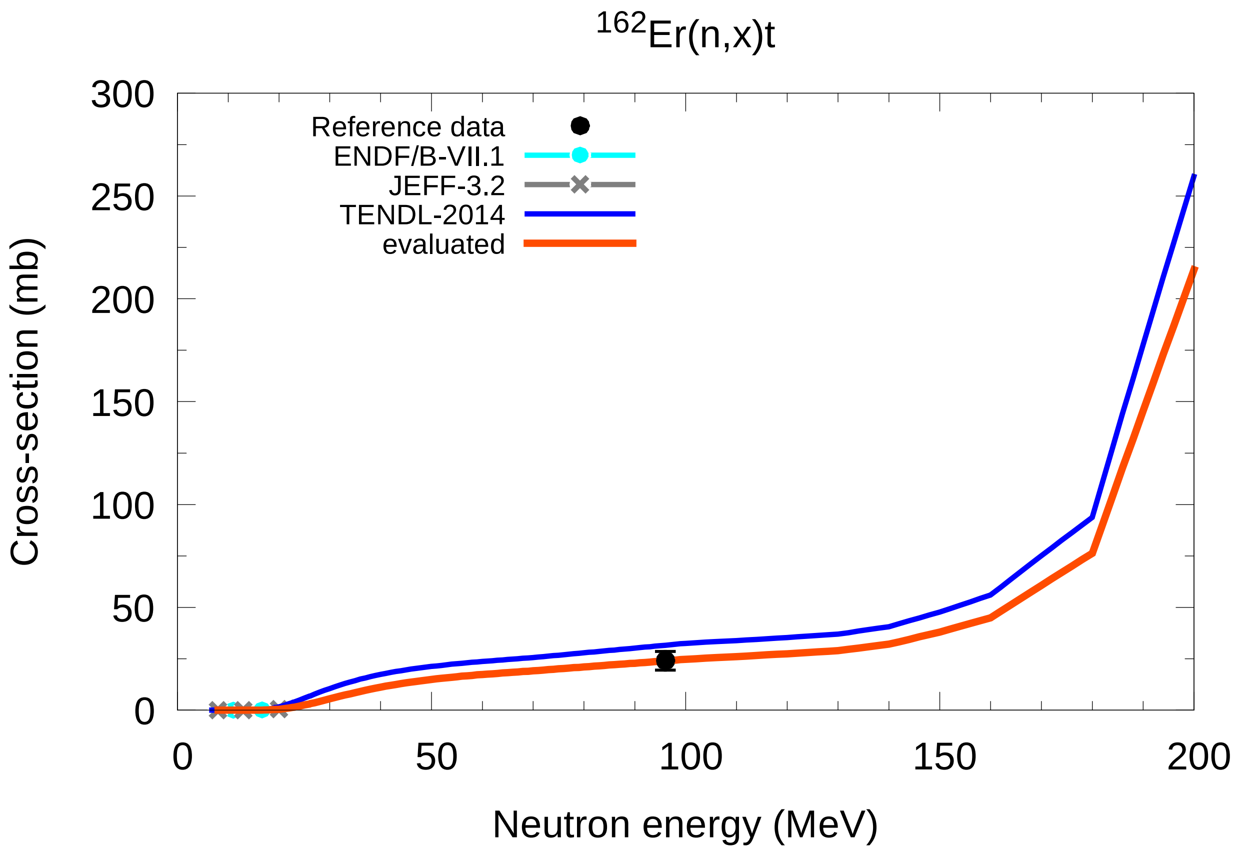
^{163}Dy(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
0
50
100
150
200



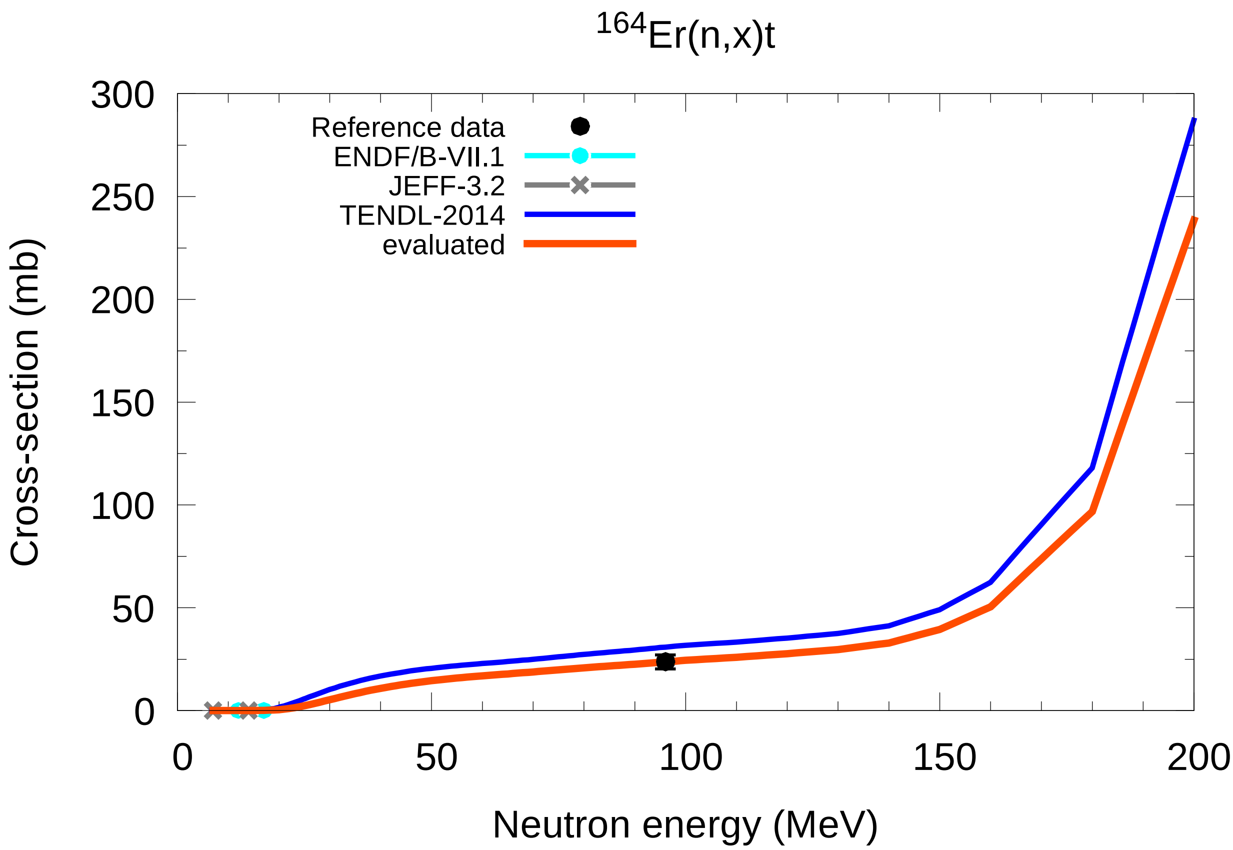
^{164}Dy(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
0
50
100
150
200



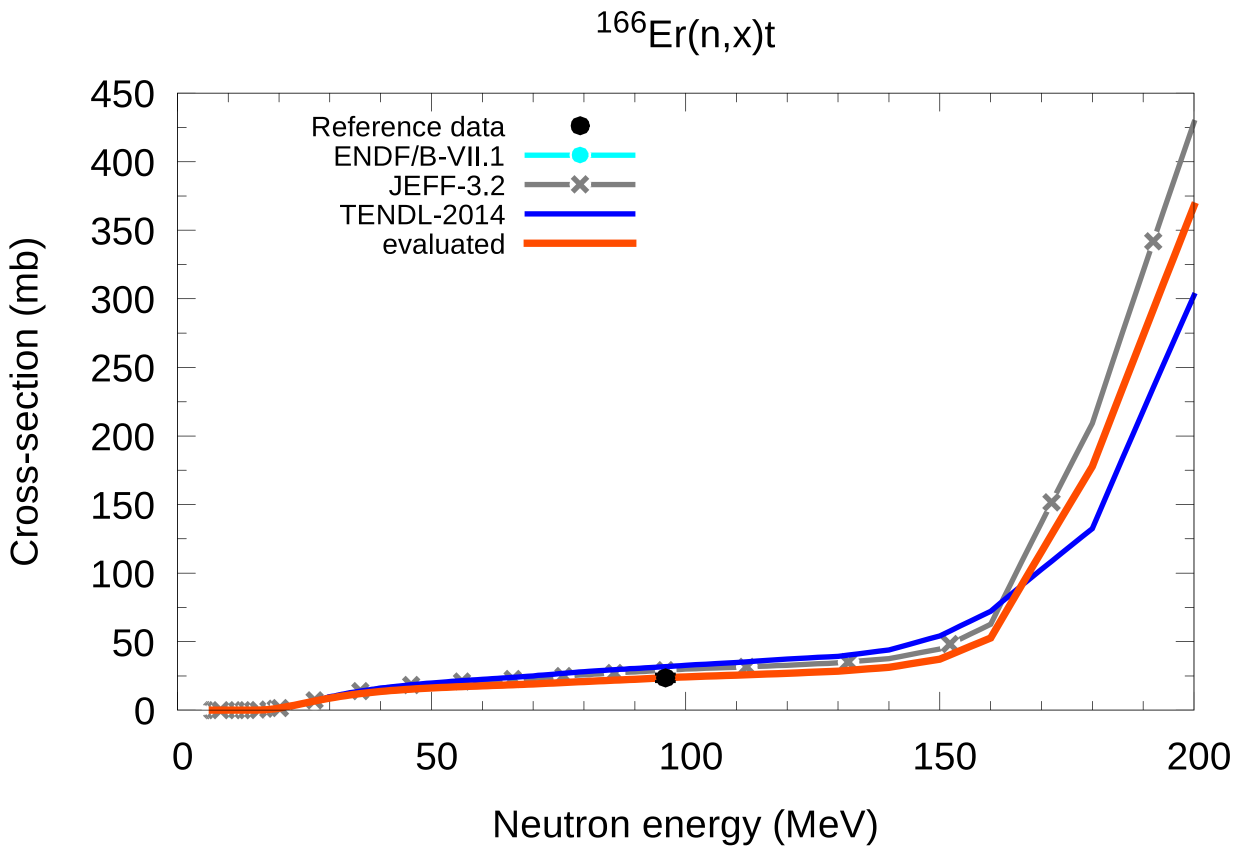
165Ho(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200



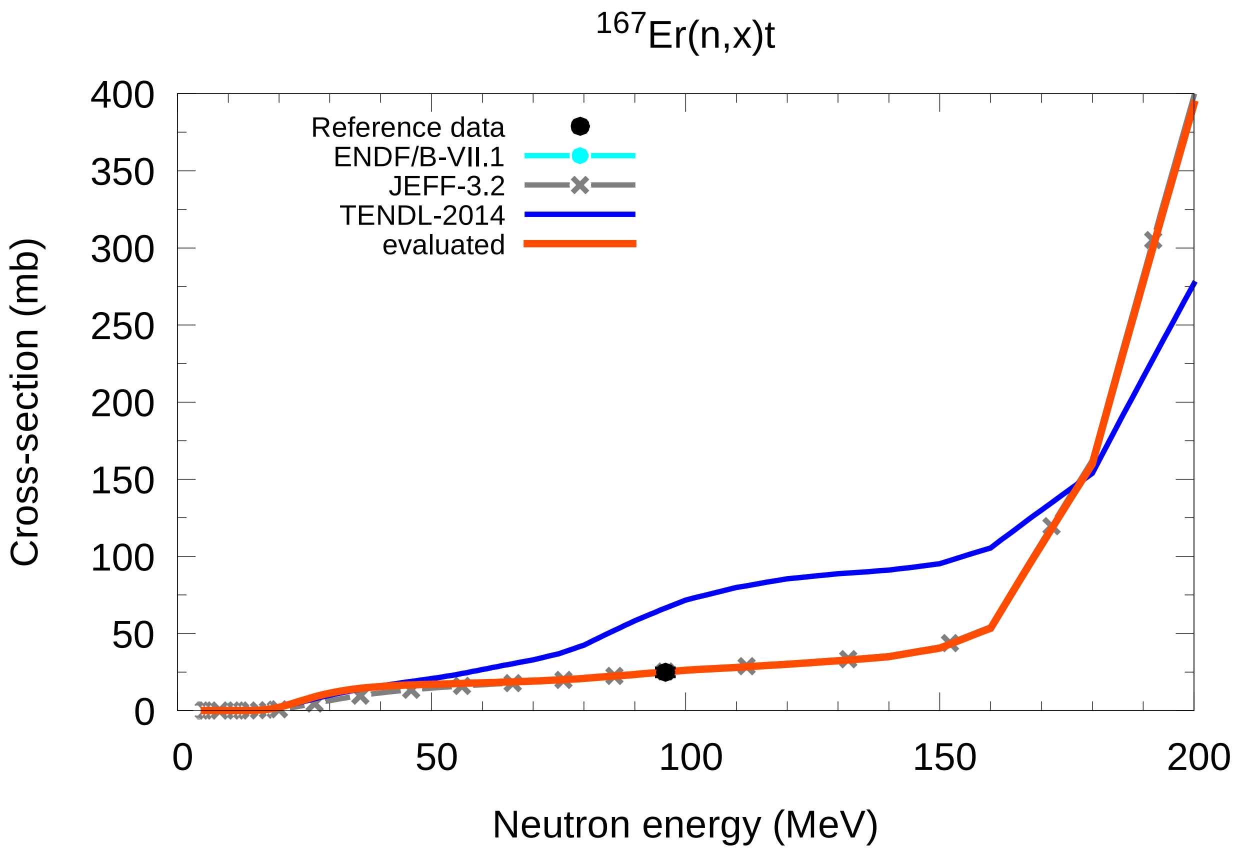
162Er(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
0
50
100
150
200



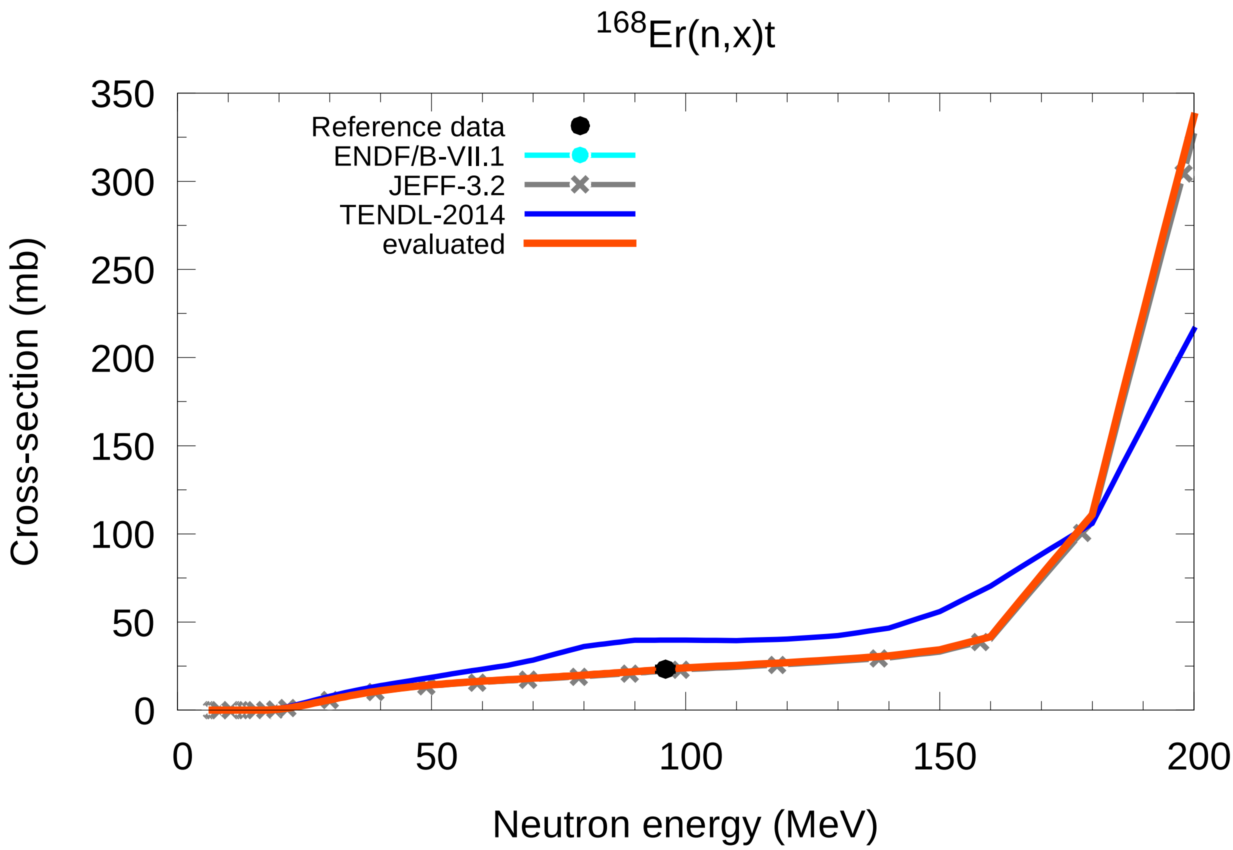
^{164}Er(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



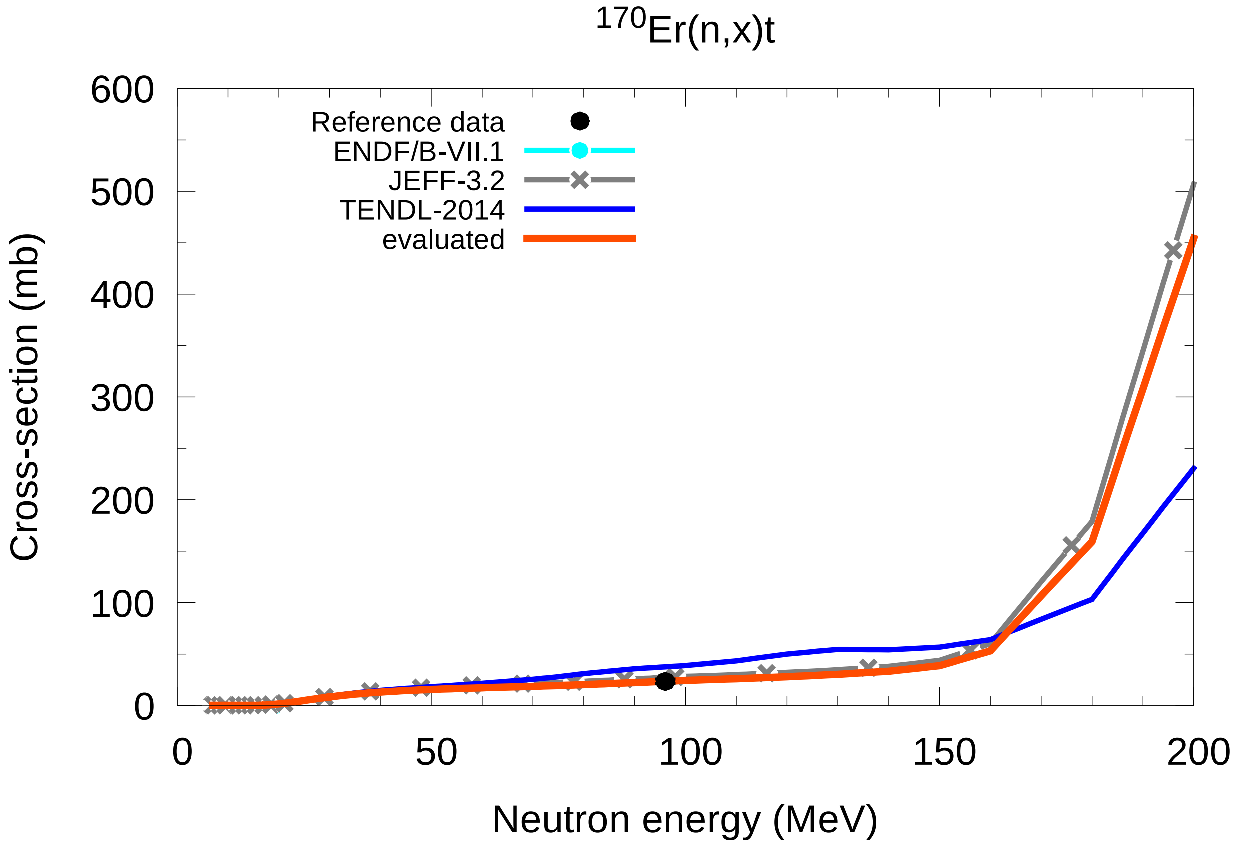
^{166}Er(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



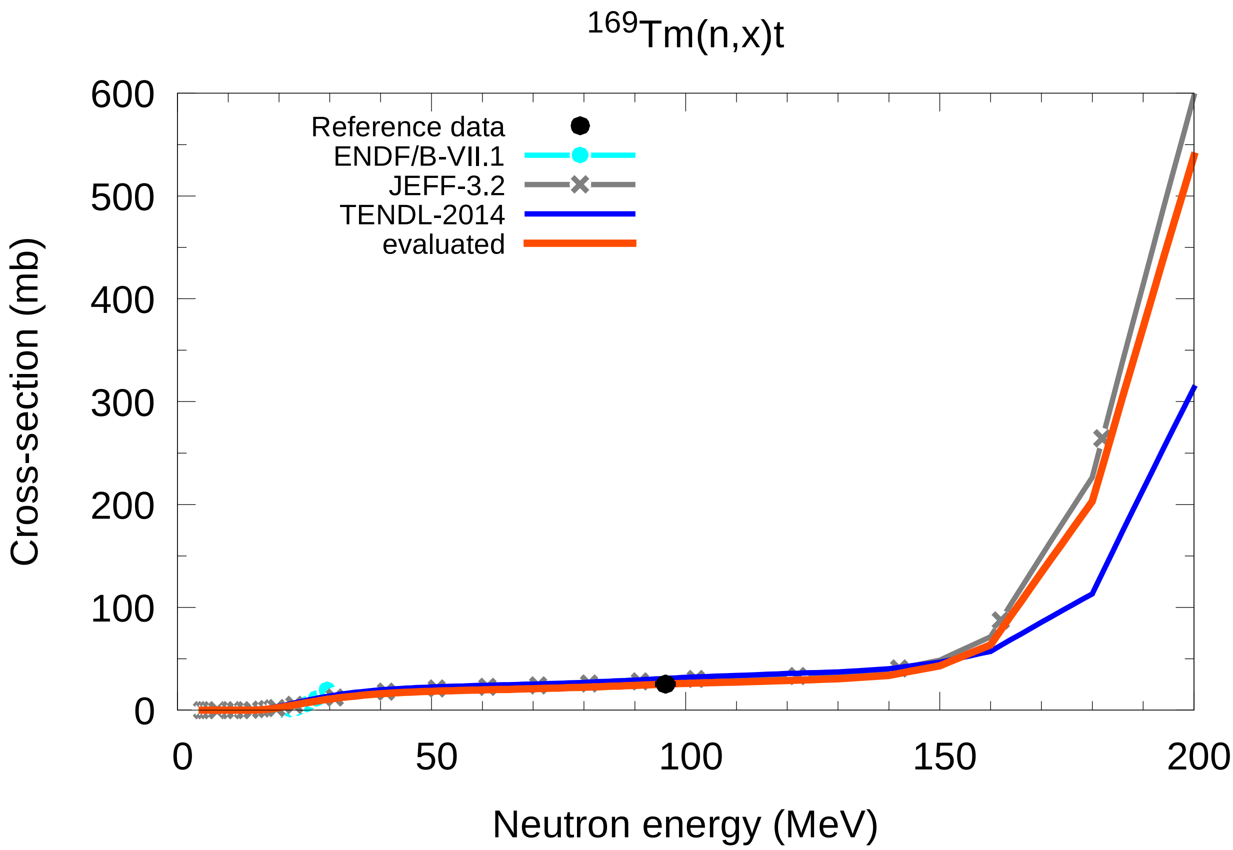
167Er(n,x)t
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300
350
400



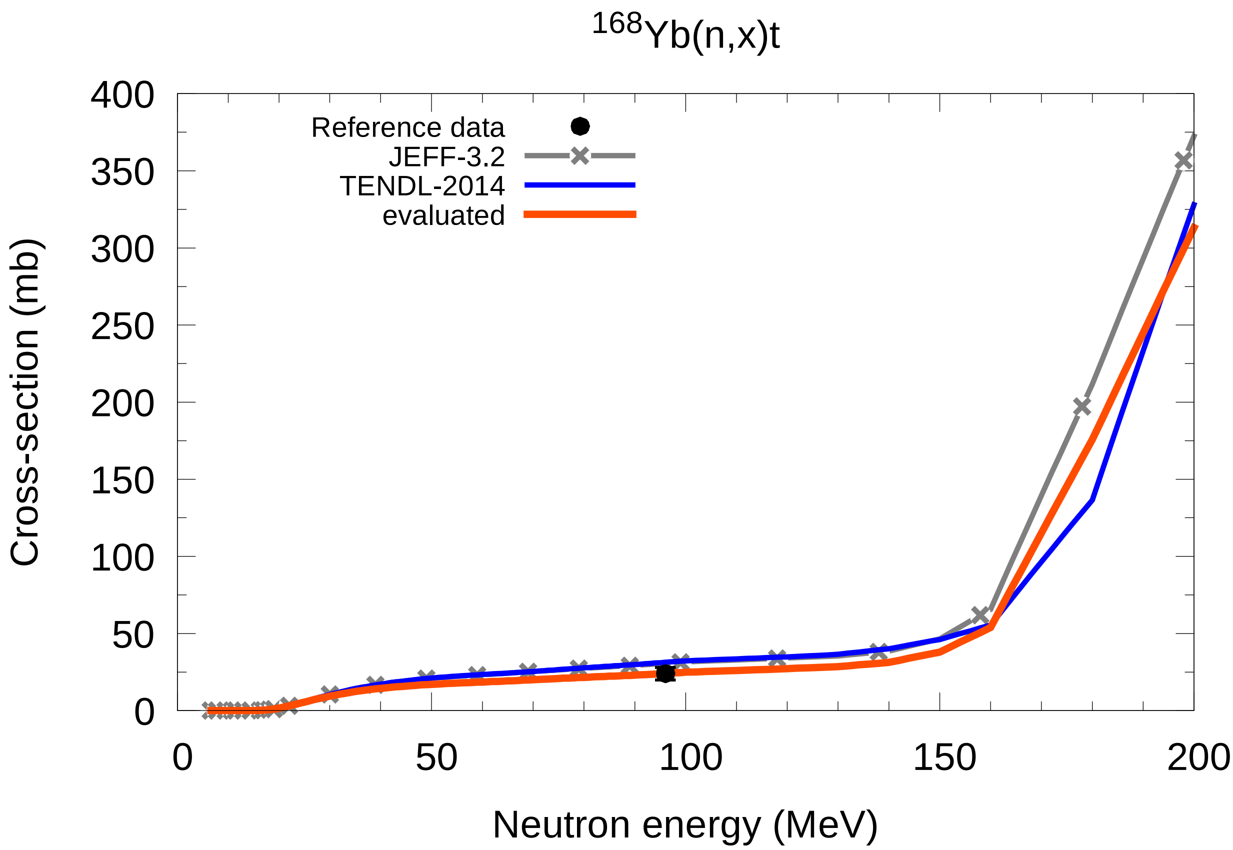
168Er(n,x)t
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300
350



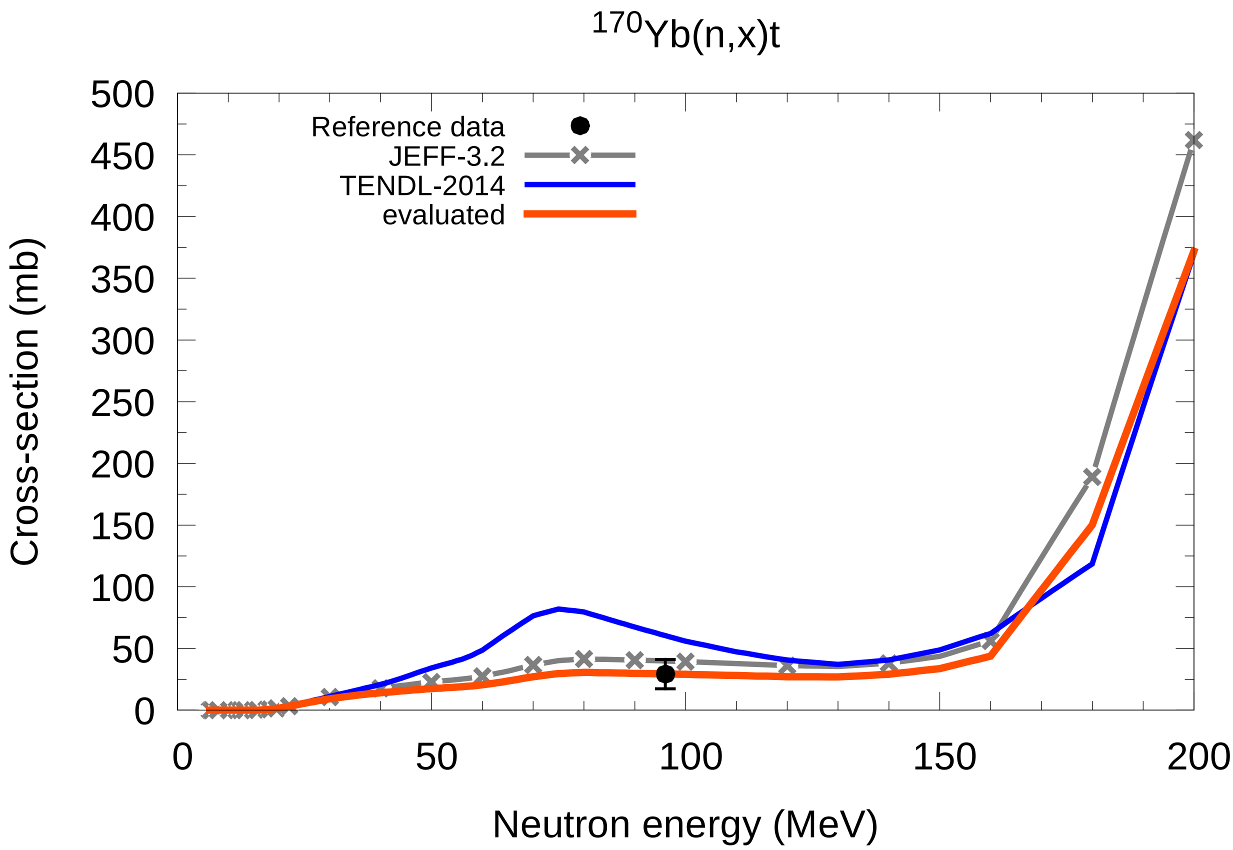
^{170}Er(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



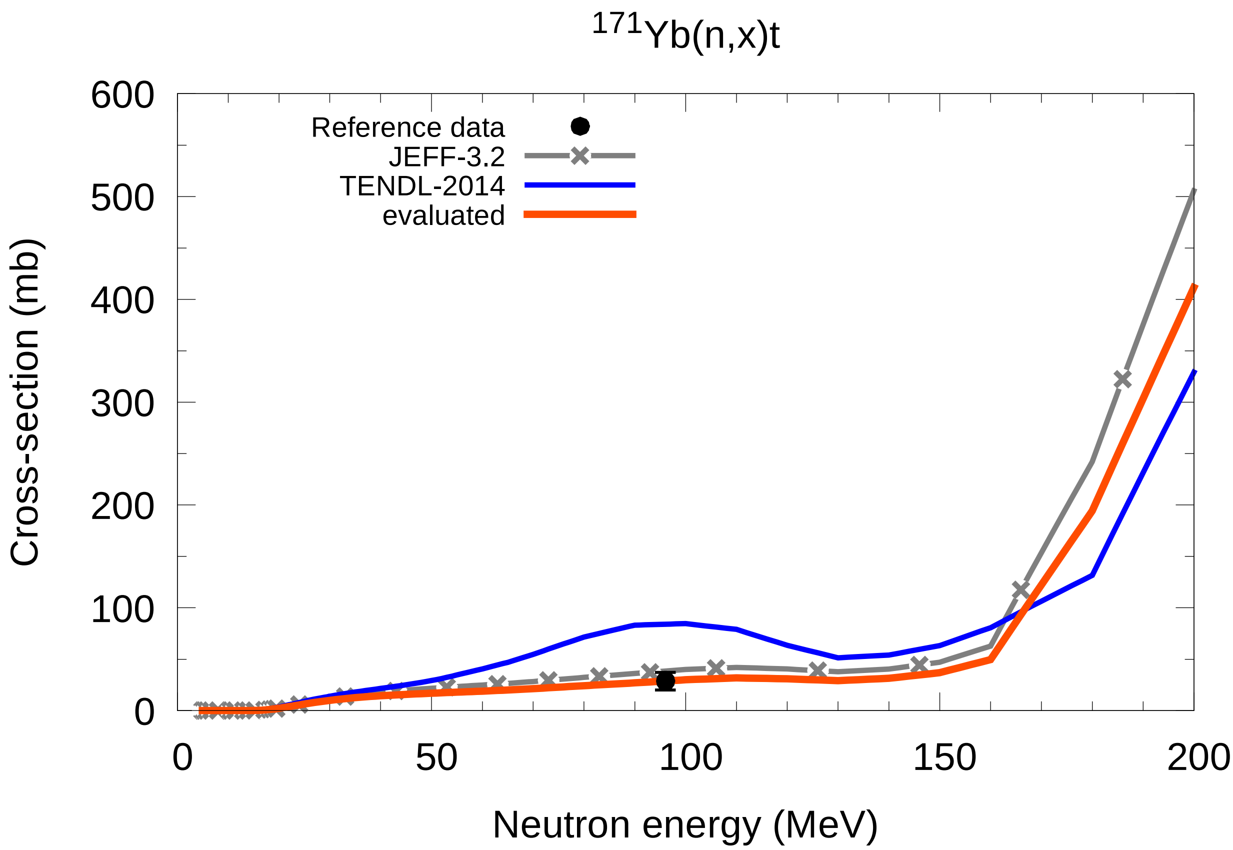
^{169}Tm(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200

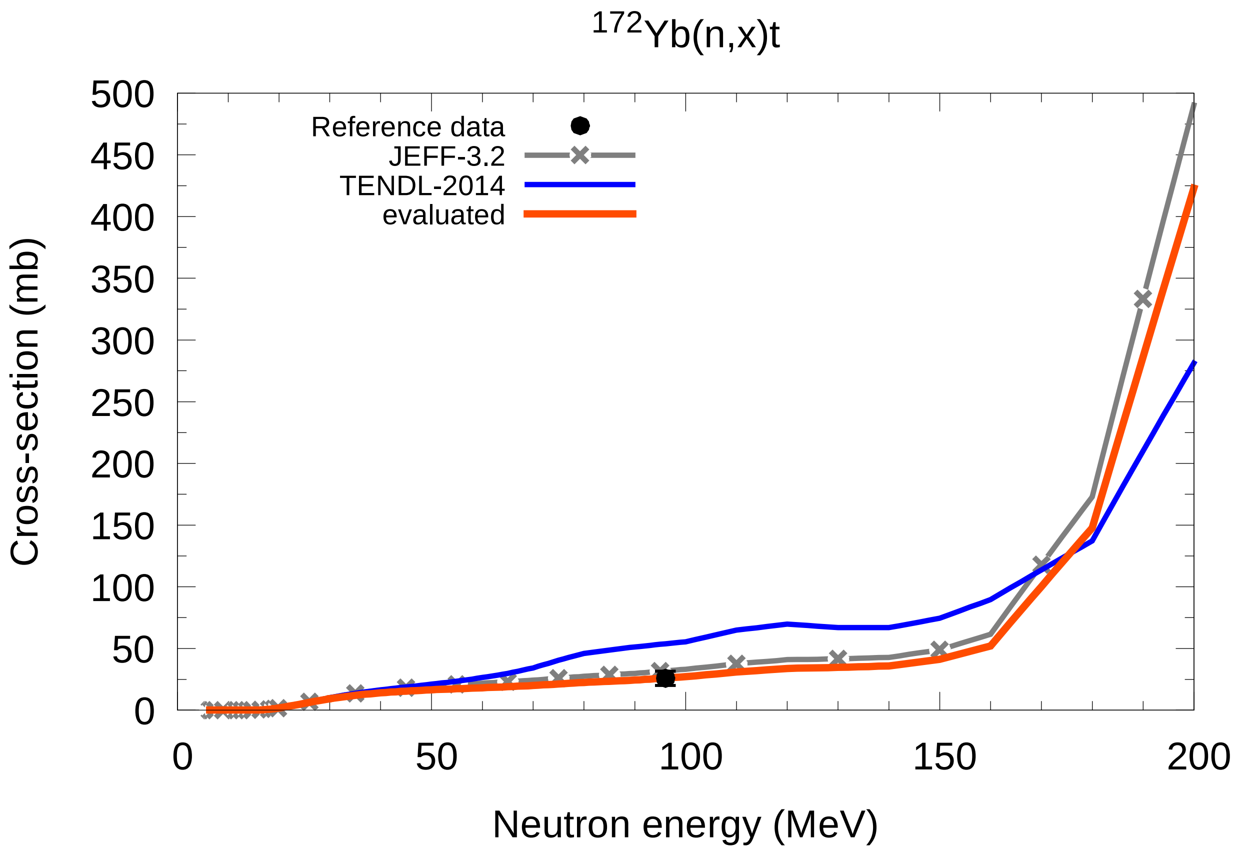


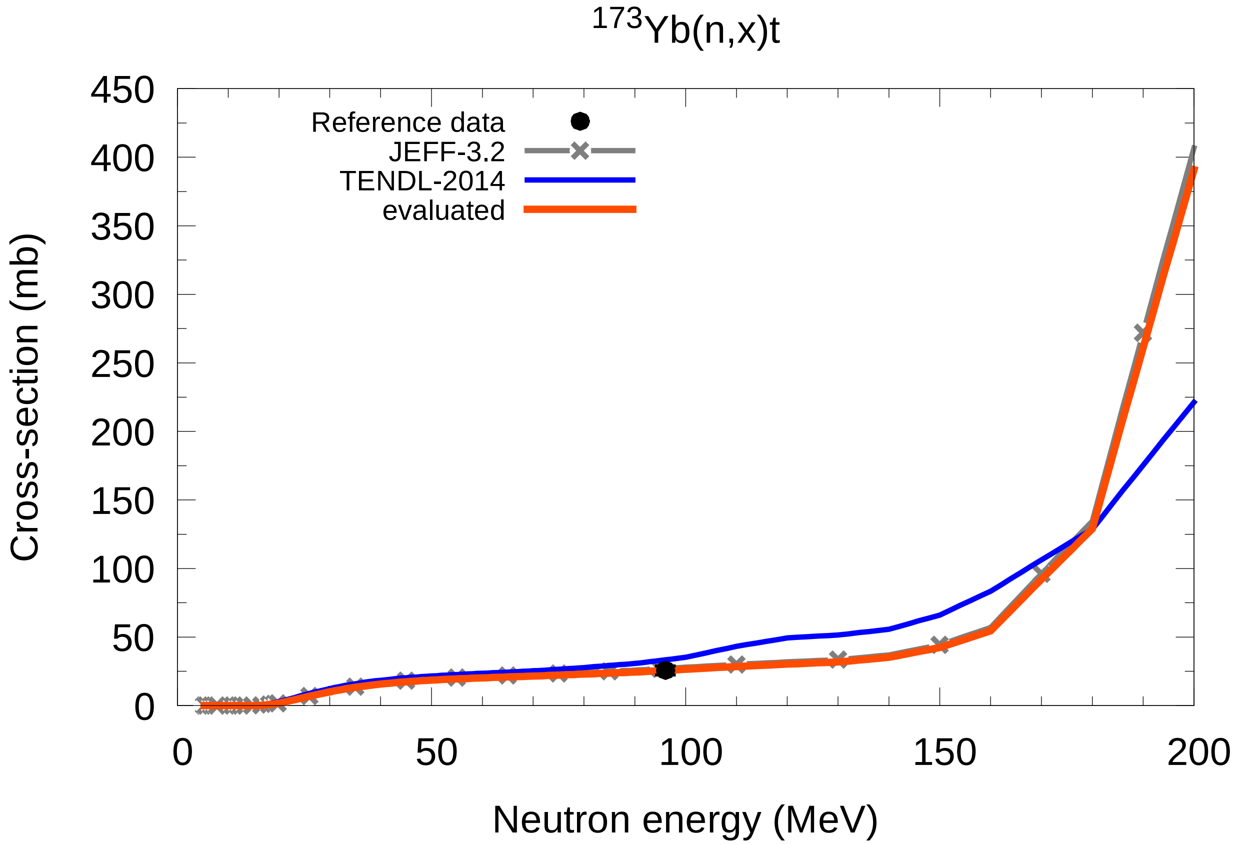
^{168}Yb(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



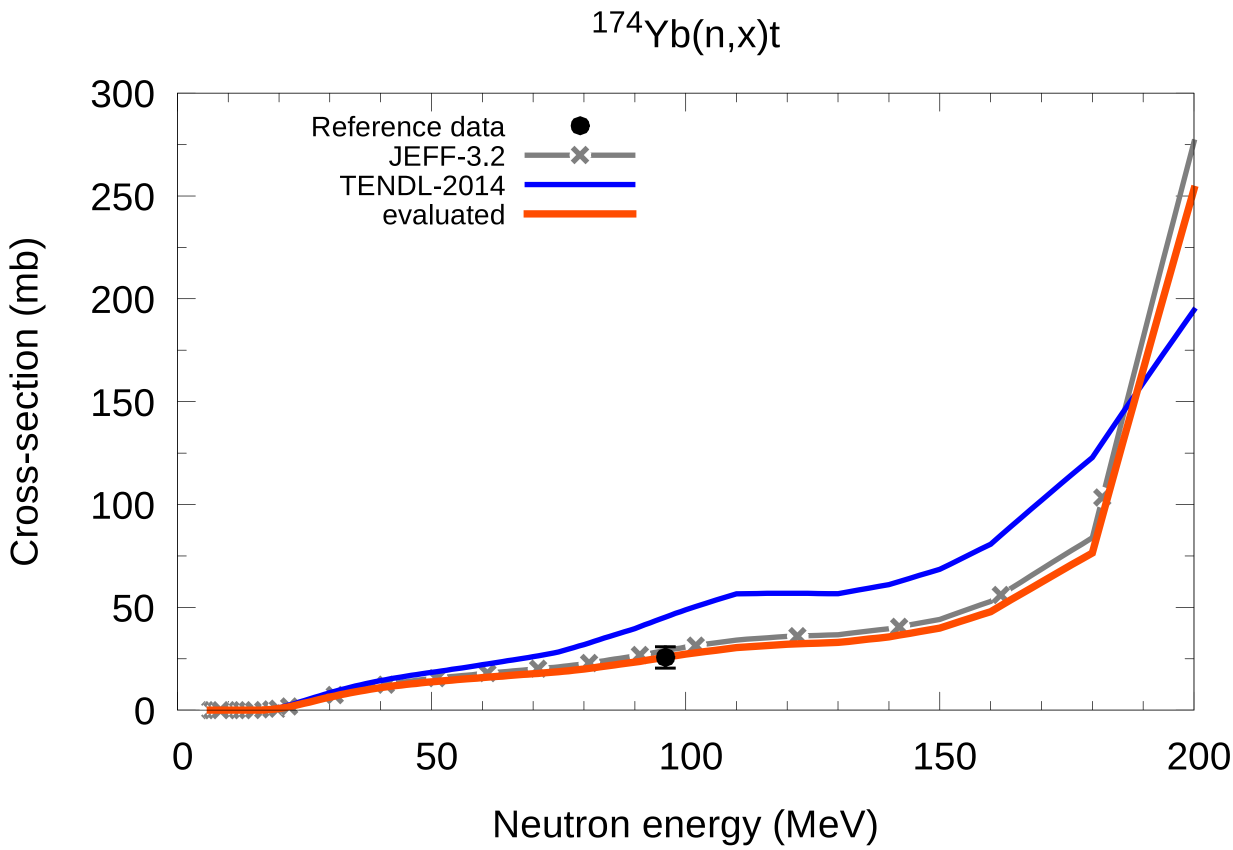
^{170}Yb(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500


$^{171}Yb(n,x)t$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
50
150

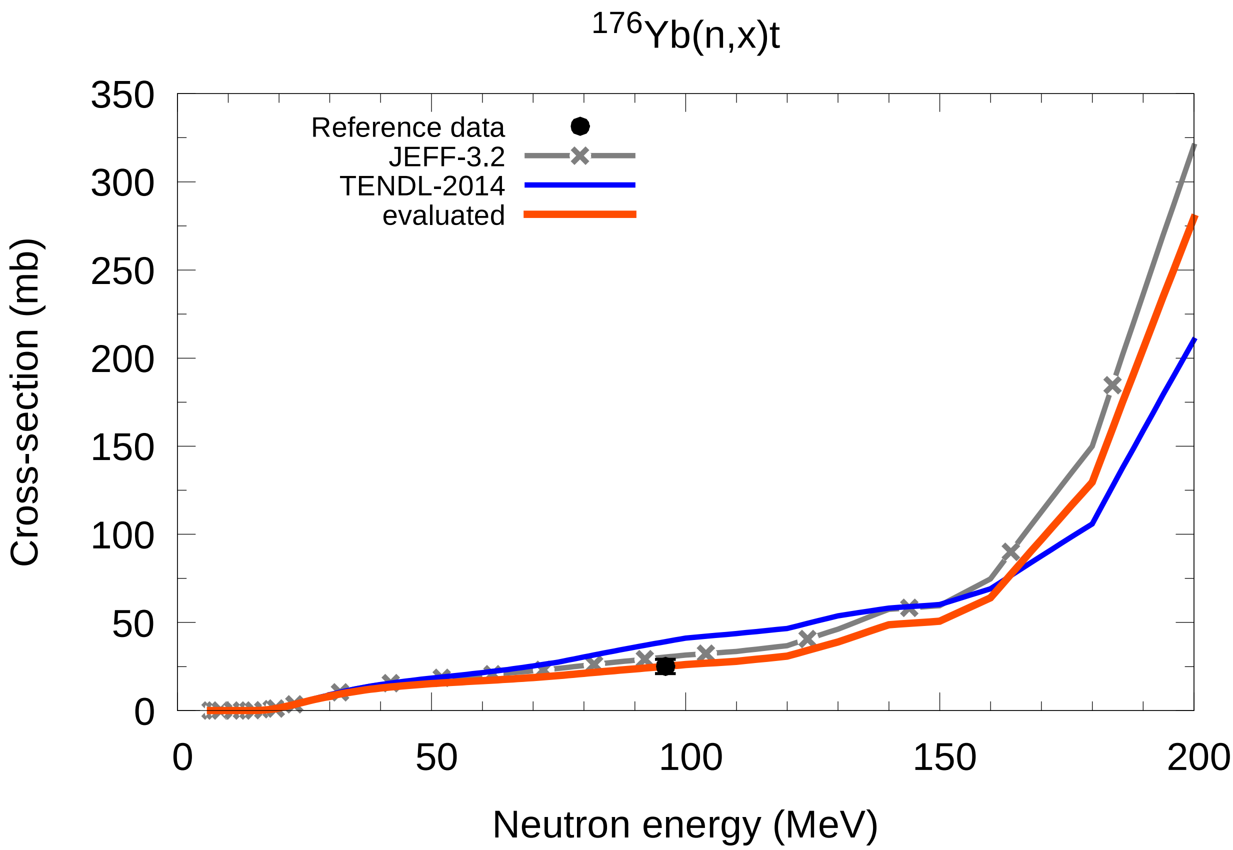

$^{172}Yb(n,x)t$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



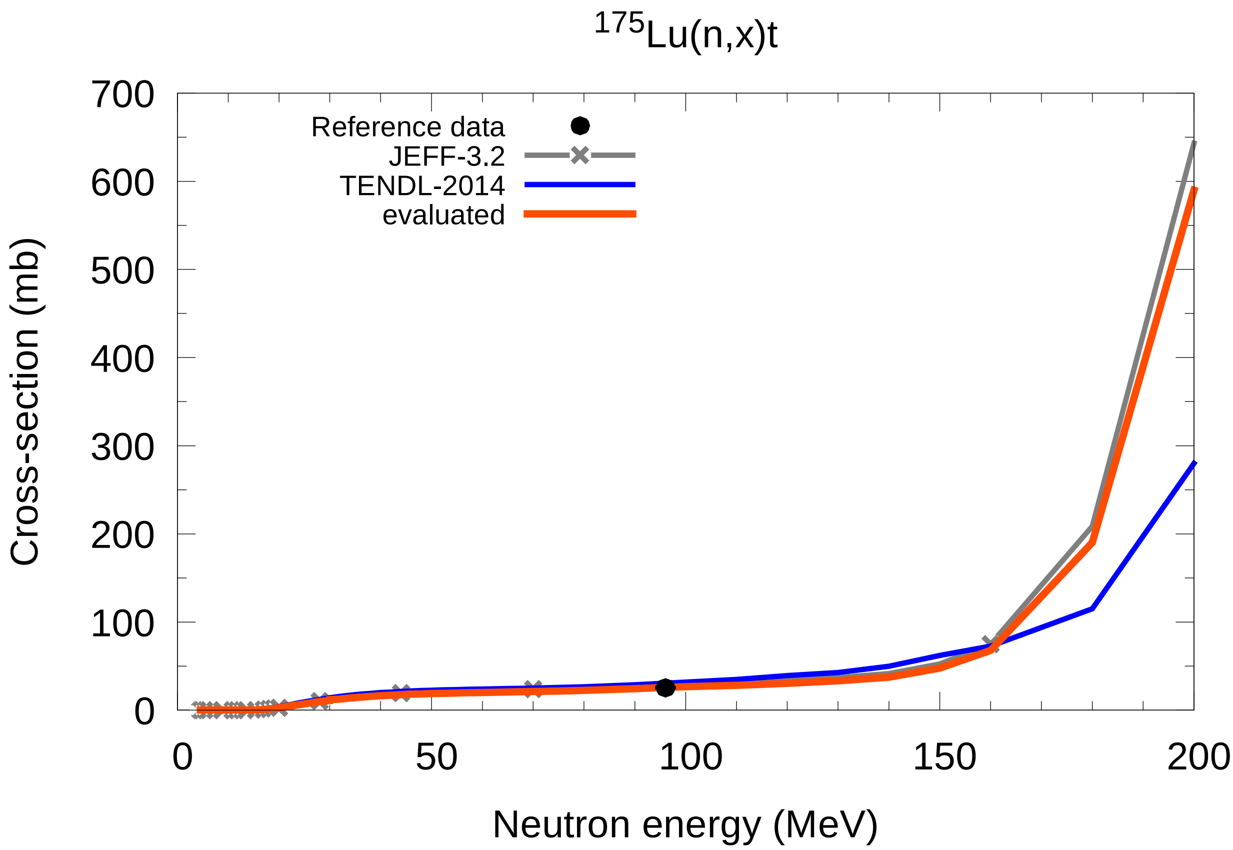
173Yb(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
0
50
100
150
200
250
300
350
400
450
0
50
100
150
200
Neutron energy (MeV)



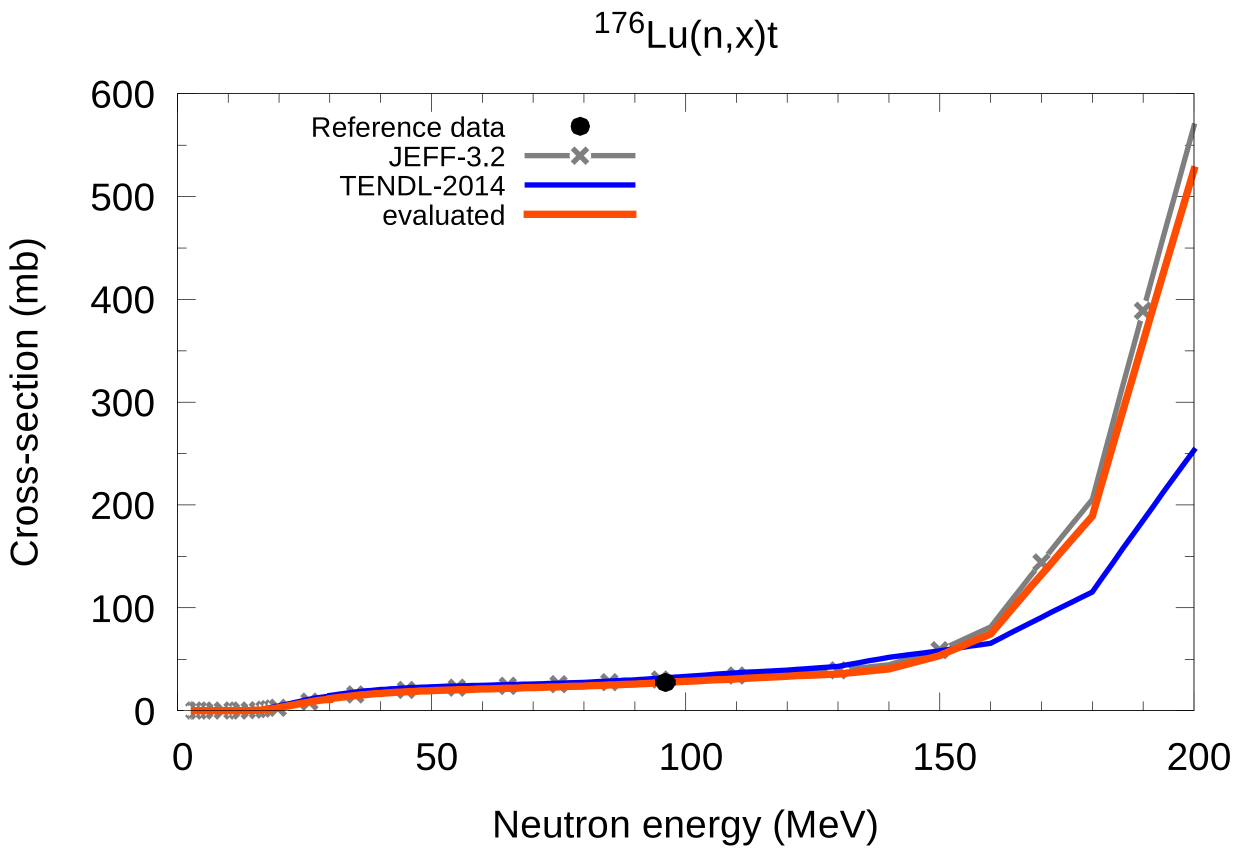
174Yb(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
0
50
100
150
200
250
300
0
50
100
150
200
Neutron energy (MeV)



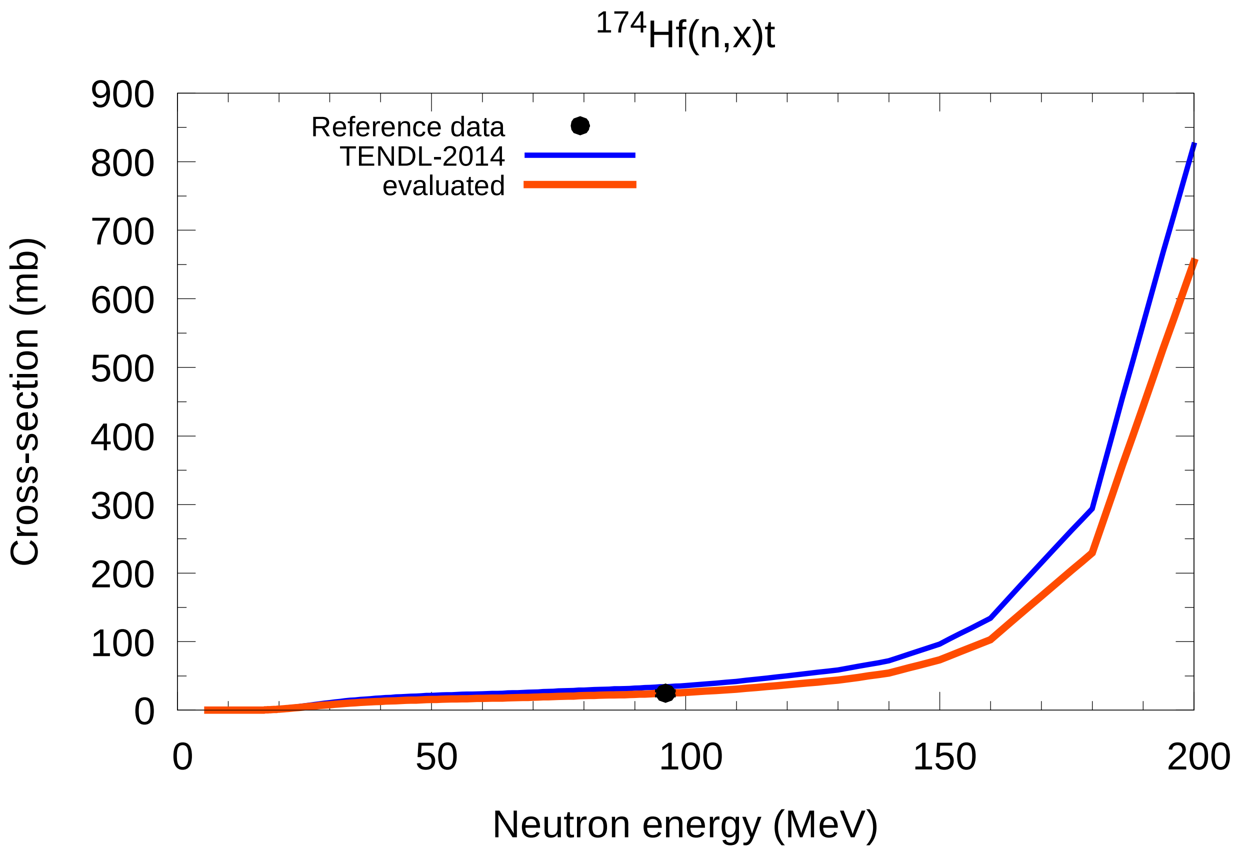
^{176}Yb(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
0
50
100
150
200



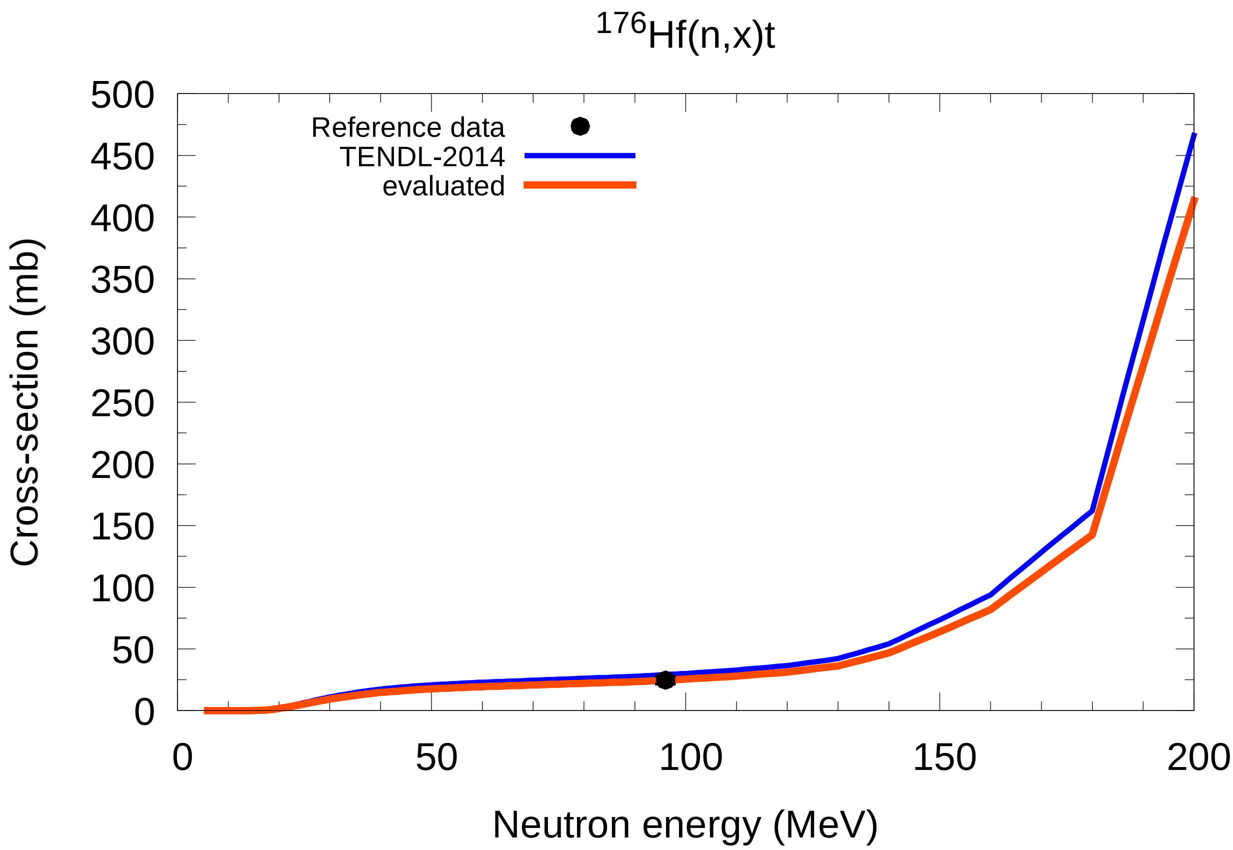
^{175}Lu(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200



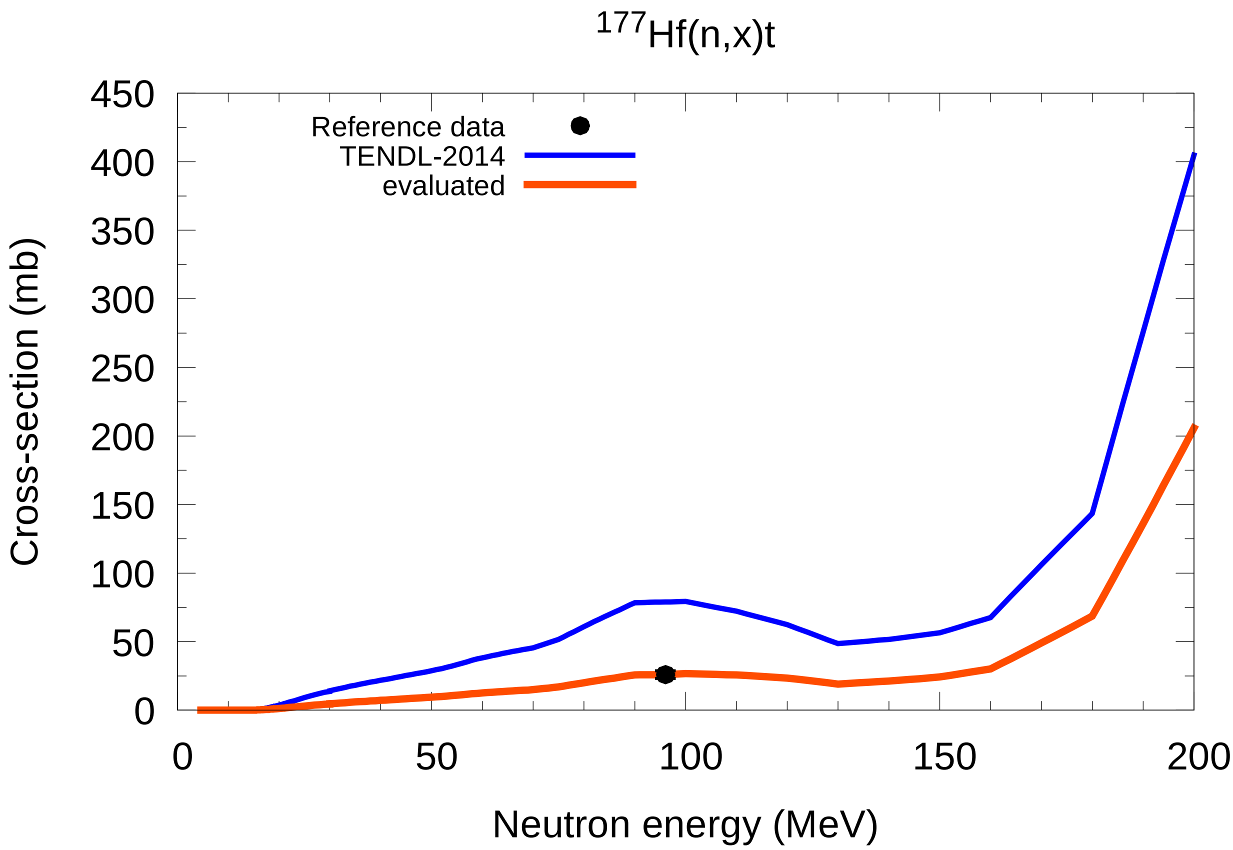
^{176}Lu(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



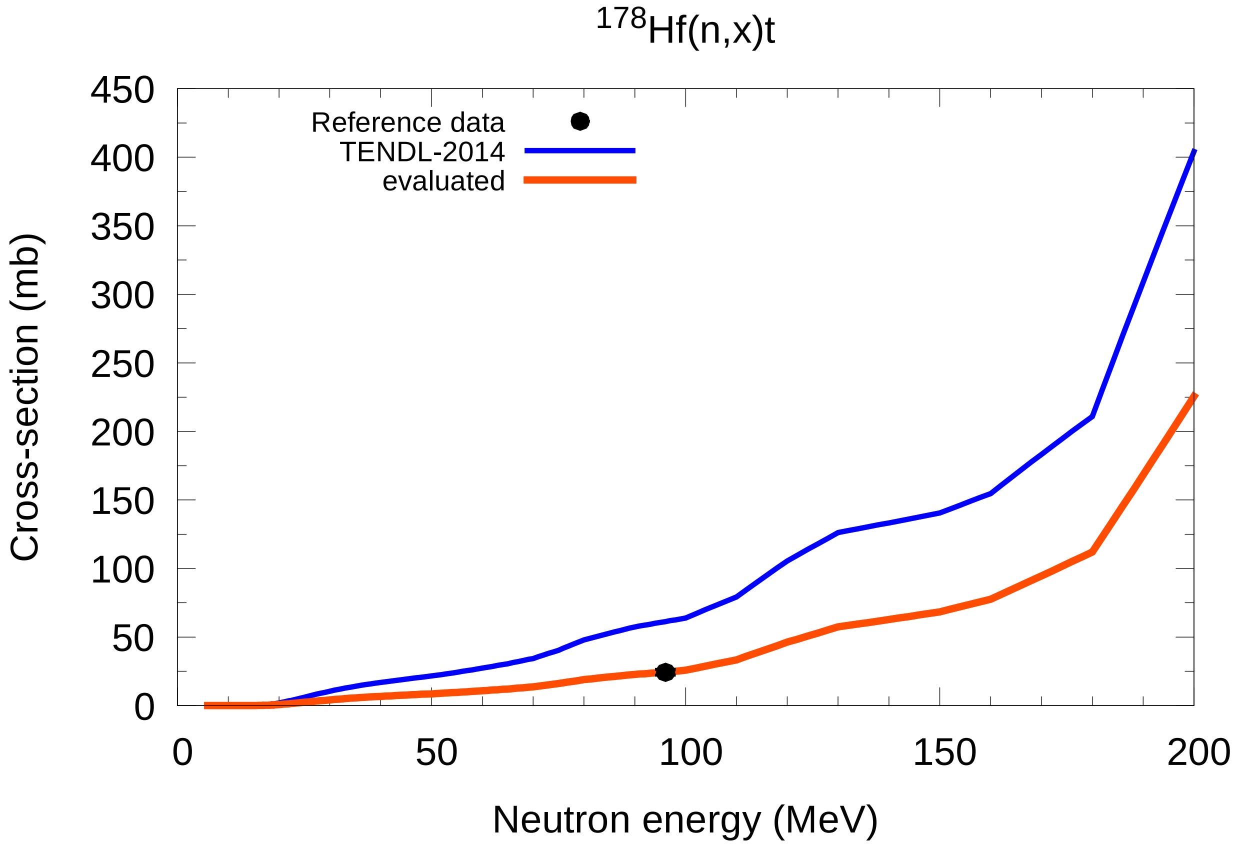
^{174}Hf(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
0
50
100
150
200



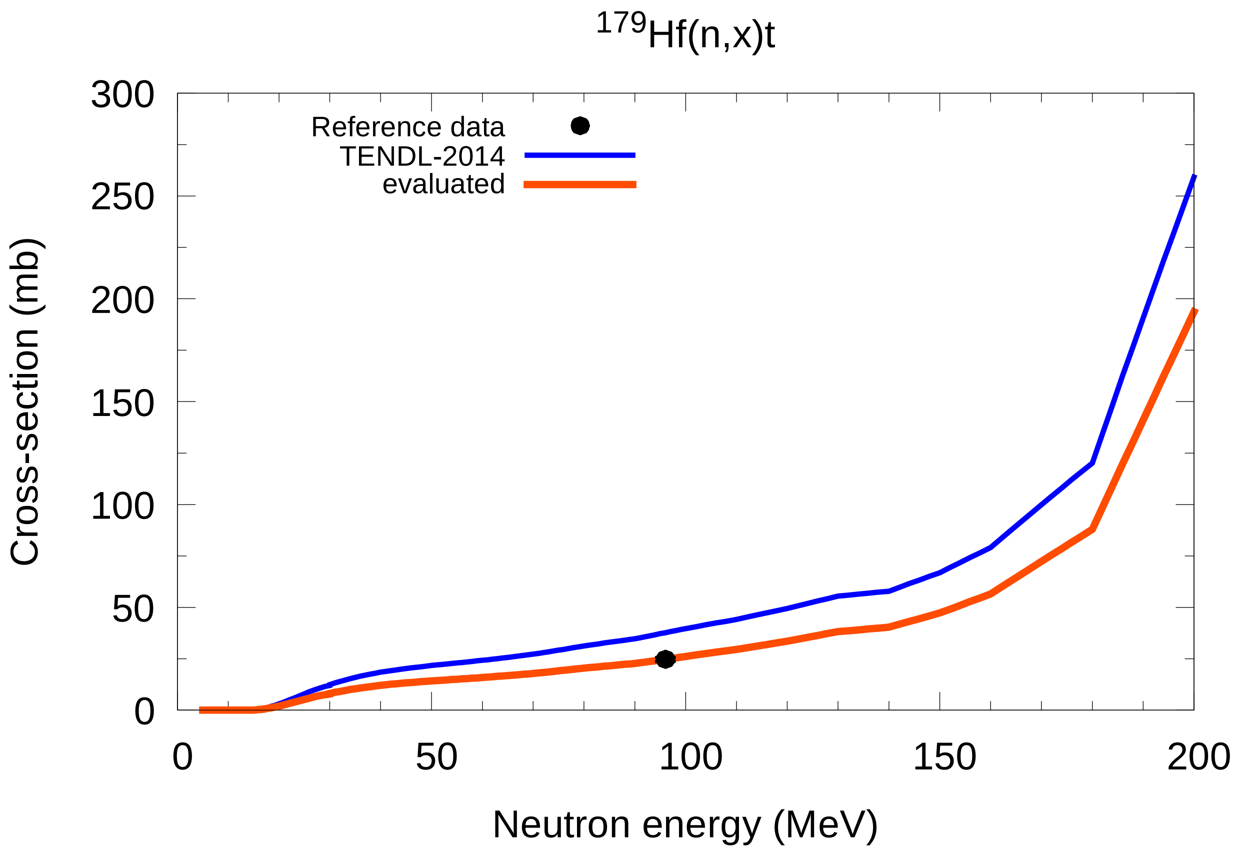
^{176}Hf(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
0
50
100
150
200
250
300
350
400
450
500
0
50
100
150
200
Neutron energy (MeV)



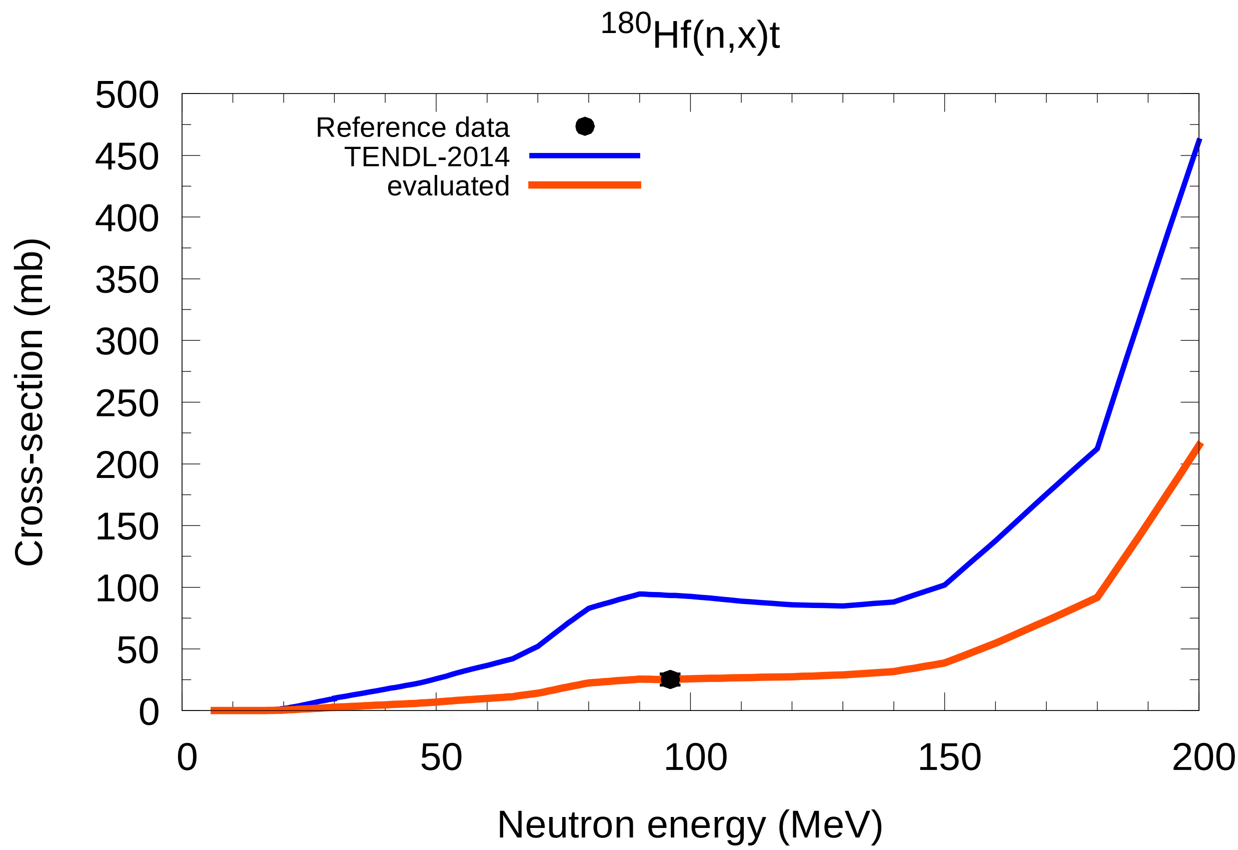
^{177}Hf(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
0
50
100
150
200
250
300
350
400
450
0
50
100
150
200
Neutron energy (MeV)



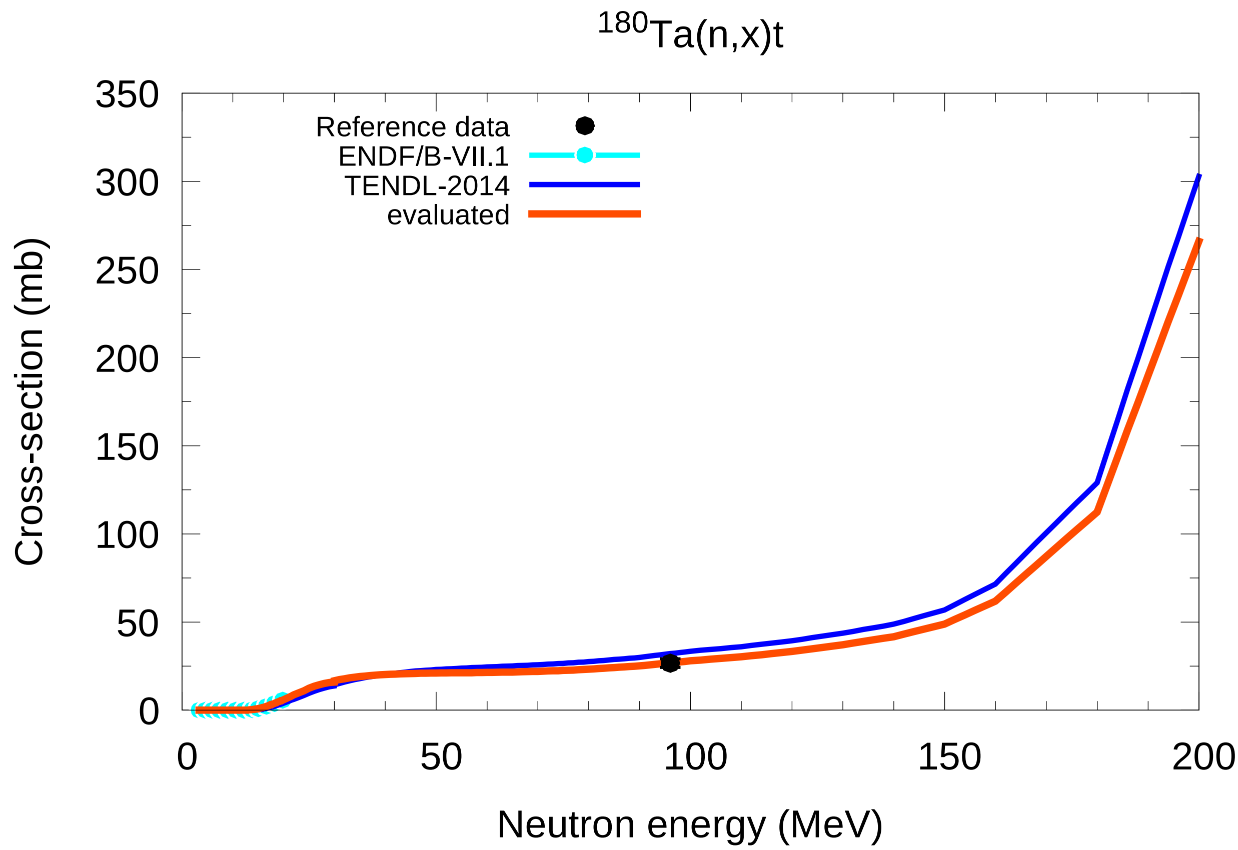
^{178}Hf(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
0
50
100
150
200



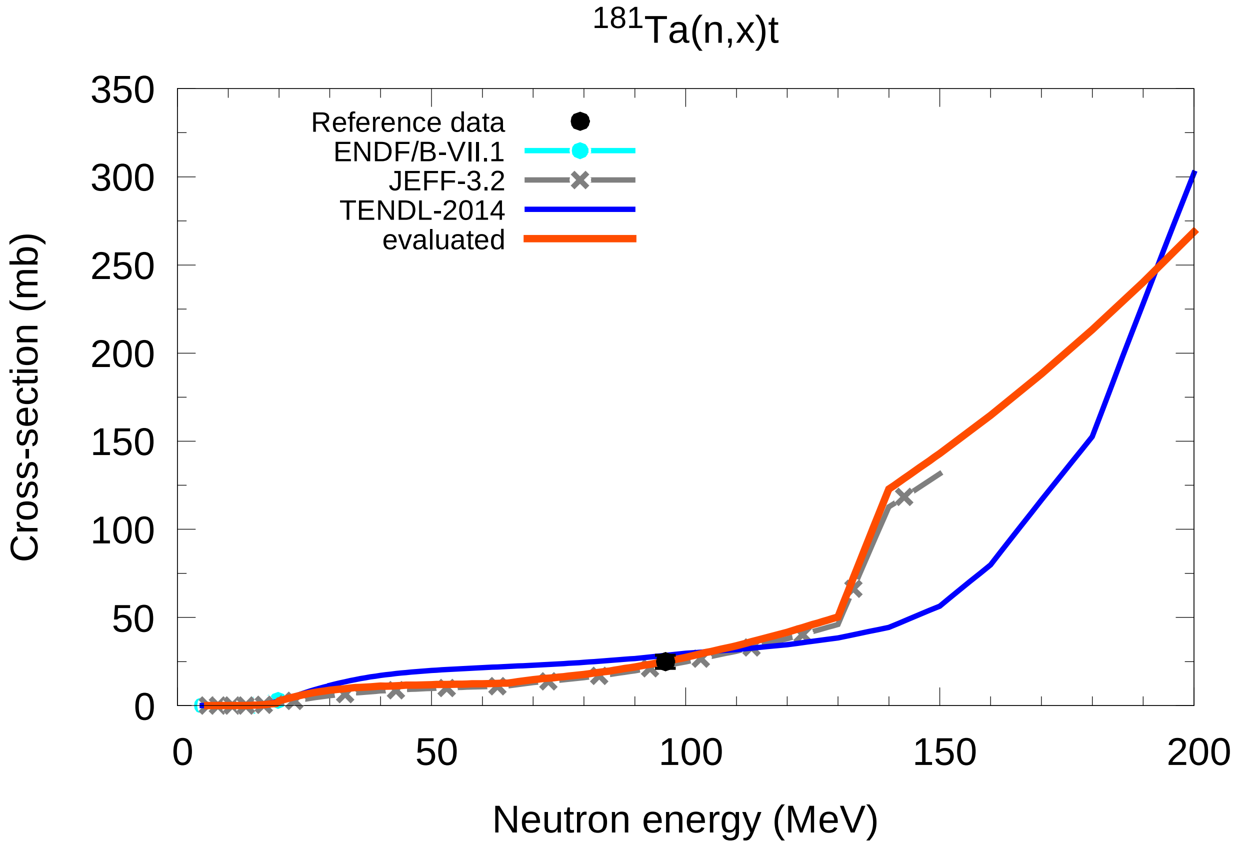
^{179}Hf(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
0
50
100
150
200



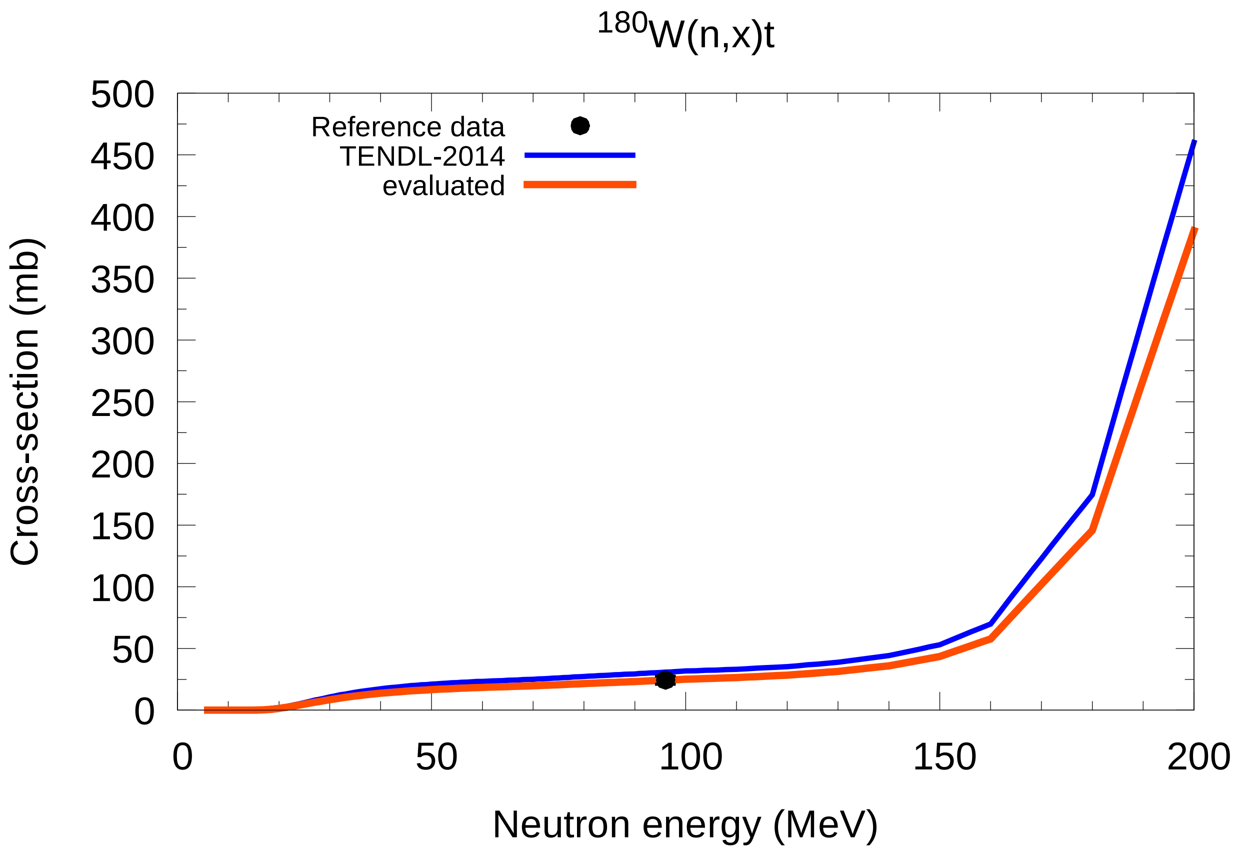
^{180}Hf(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500
0
50
100
150
200



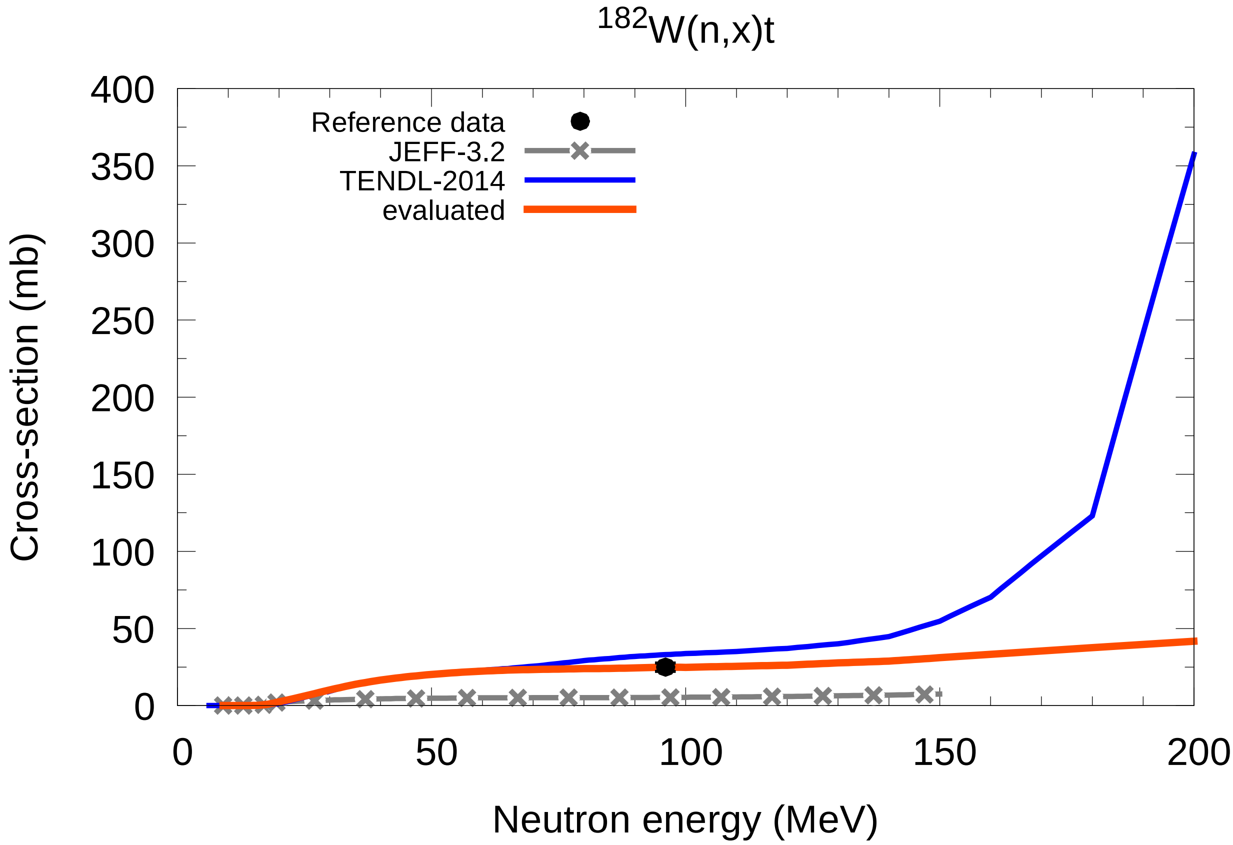
^{180}Ta(n,x)t
Reference data
ENDF/B-VII.1
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
0
50
100
150
200



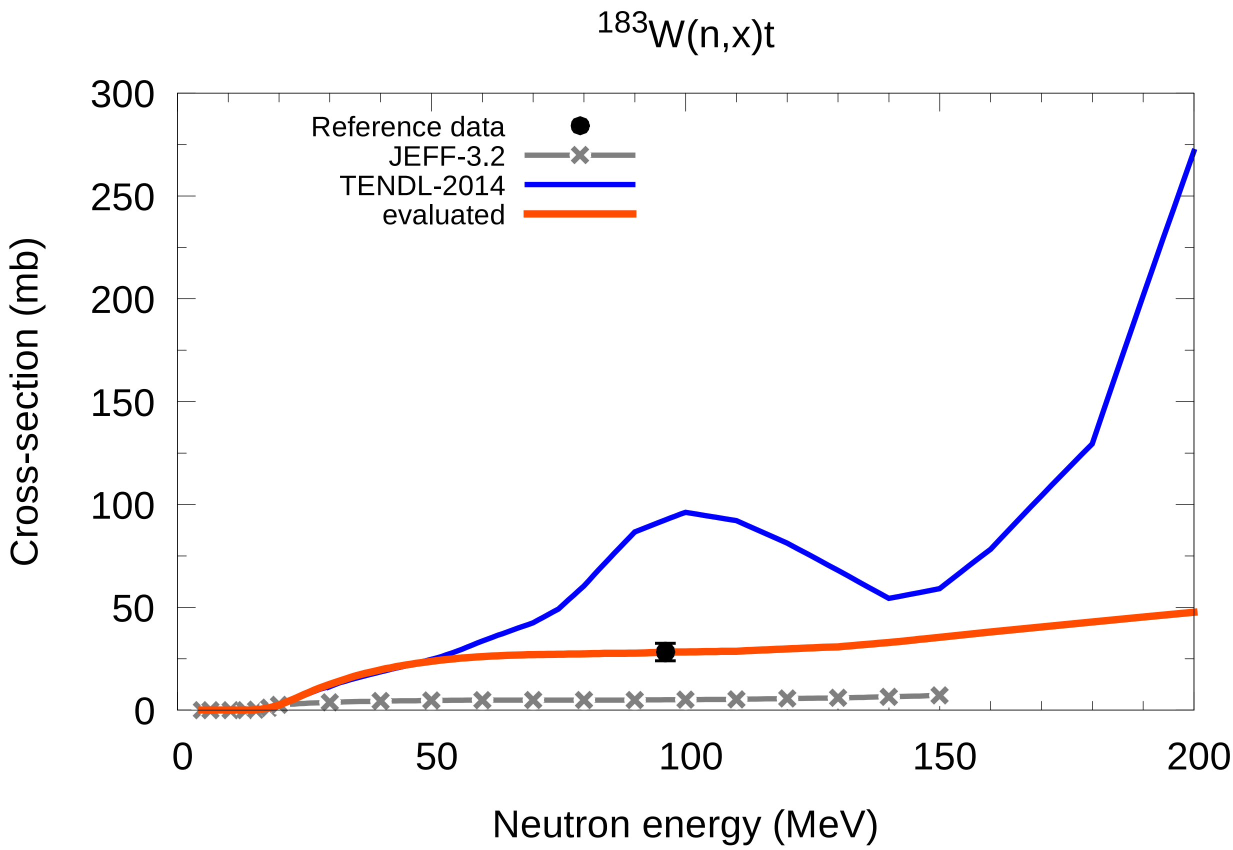
^{181}Ta(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



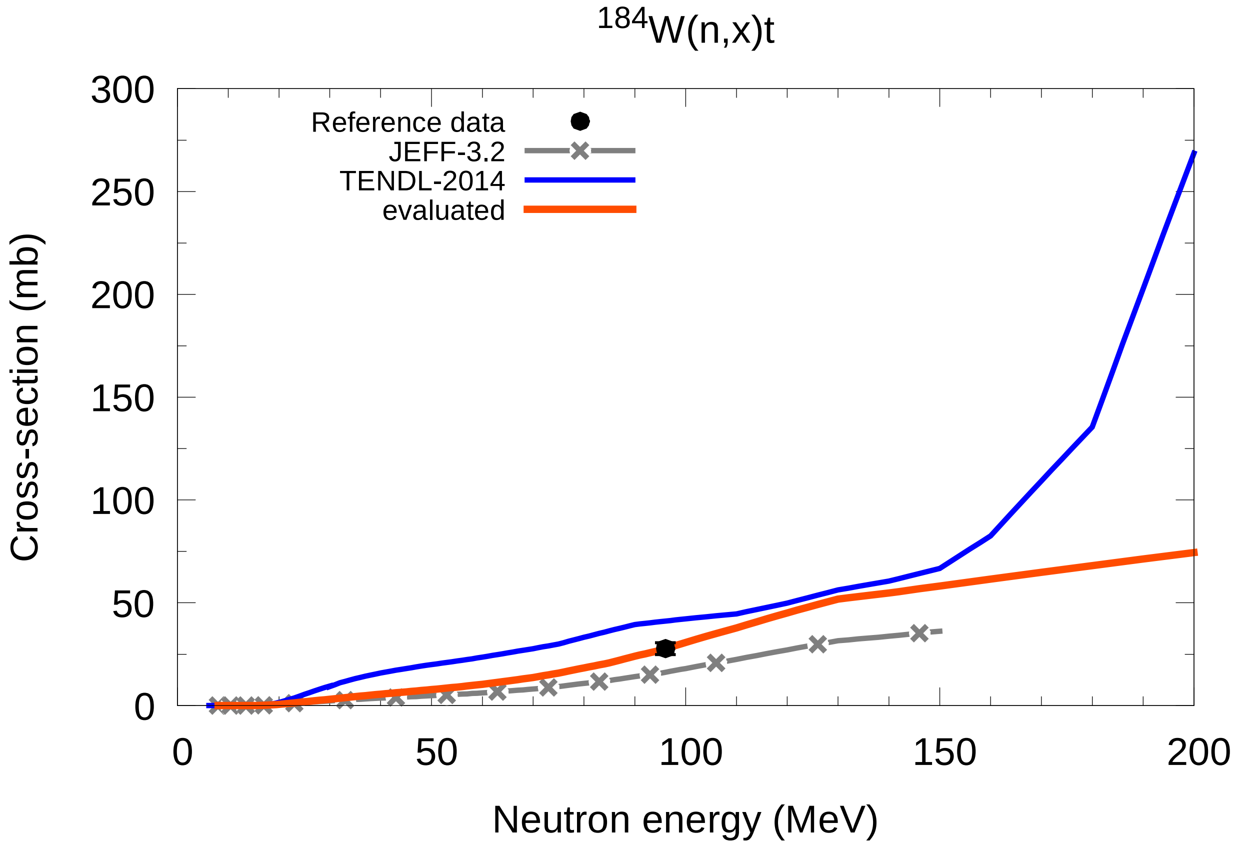
^{180}W(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



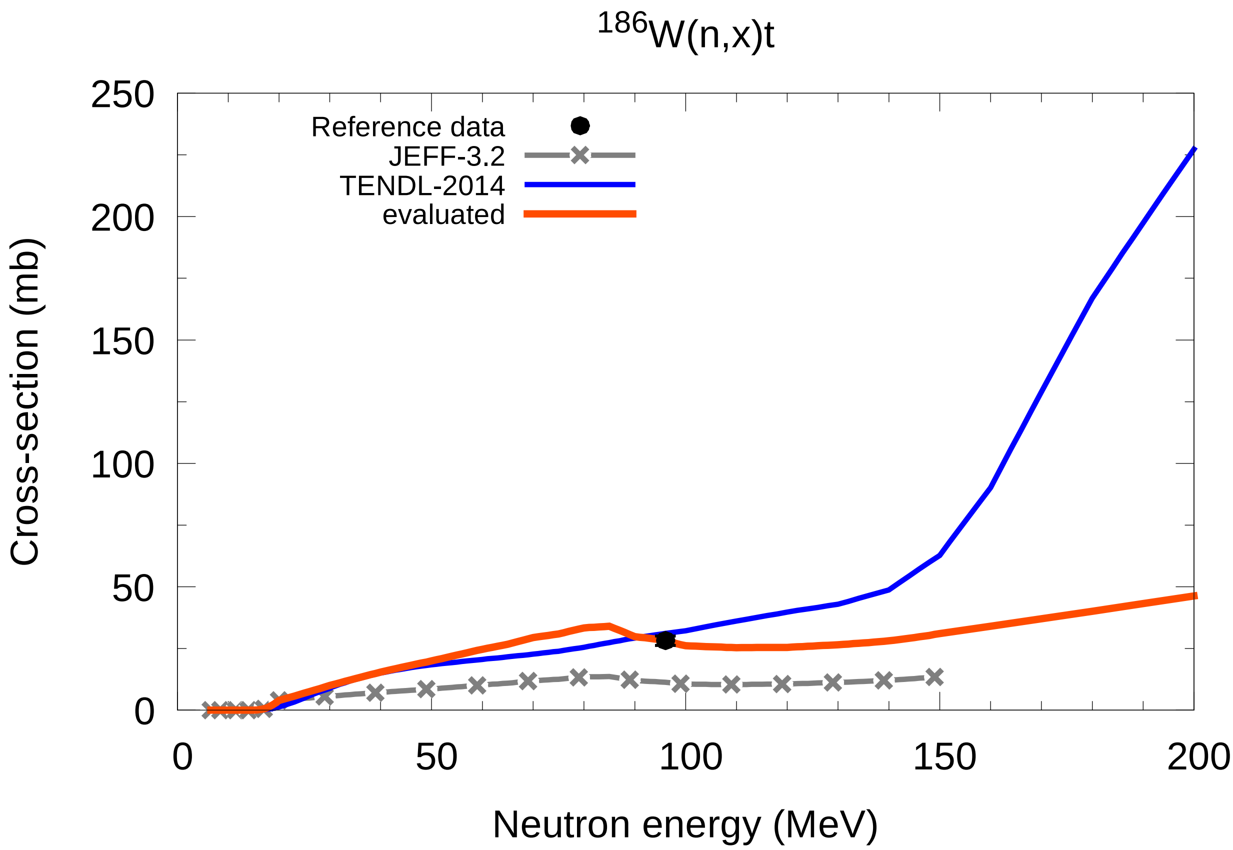
$^{182}W(n,x)t$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



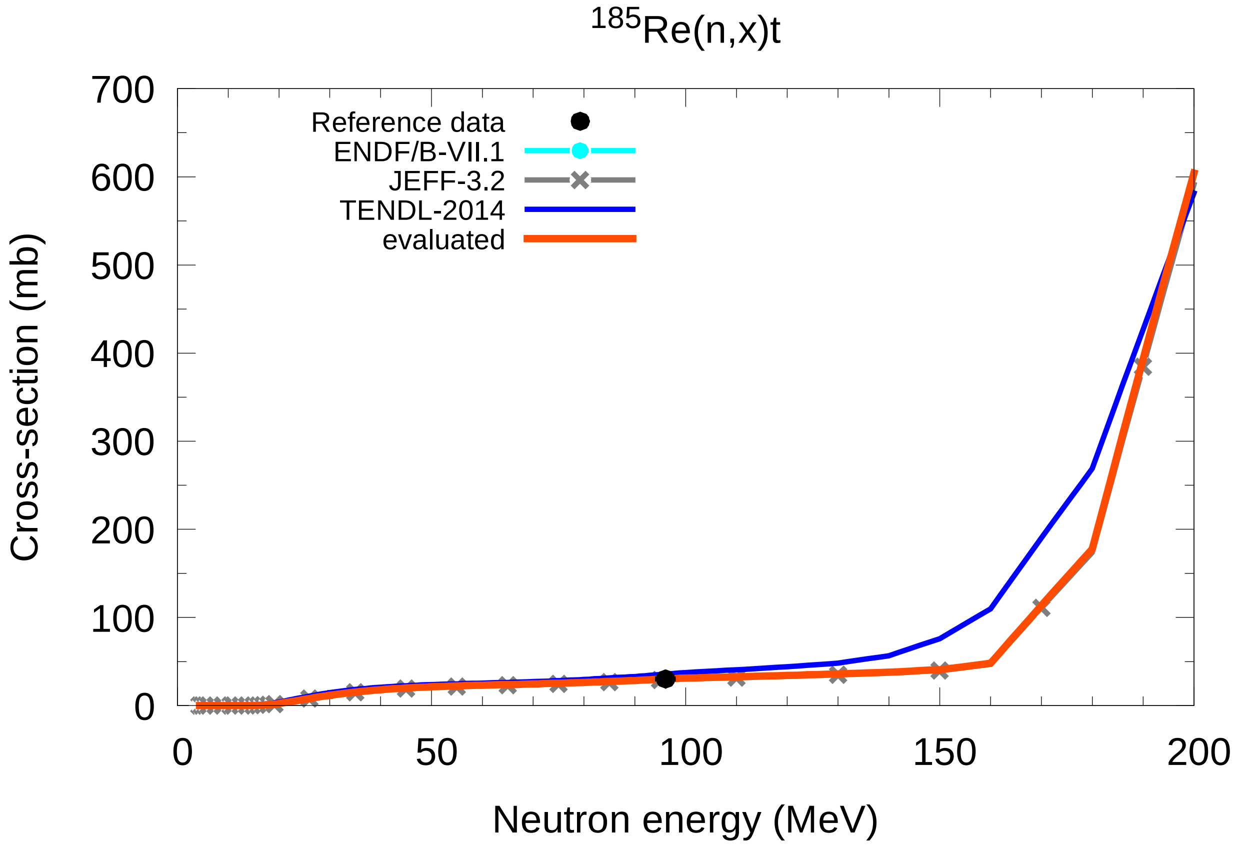
$^{183}W(n,x)t$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300

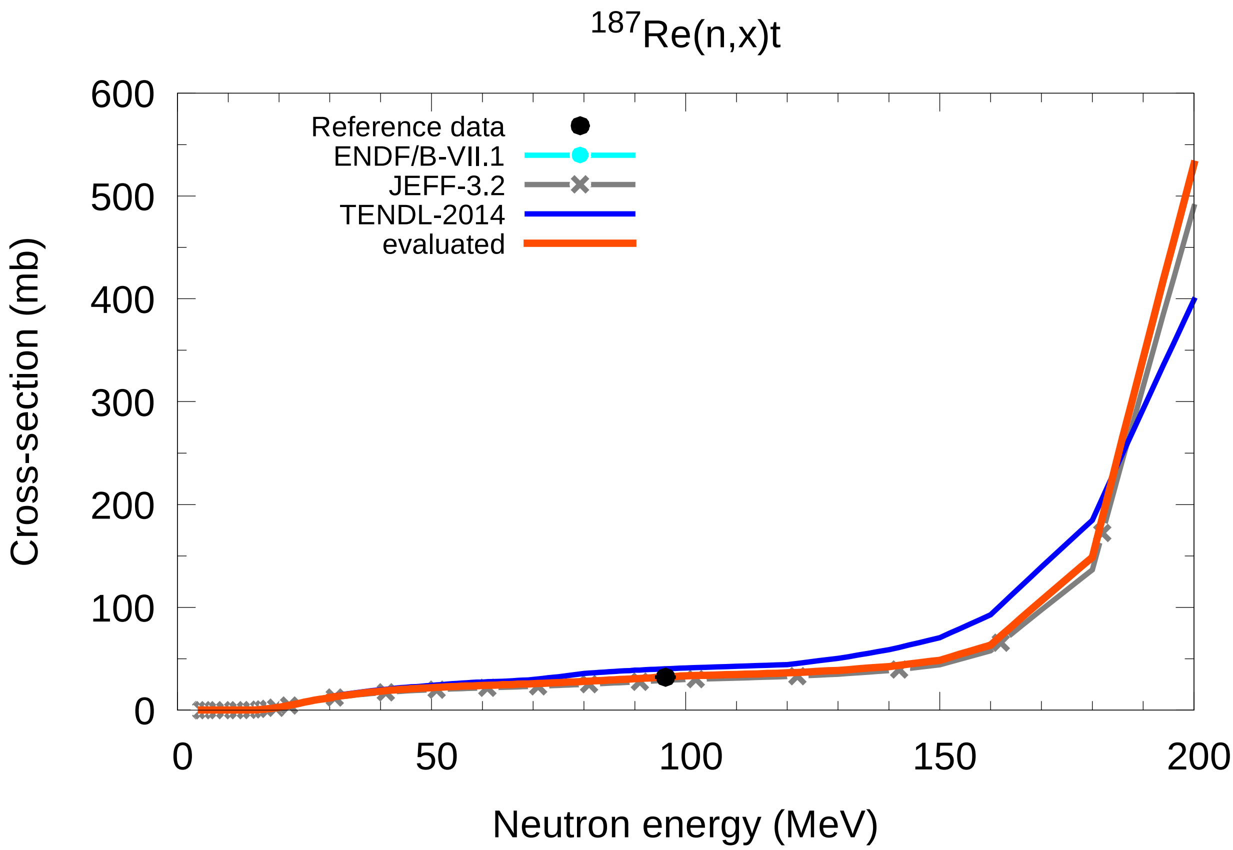


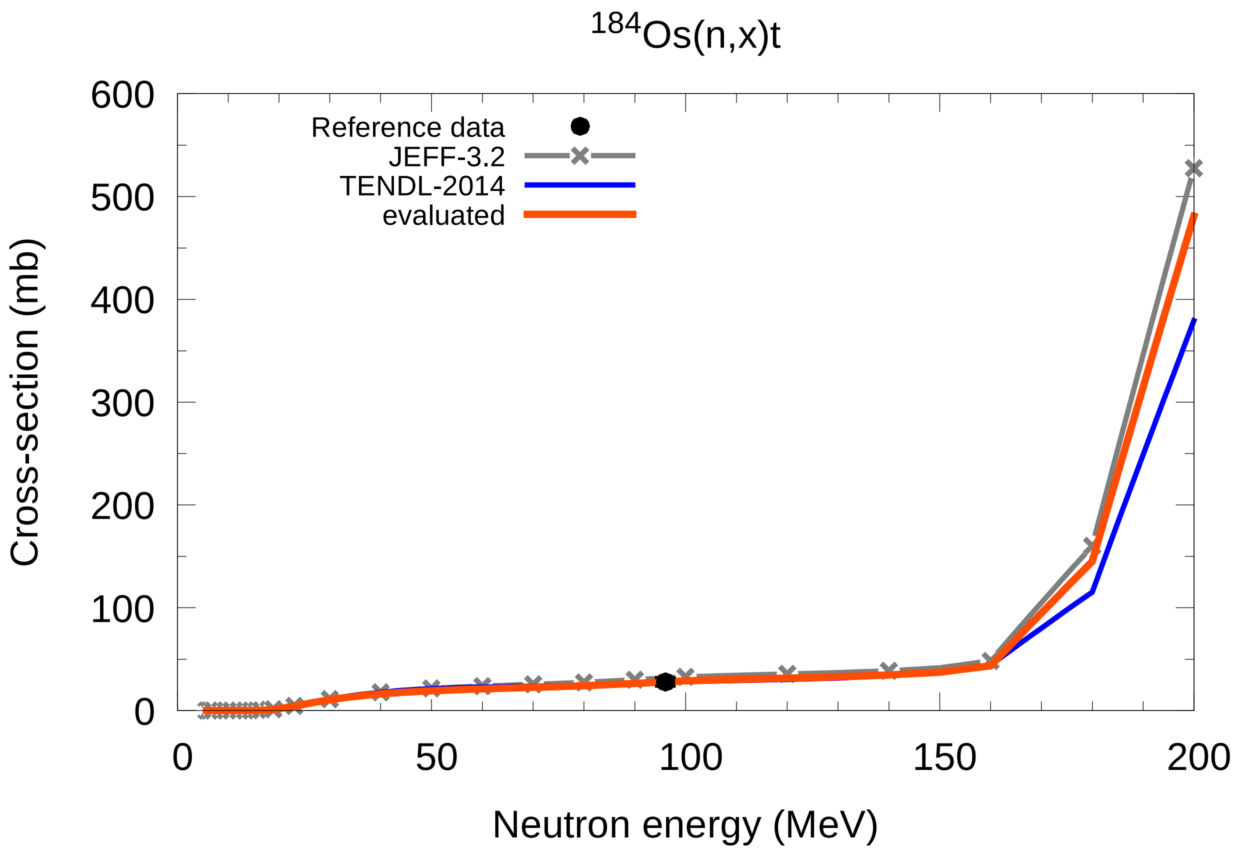
$^{184}W(n,x)t$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



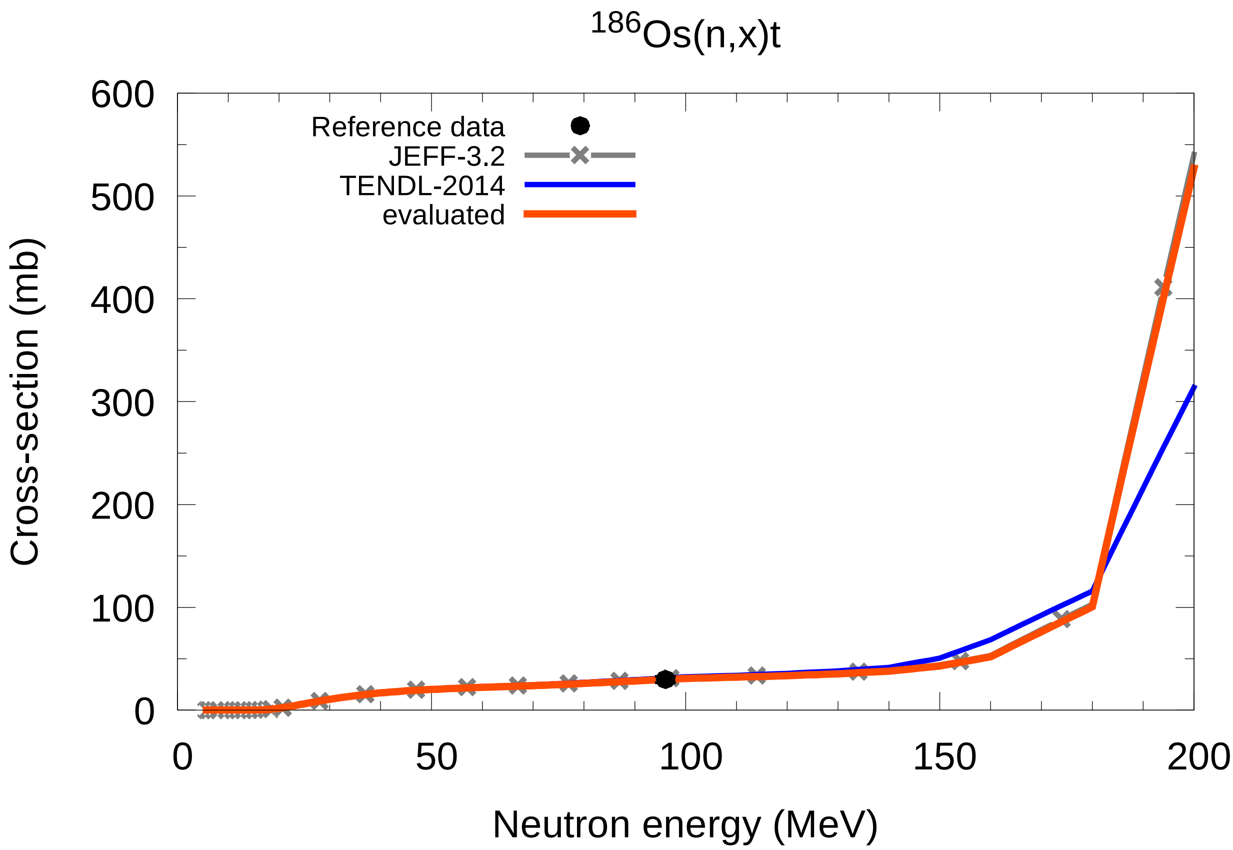
$^{186}W(n,x)t$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250


^{185}Re(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200

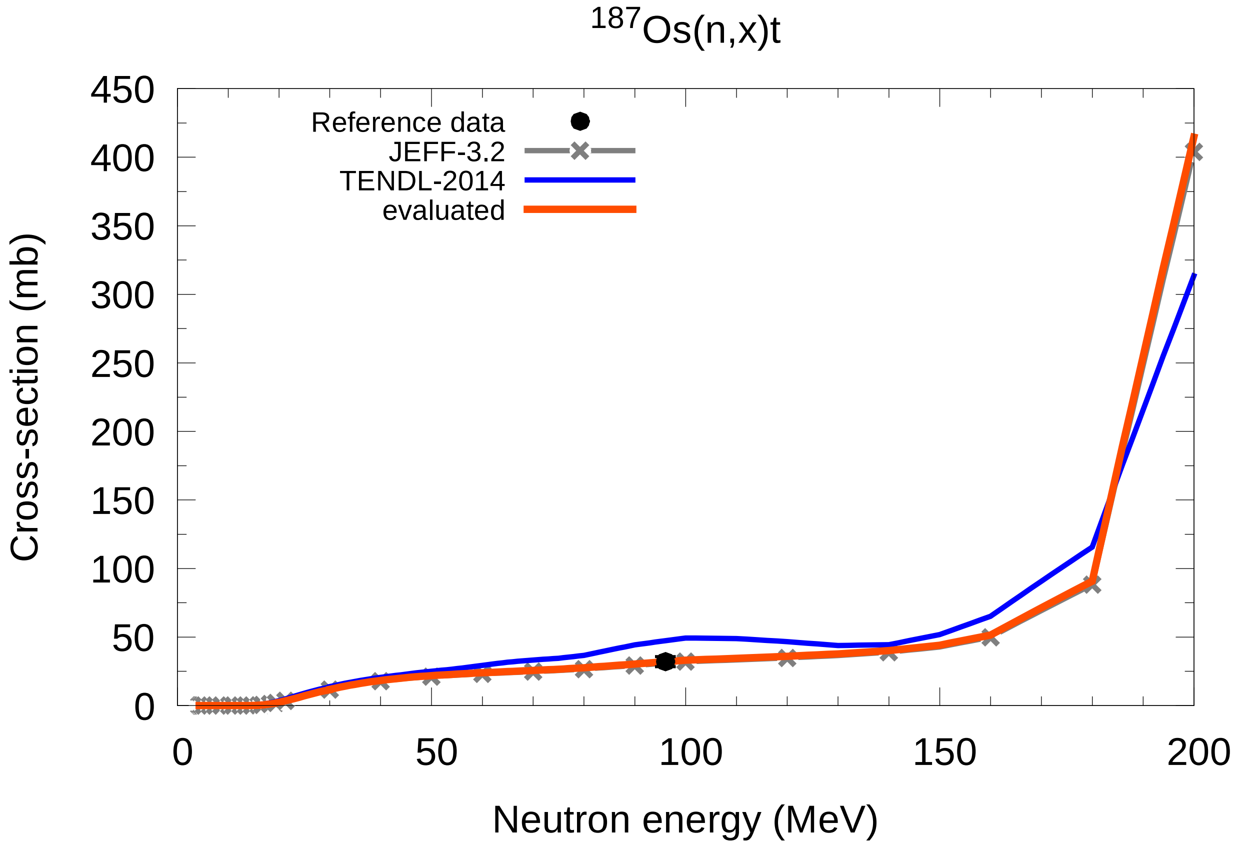

^{187}Re(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



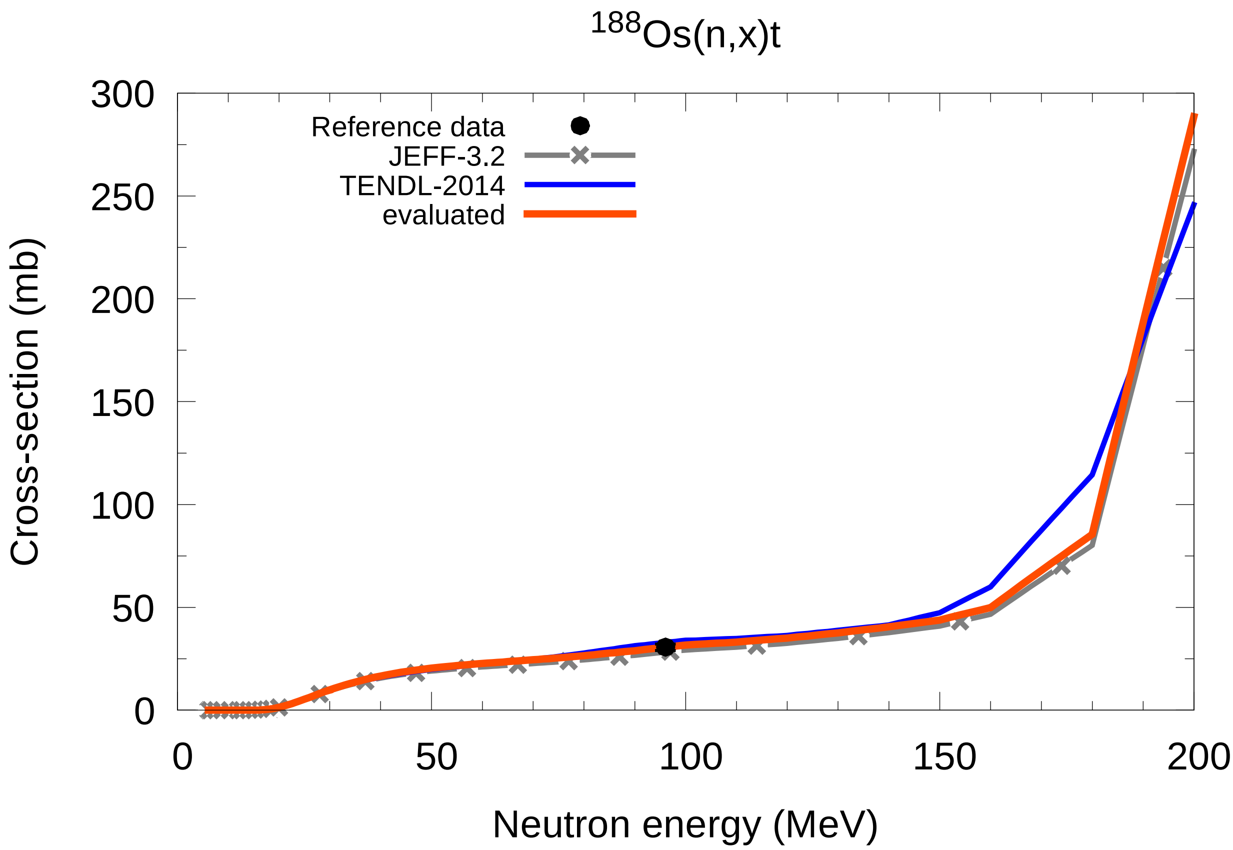
^{184}Os(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



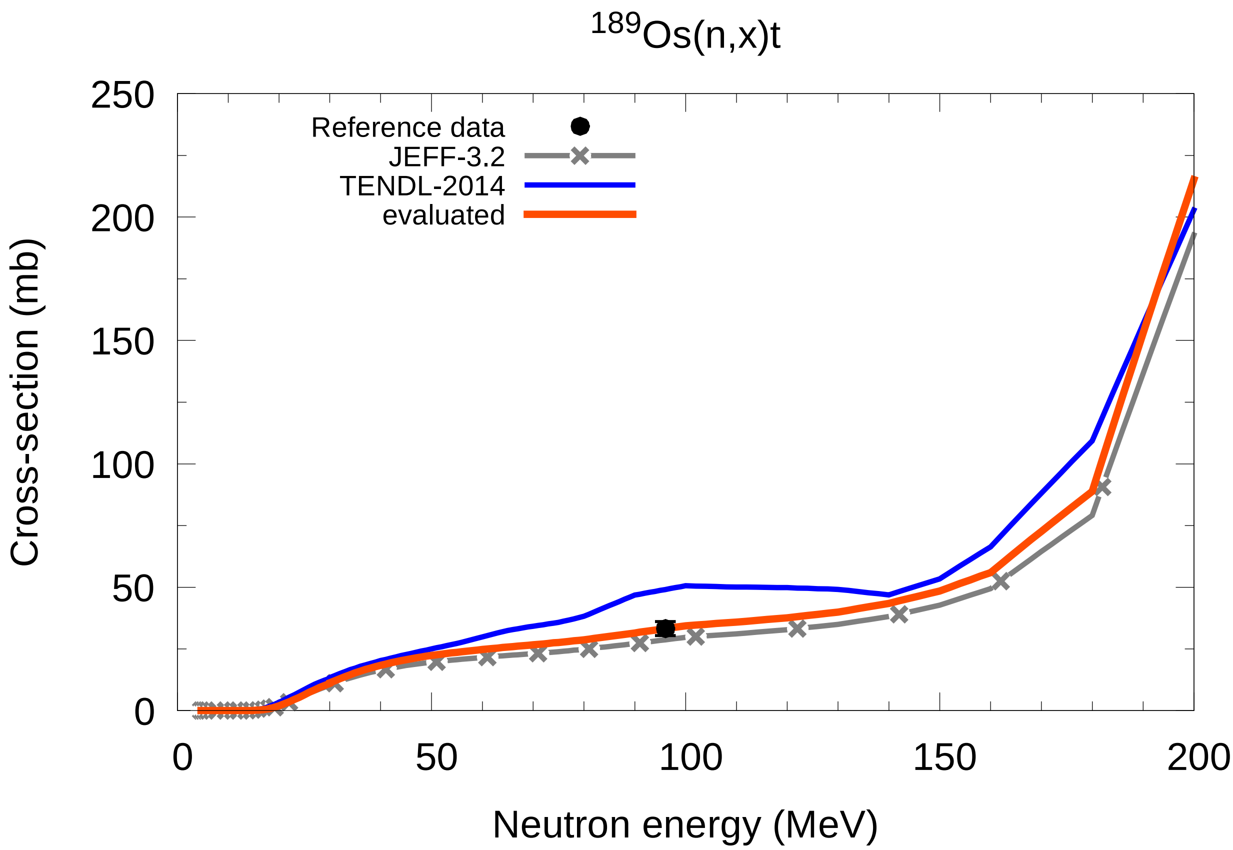
^{186}Os(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



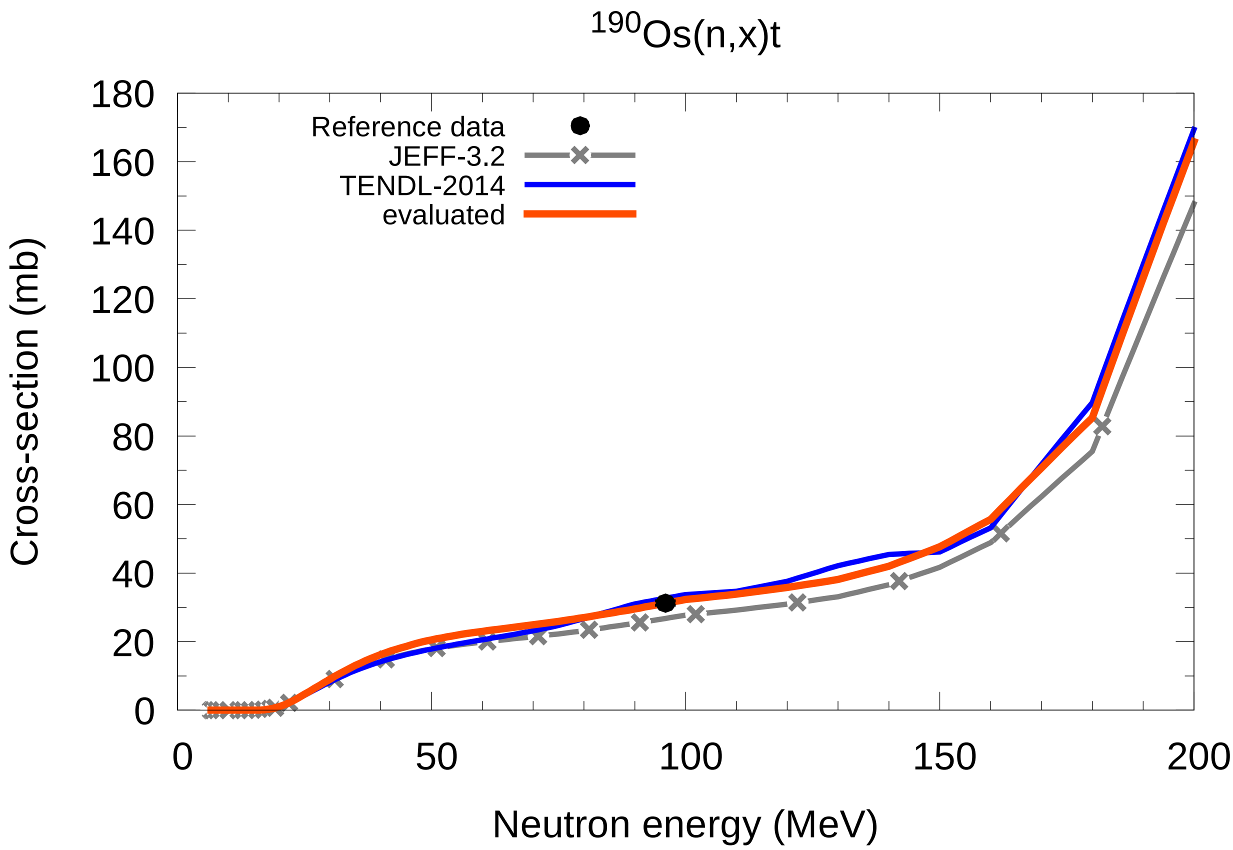
^{187}Os(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)



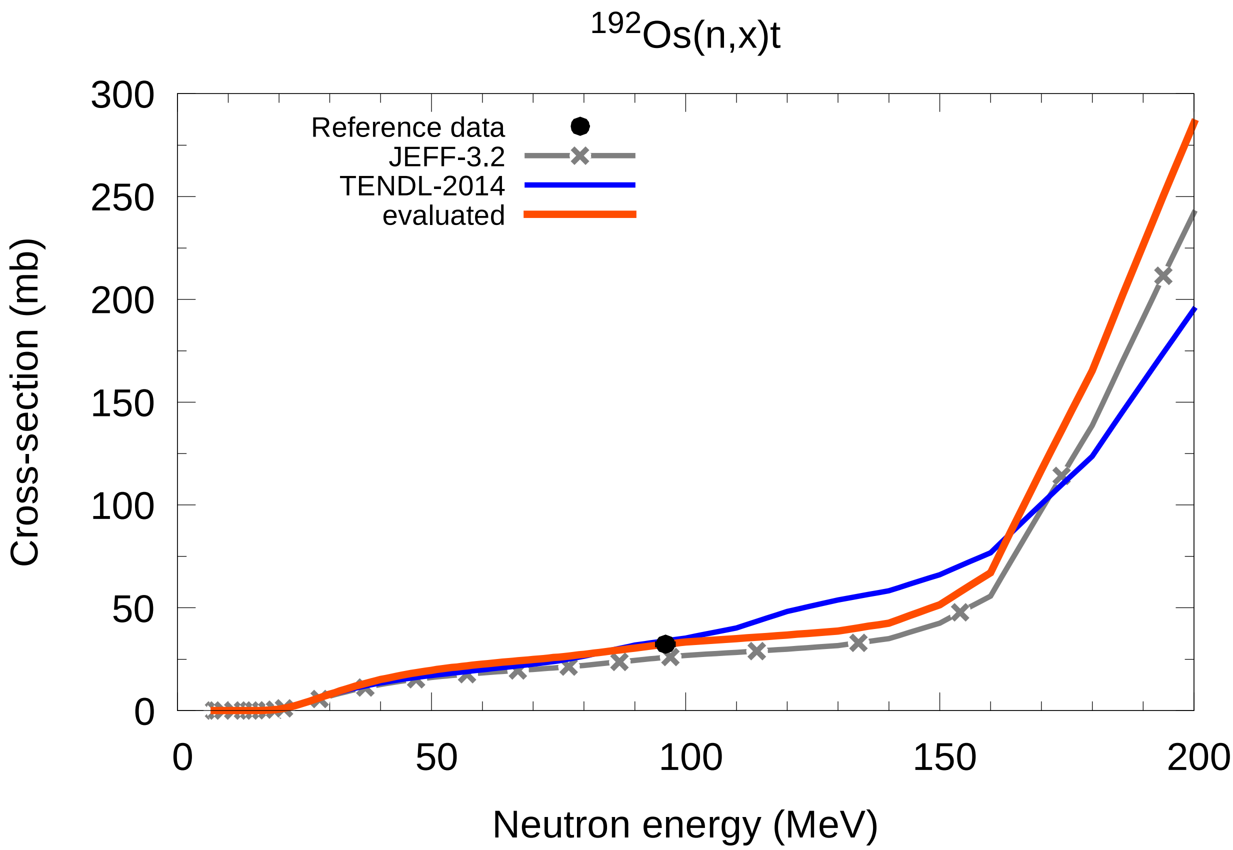
^{188}Os(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)



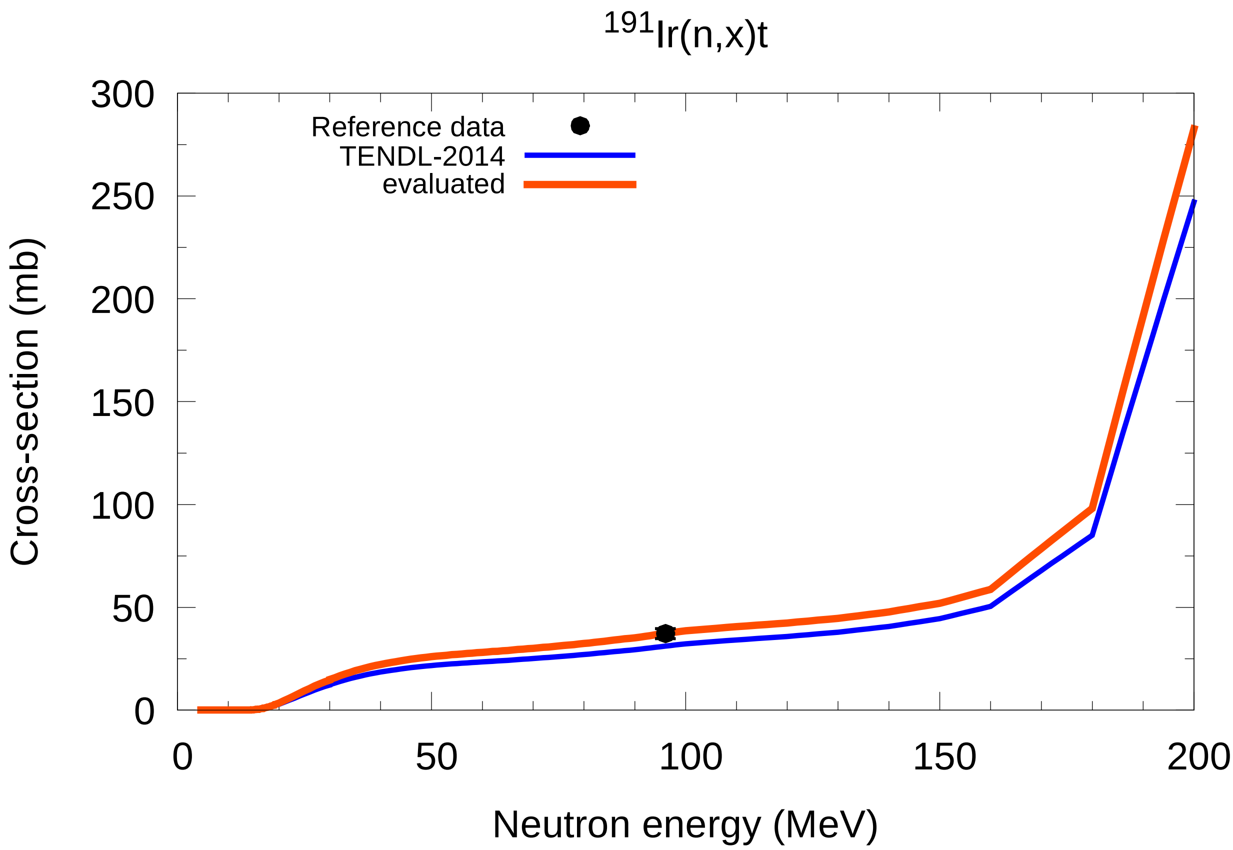
189Os(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
0
50
100
150
200



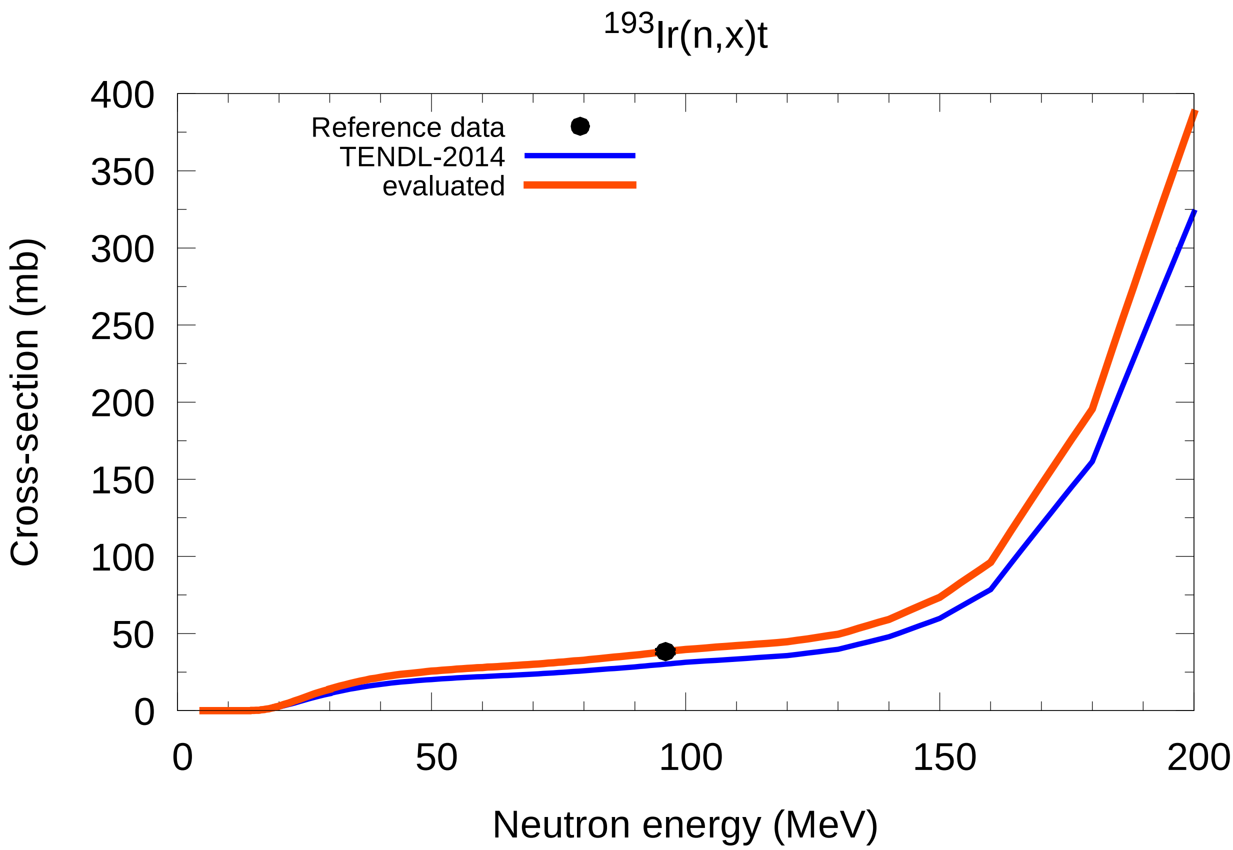
190Os(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
0
50
100
150
200



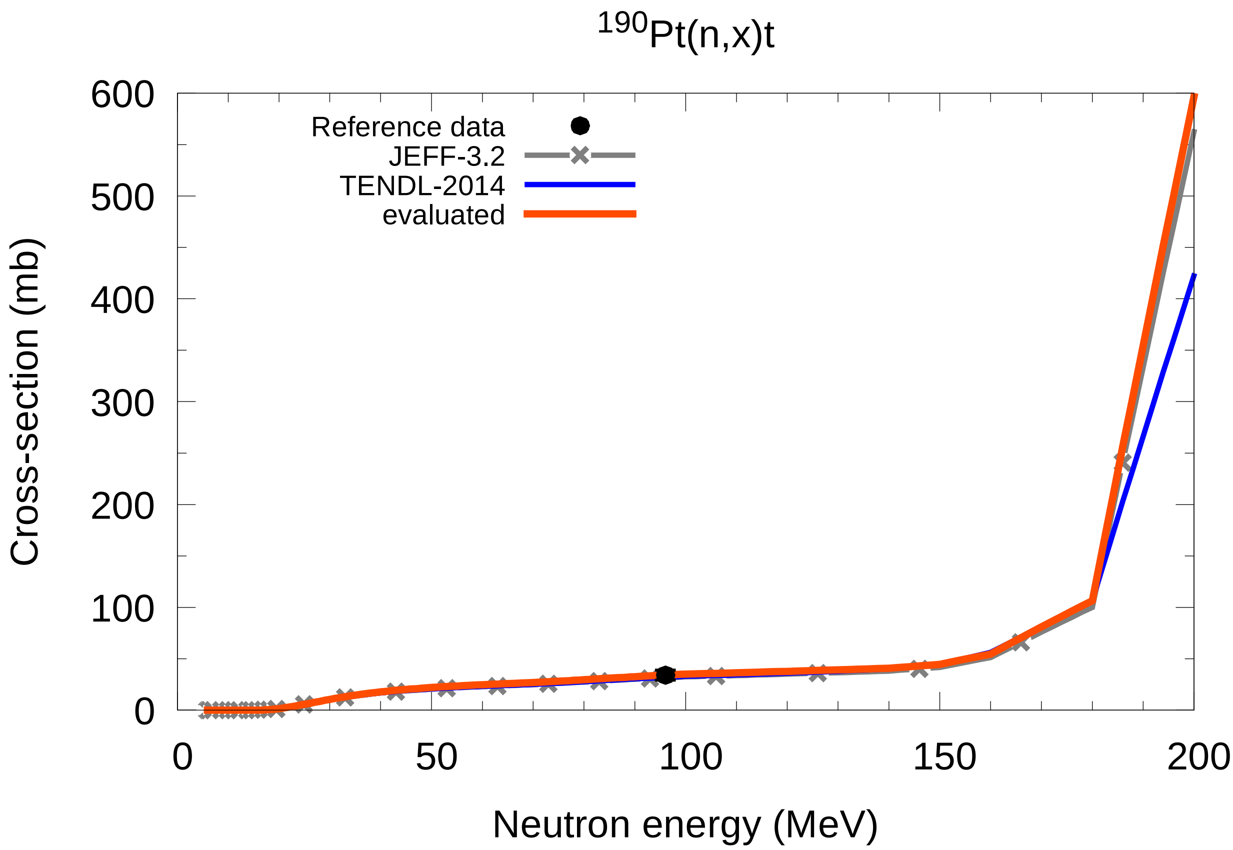
$^{192}Os(n,x)t$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



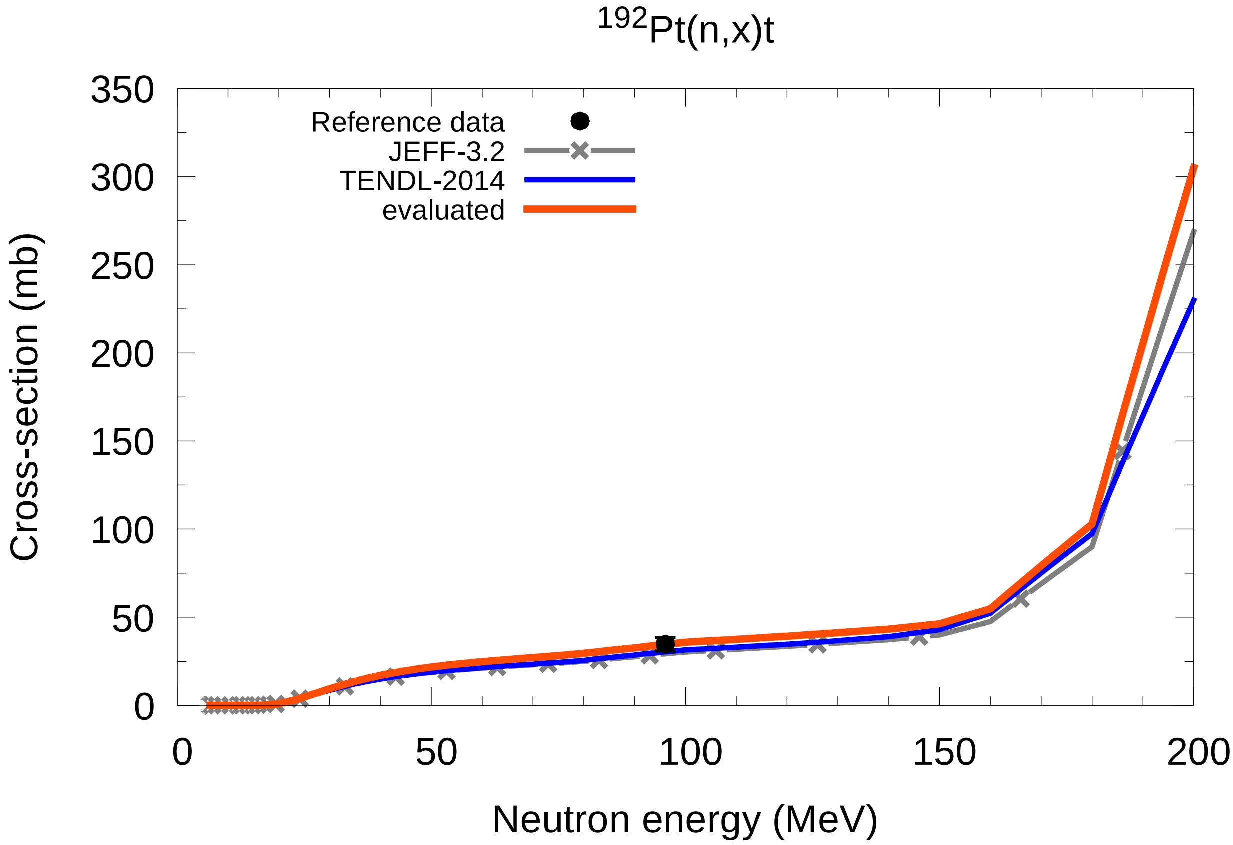
$^{191}Ir(n,x)t$
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



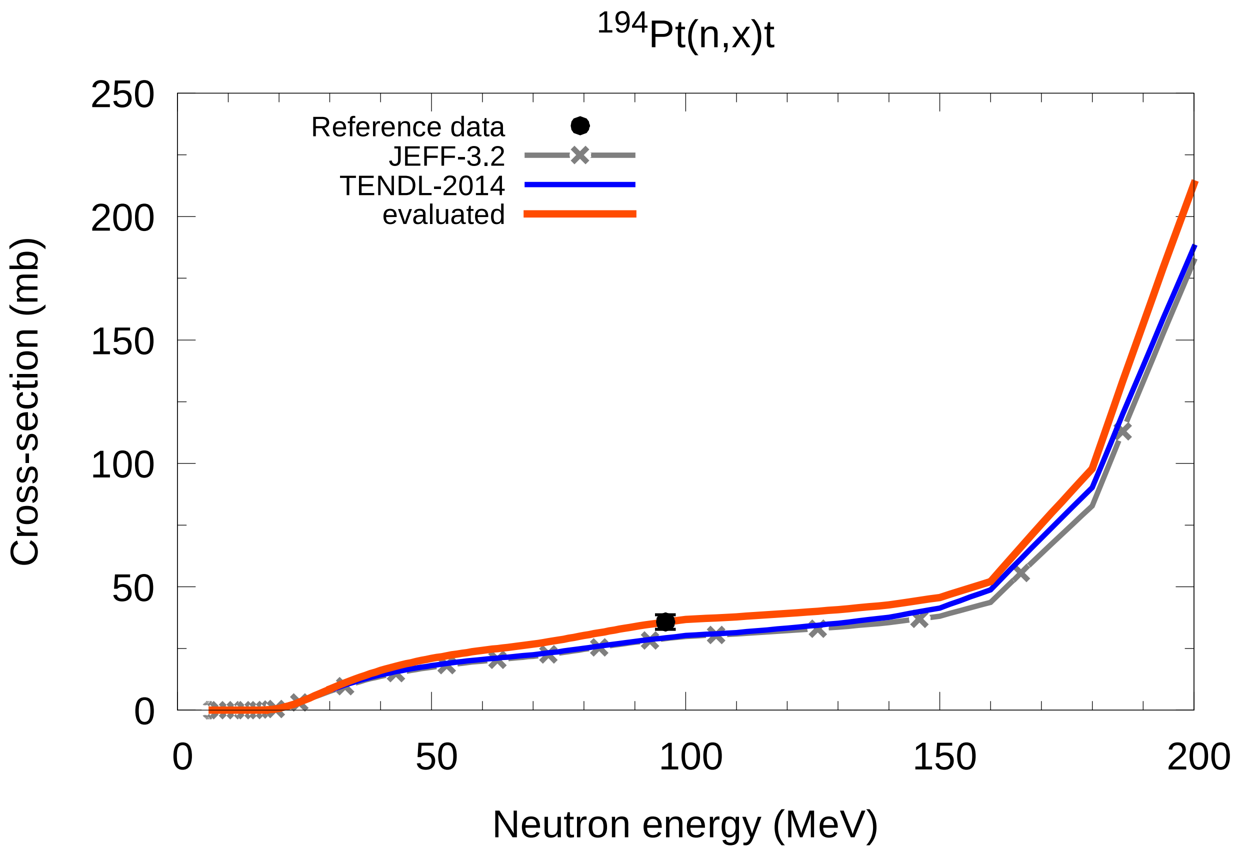
^{193}Ir(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



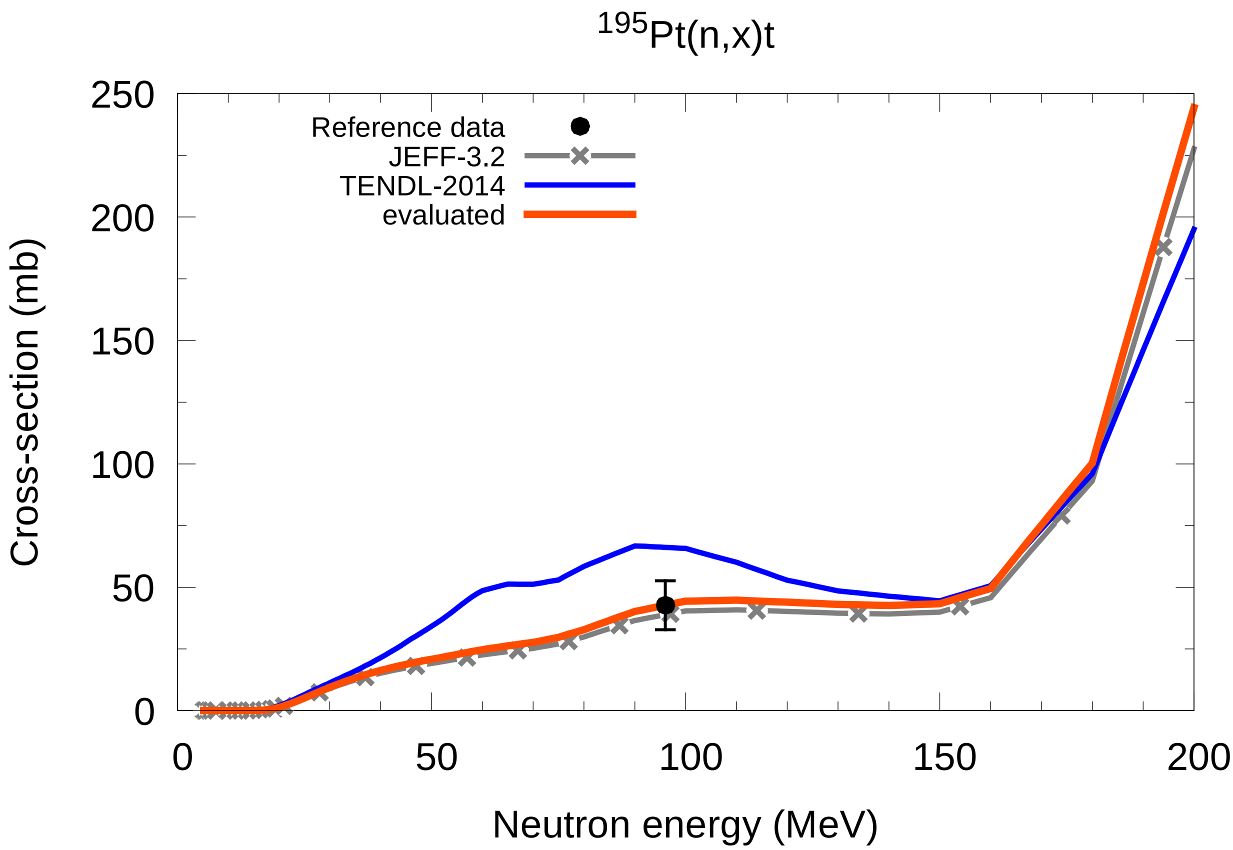
^{190}Pt(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600



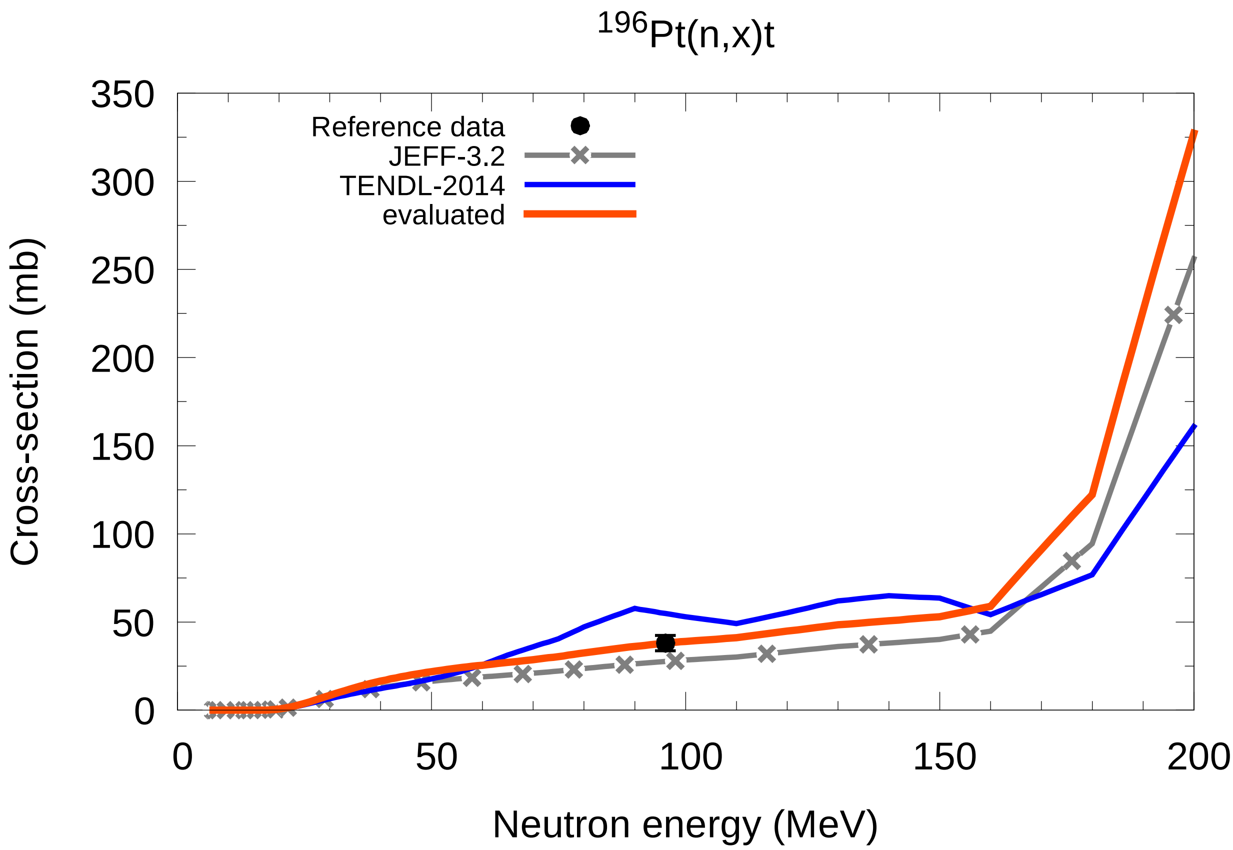
^{192}Pt(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



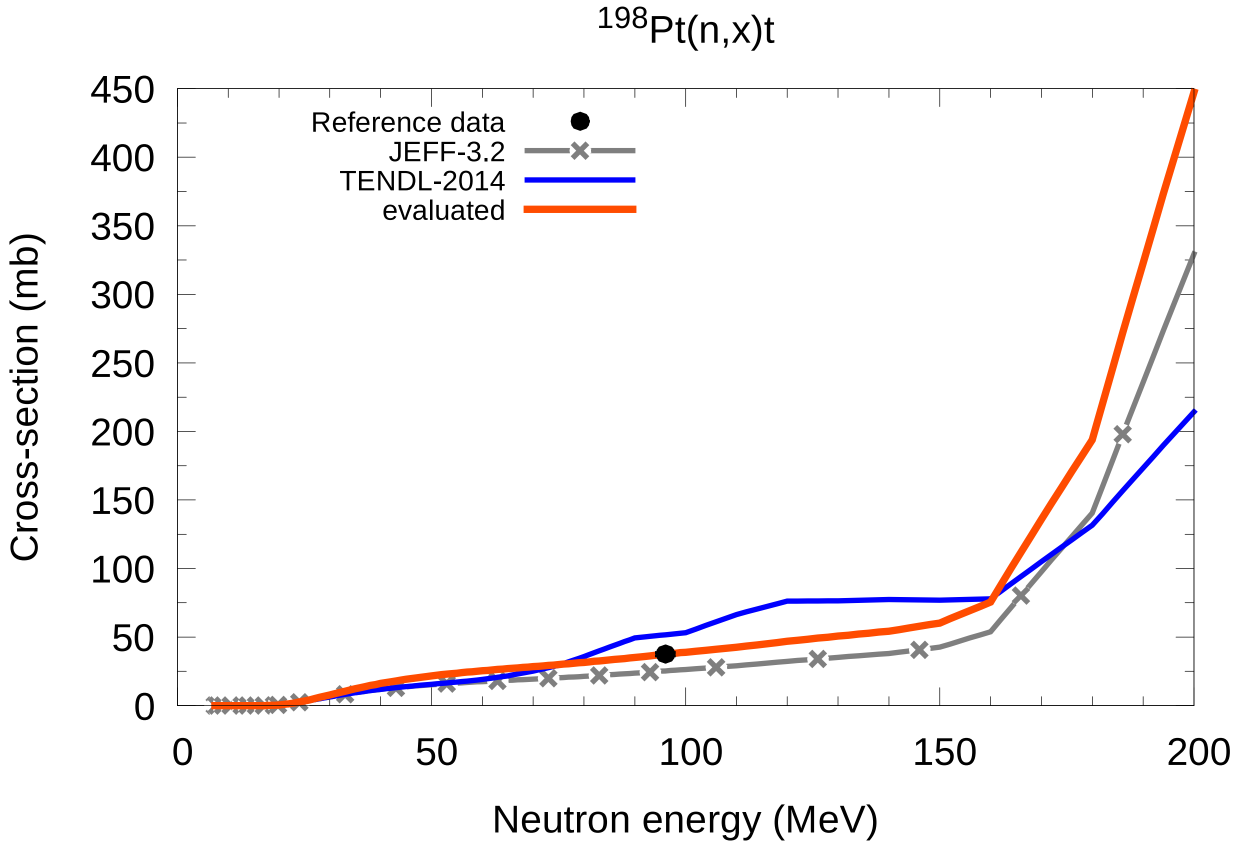
^{194}Pt(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



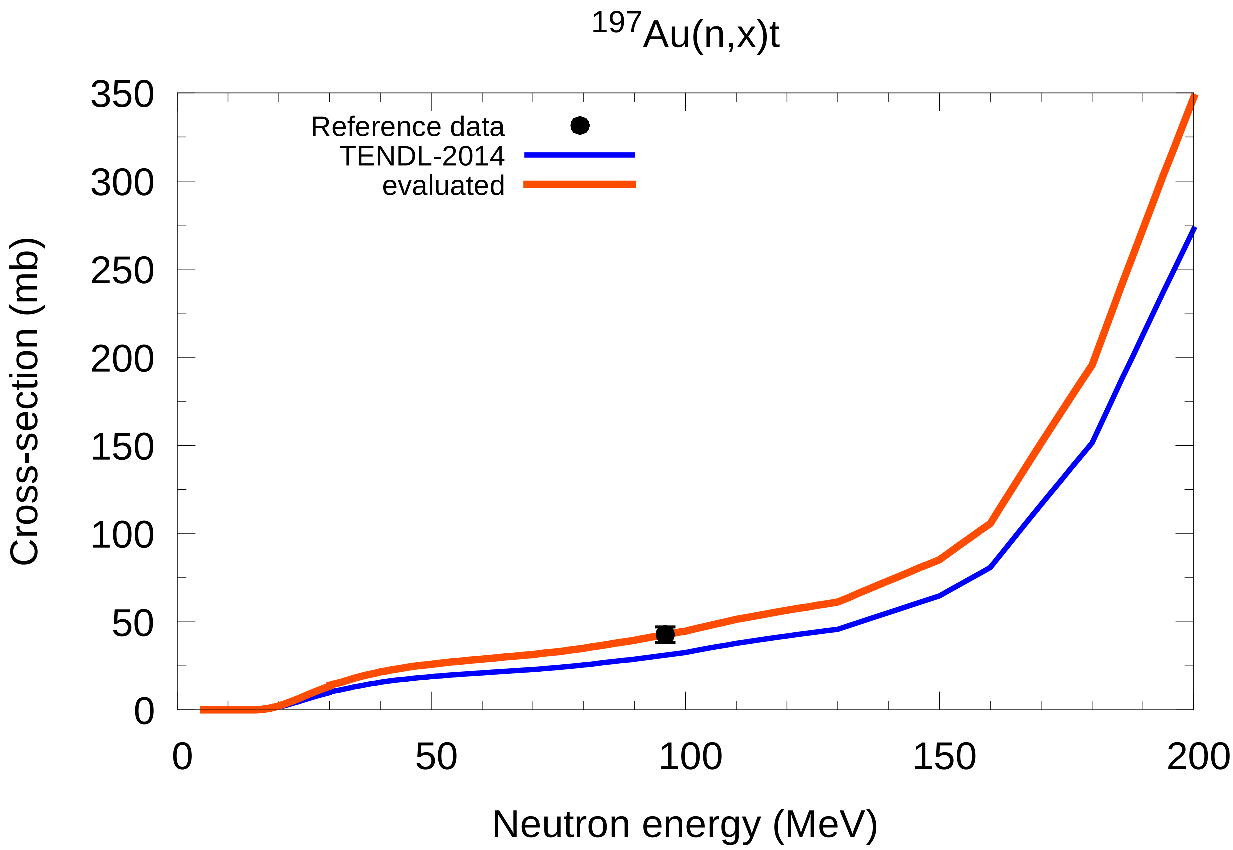
^{195}Pt(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



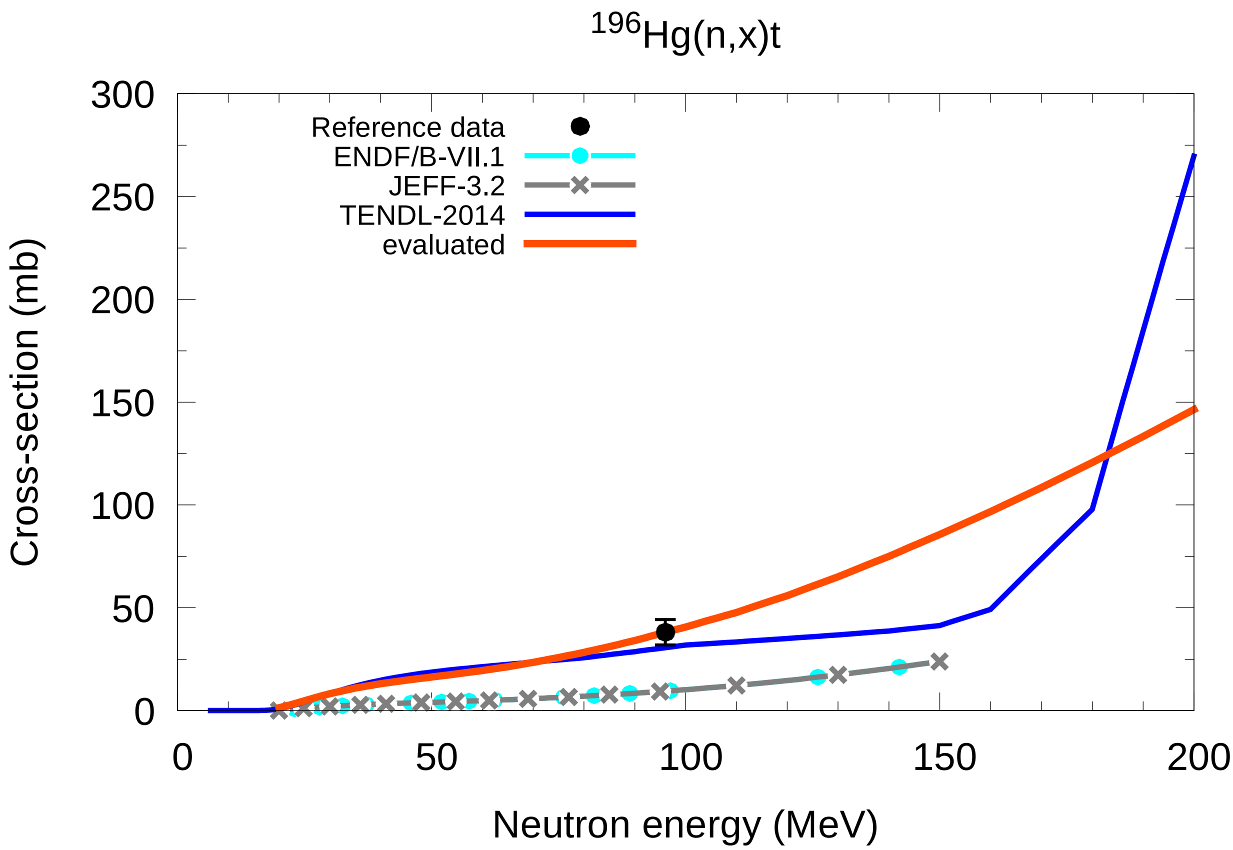
^{196}Pt(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



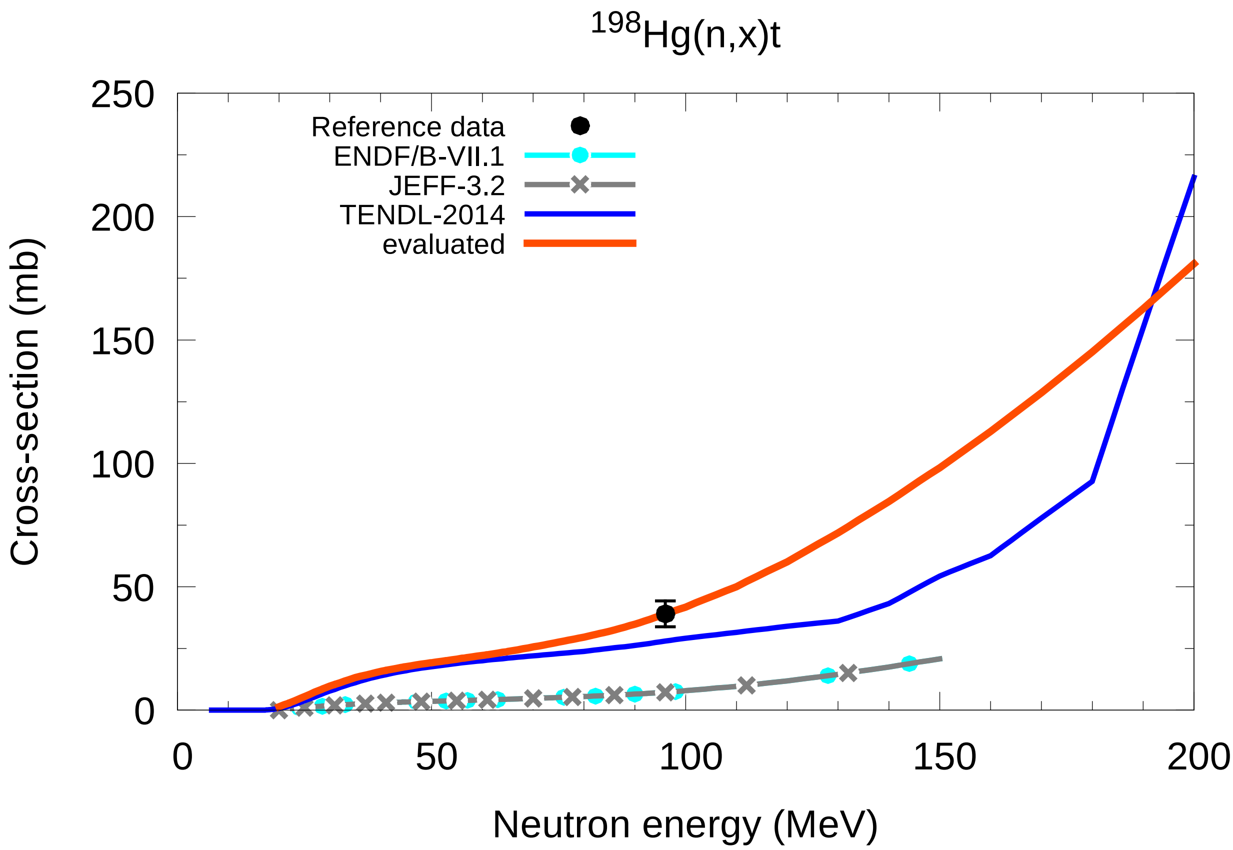
^{198}Pt(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



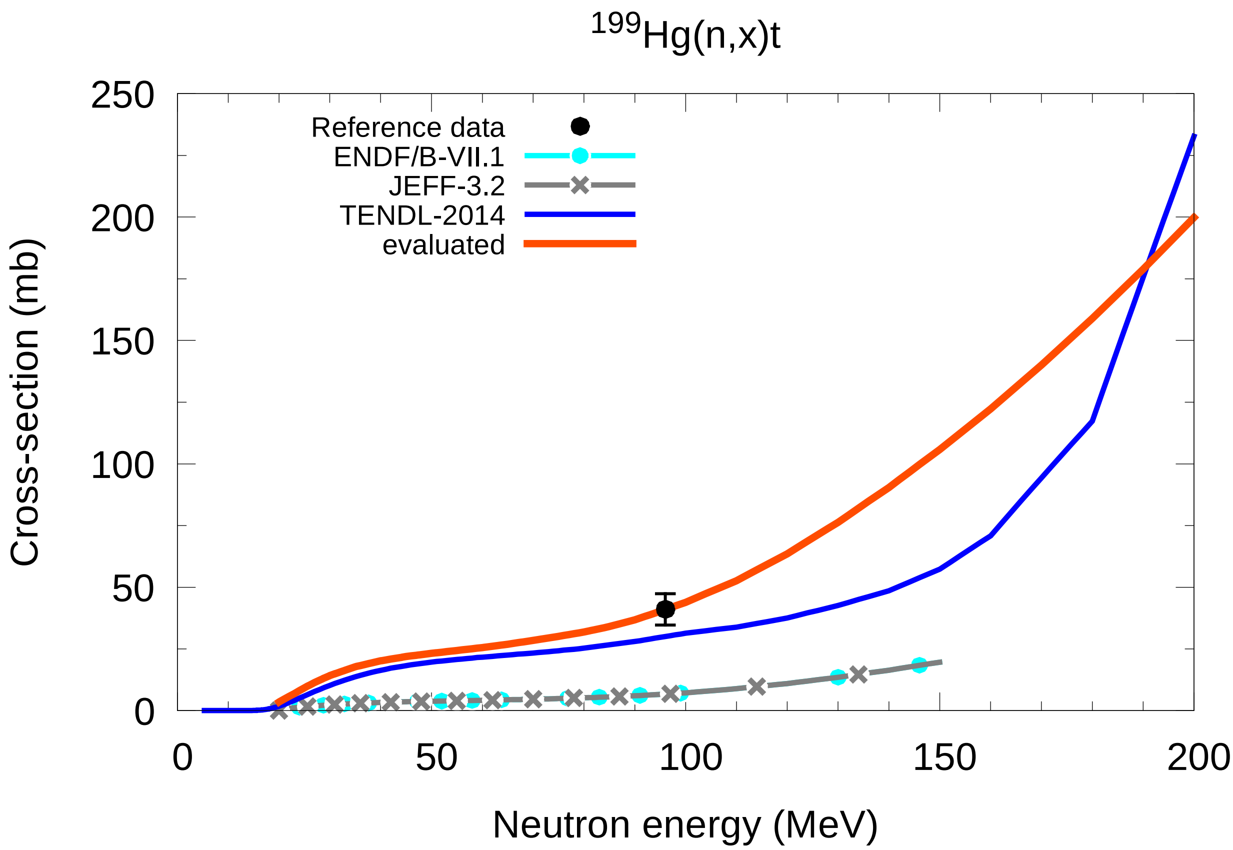
^{197}Au(n,x)t
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



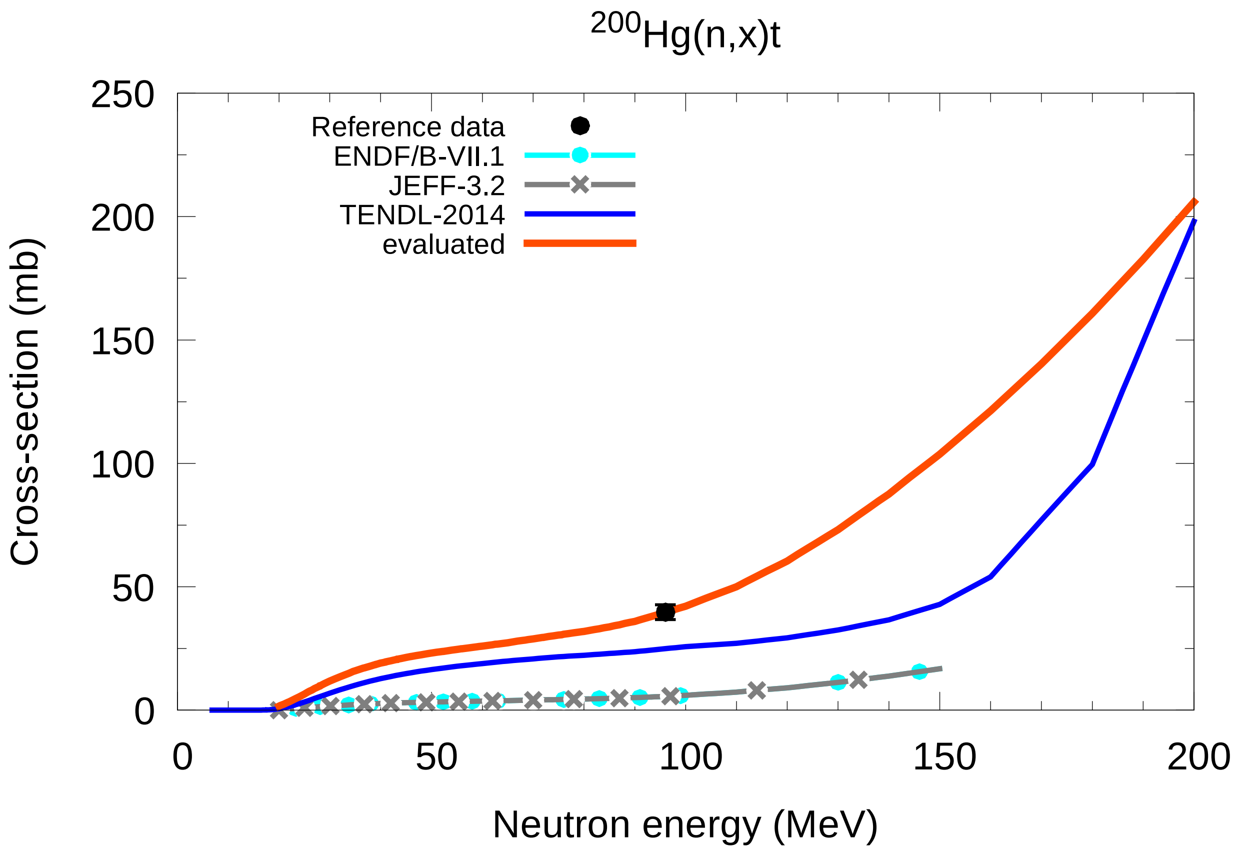
^{196}Hg(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



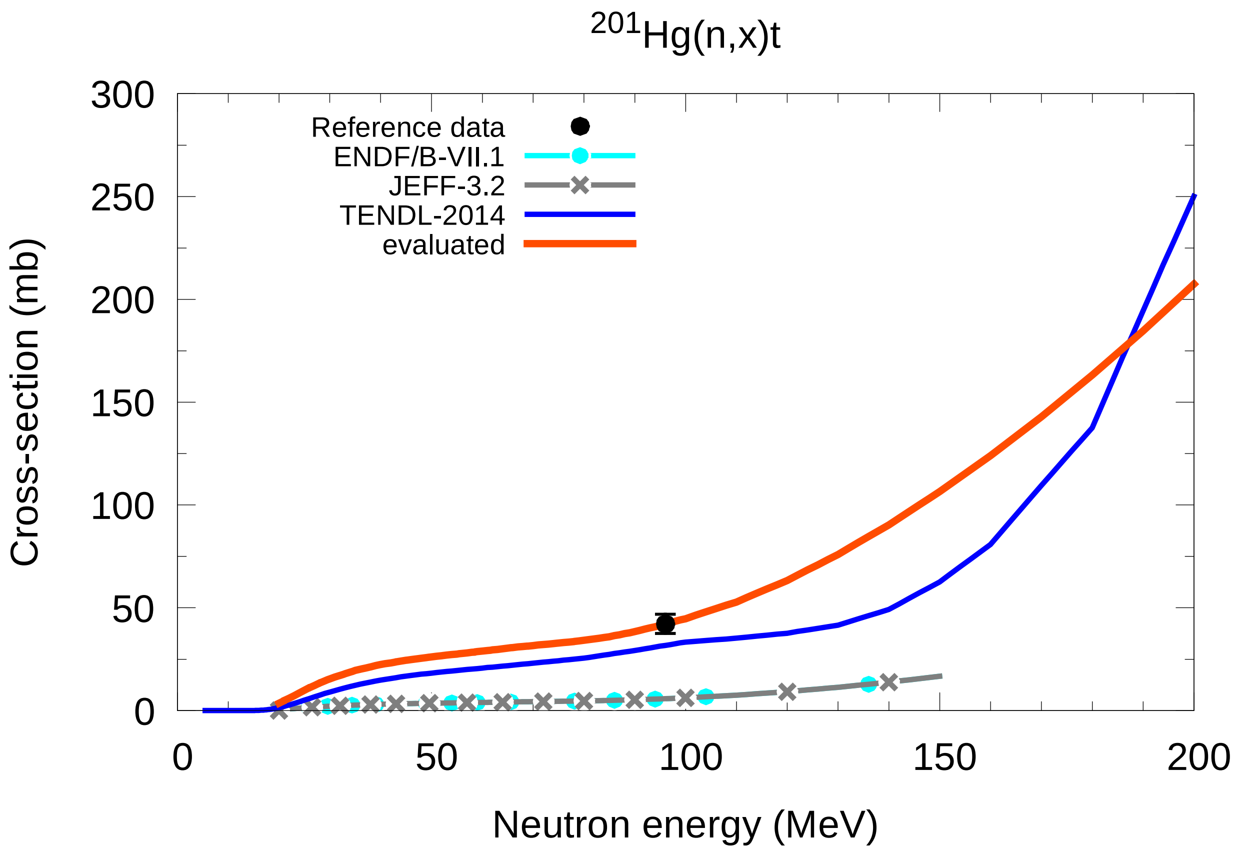
^{198}Hg(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



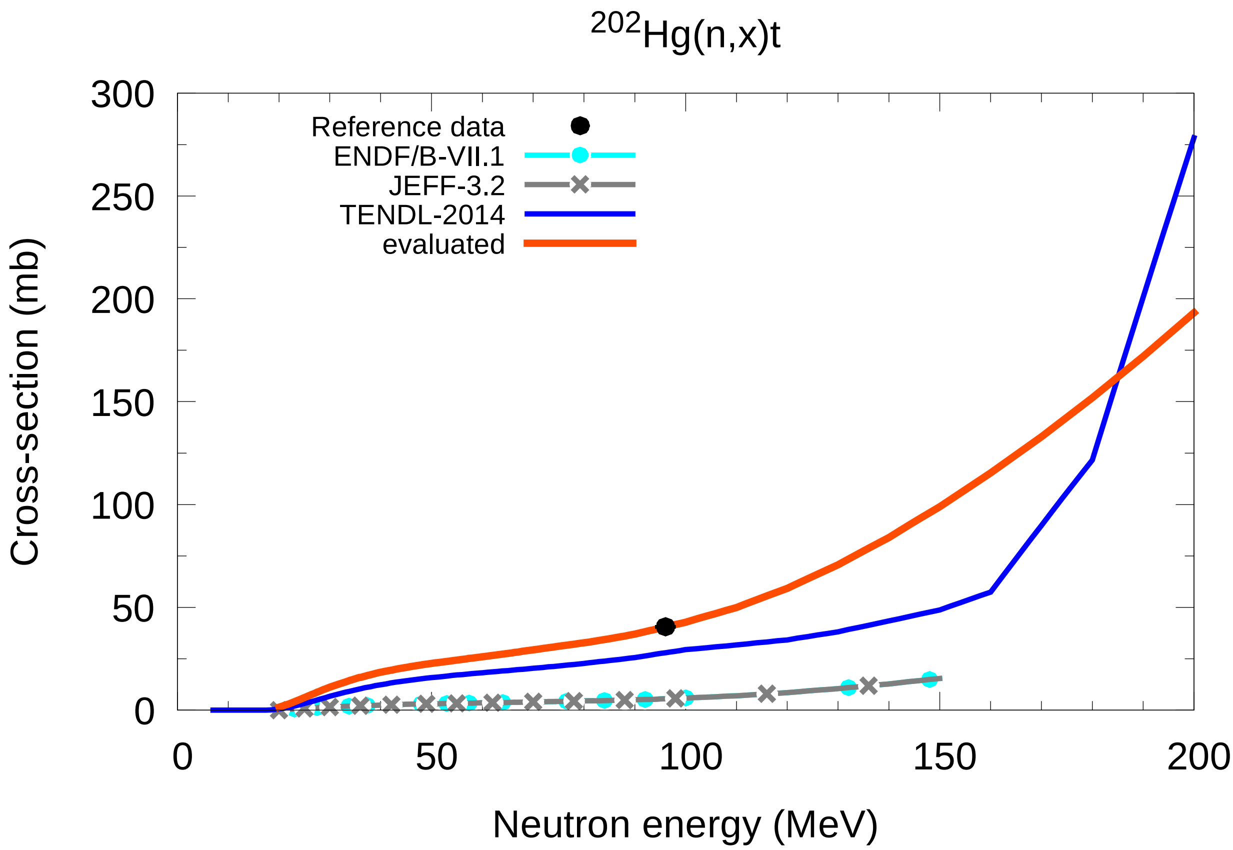
^{199}Hg(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)



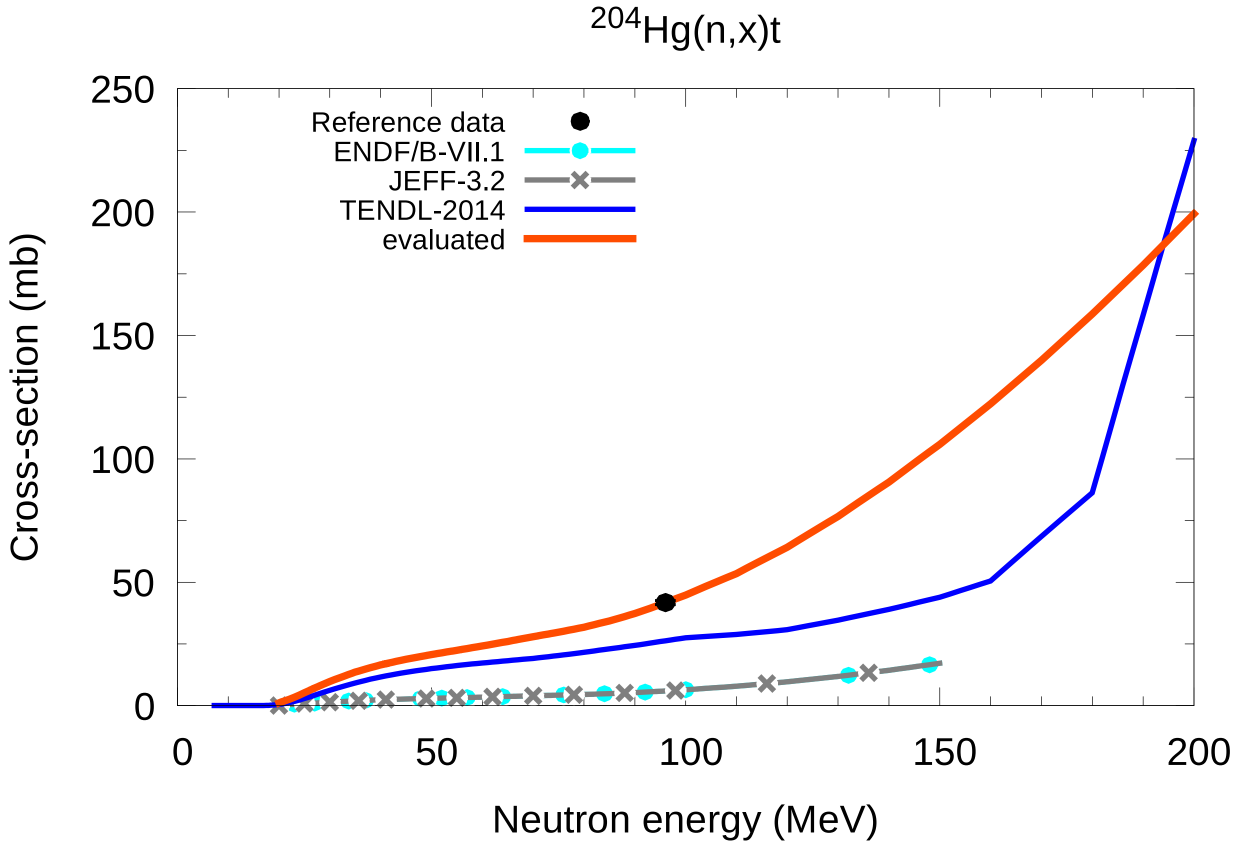
^{200}Hg(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)



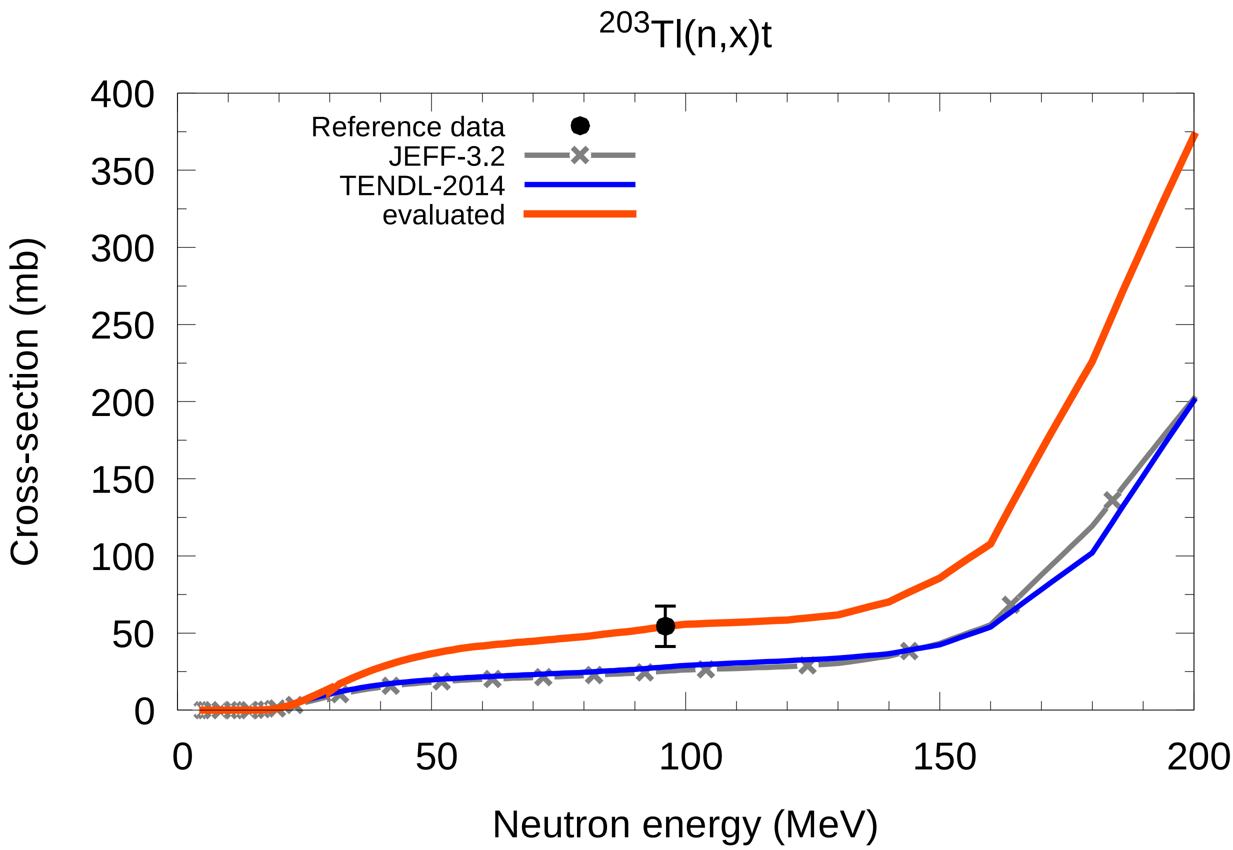
^{201}Hg(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



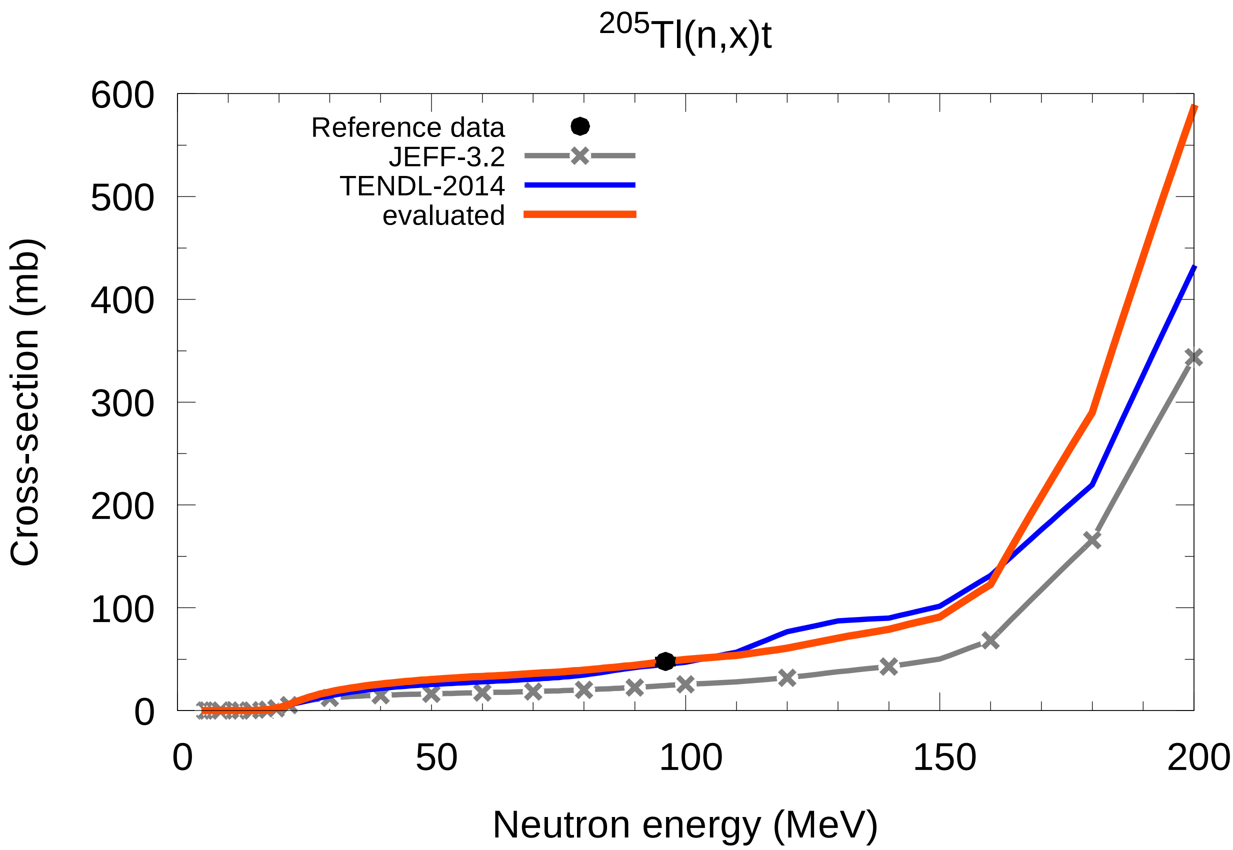
^{202}Hg(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300

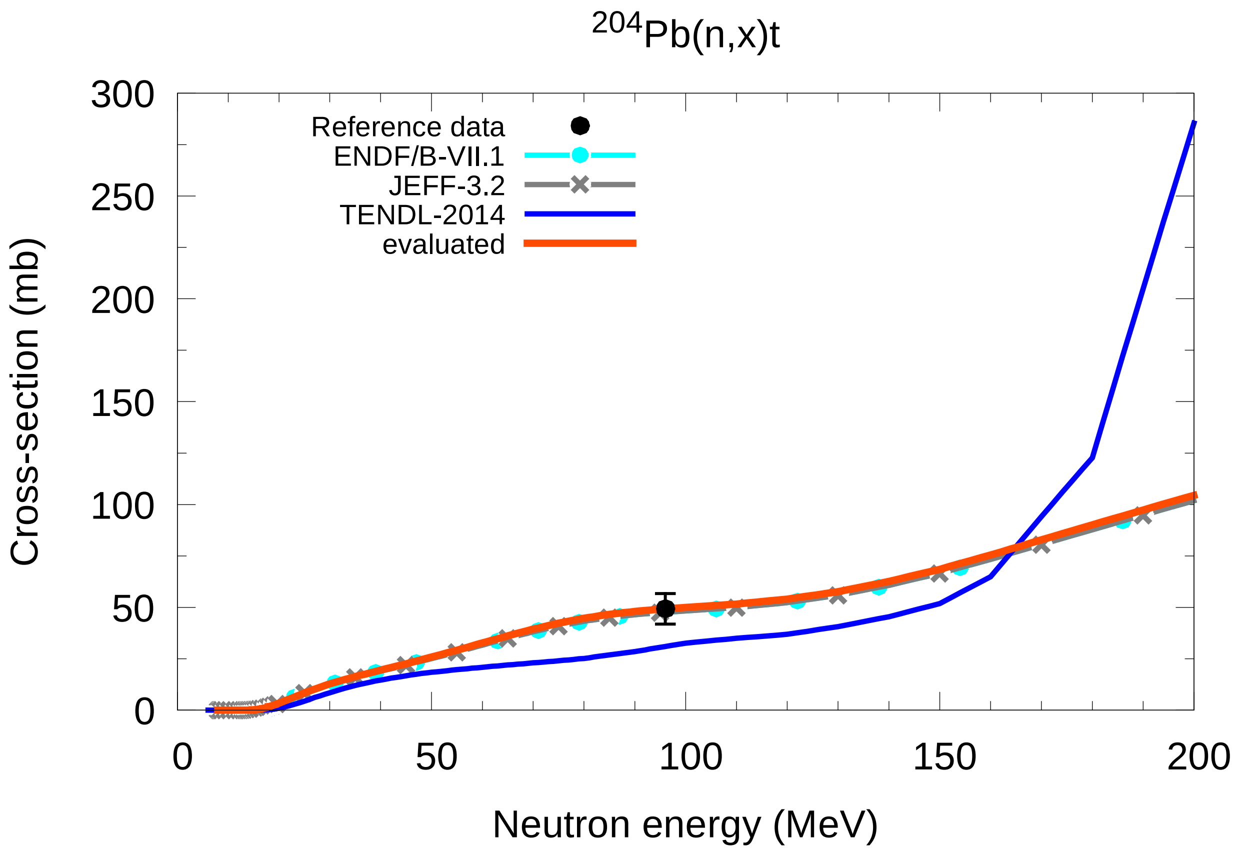


^{204}Hg(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250

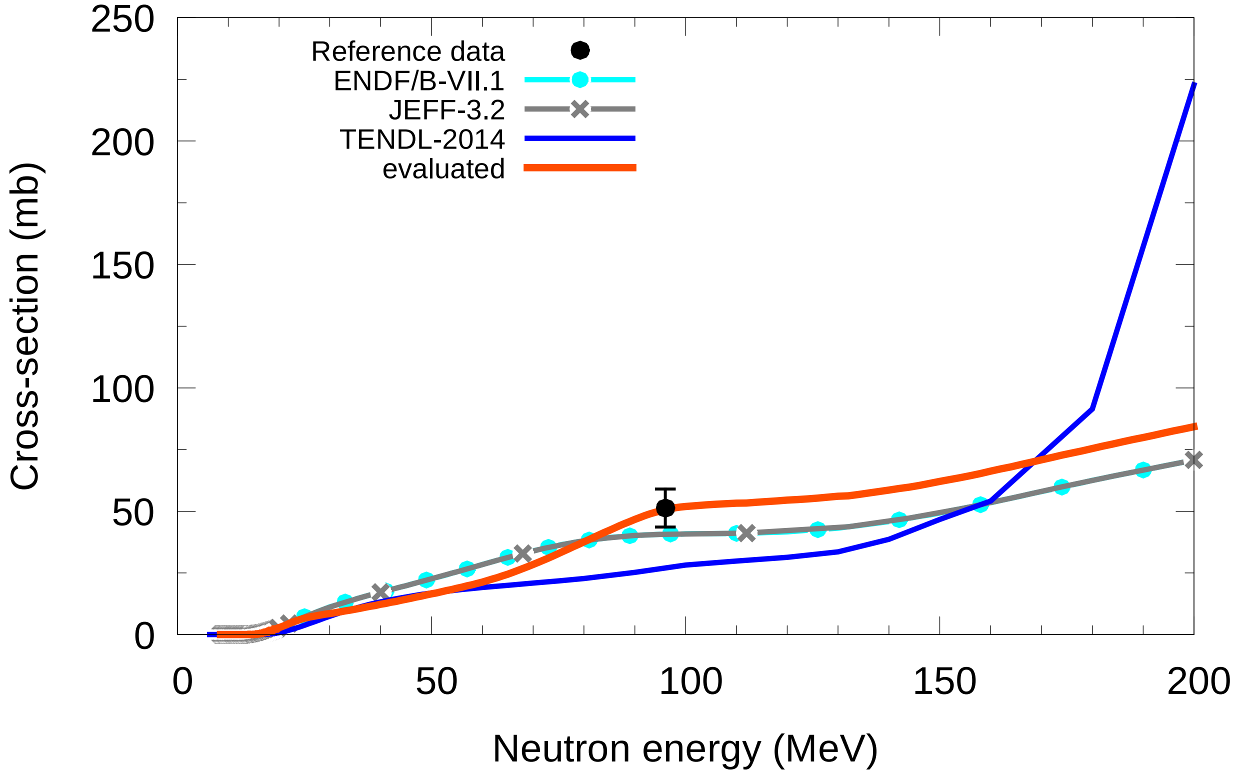


^{203}Tl(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400

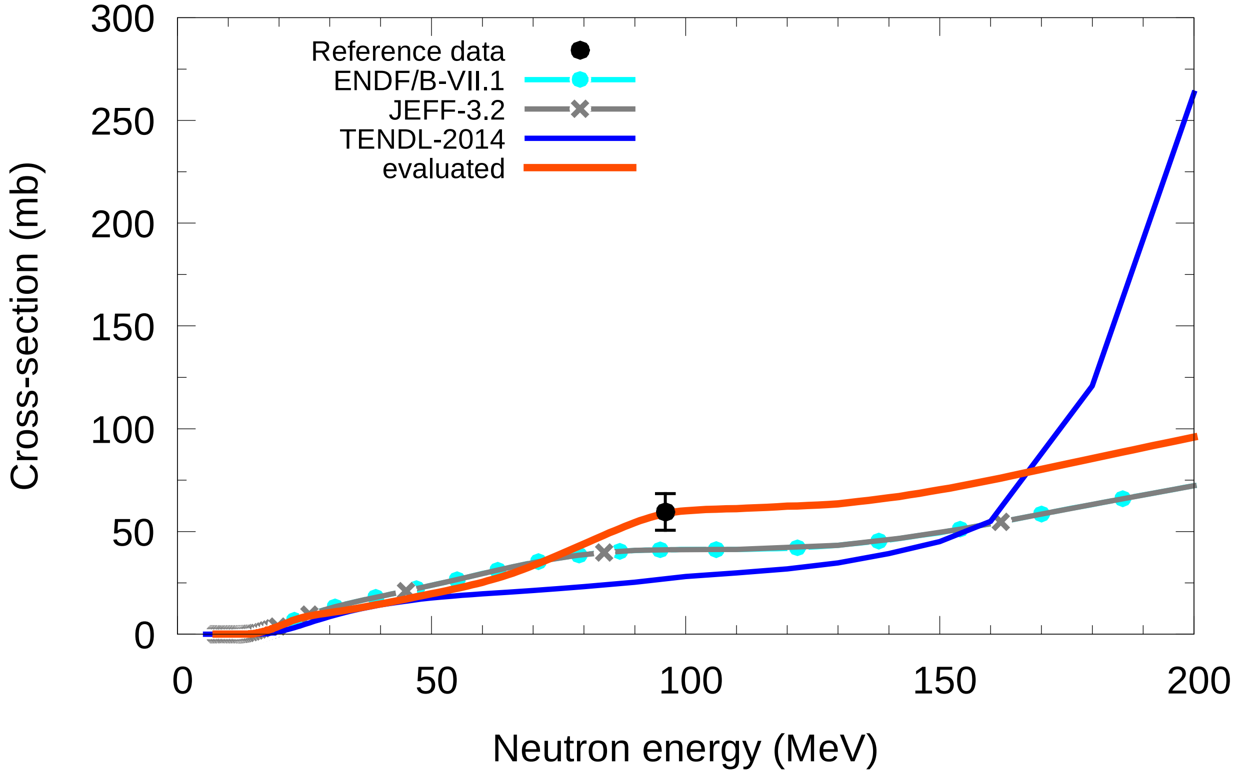

^{205}Tl(n,x)t
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200

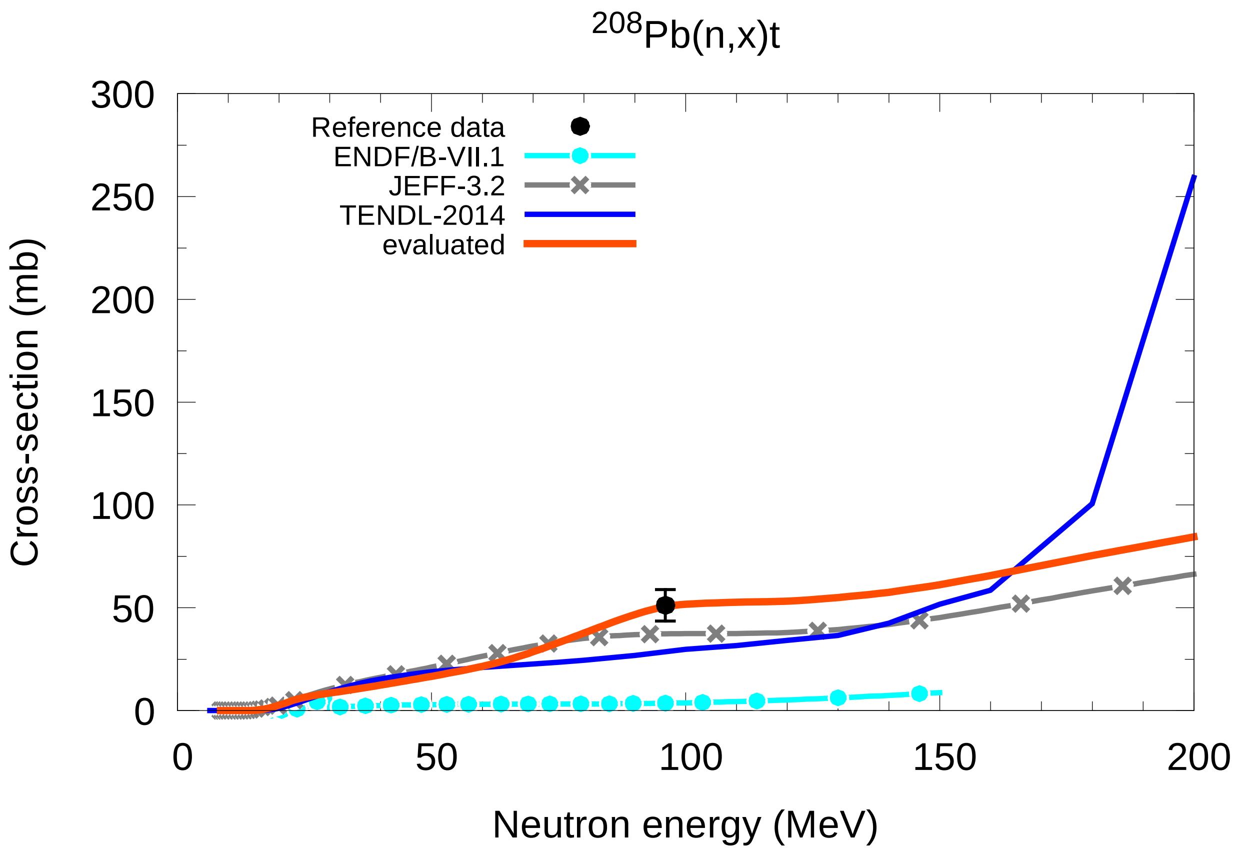

^{204}Pb(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
0
50
100
150
200

$^{206}Pb(n,x)t$

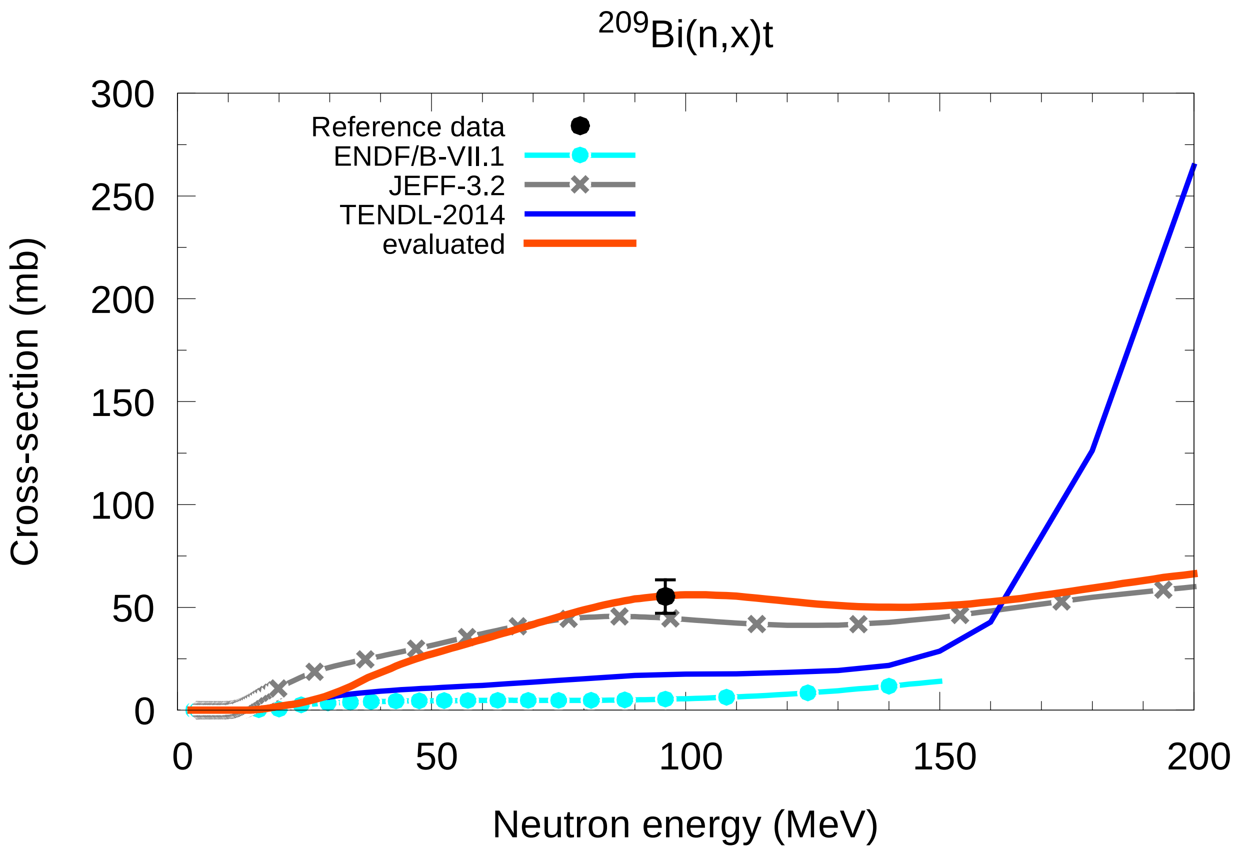


$^{207}Pb(n,x)t$





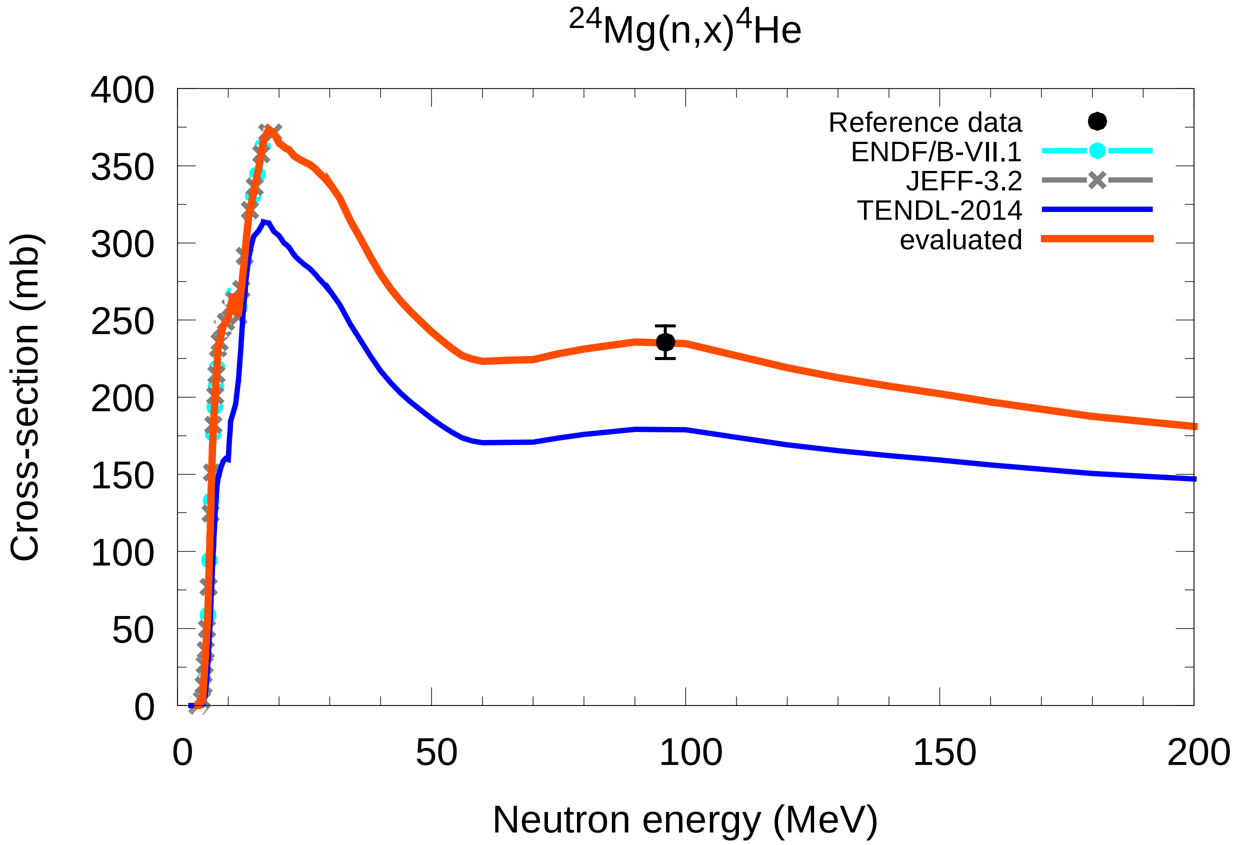
^{208}Pb(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



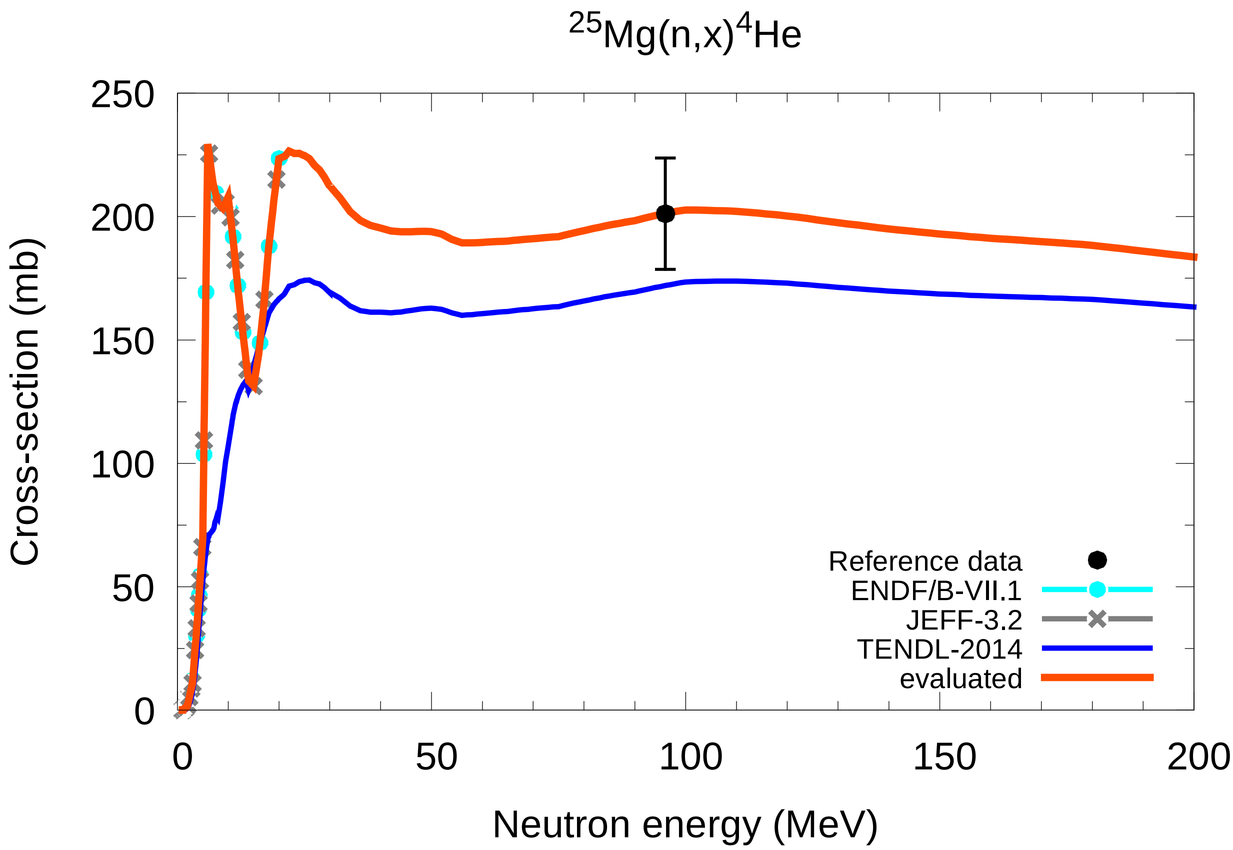
^{209}Bi(n,x)t
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300

Appendix D

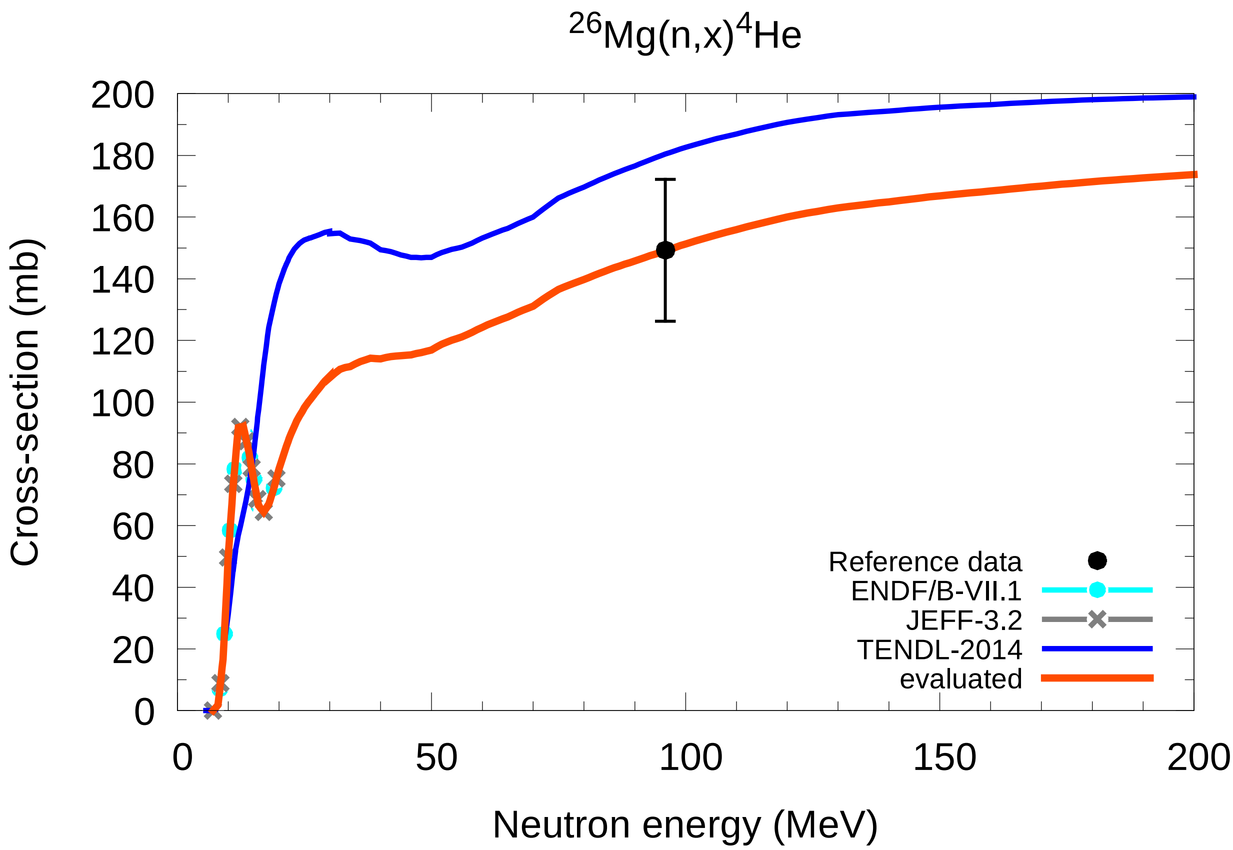
Evaluated α-particle production cross-sections, data from ENDF/B-VII.1, JEFF-3.2, and TENDL-2014, and cross-sections at 96 MeV estimated using the σ(A)- dependence



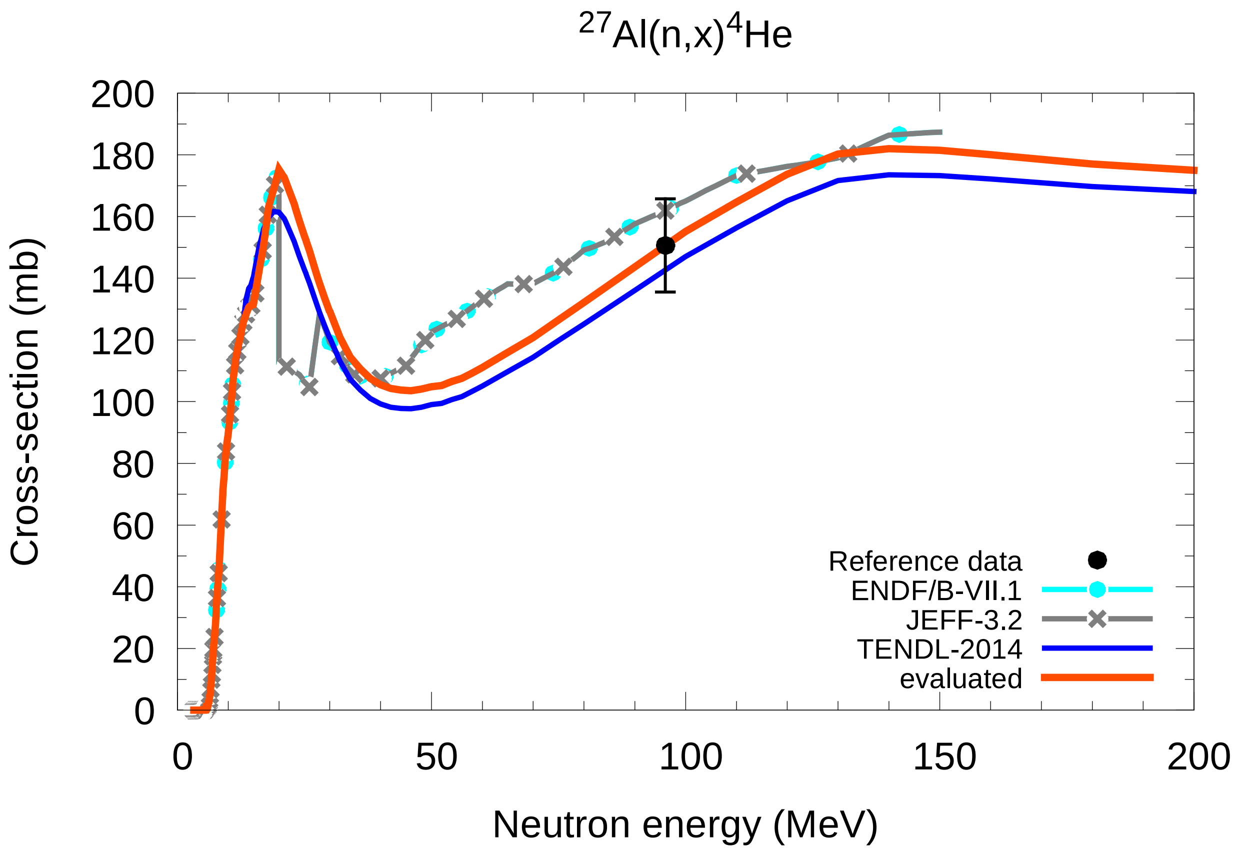
$^{24}Mg(n,x)^{4}He$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



$^{25}Mg(n,x)^{4}He$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated

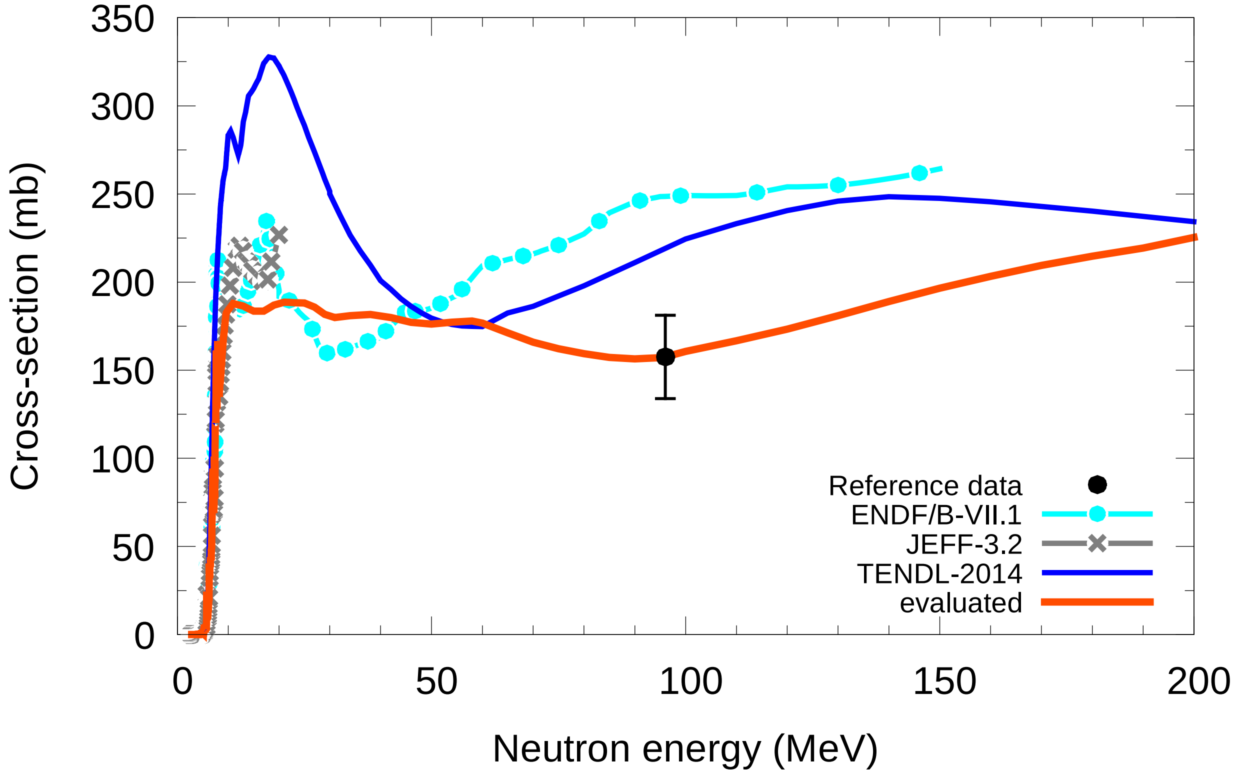


$^{26}Mg(n,x)^4He$
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated

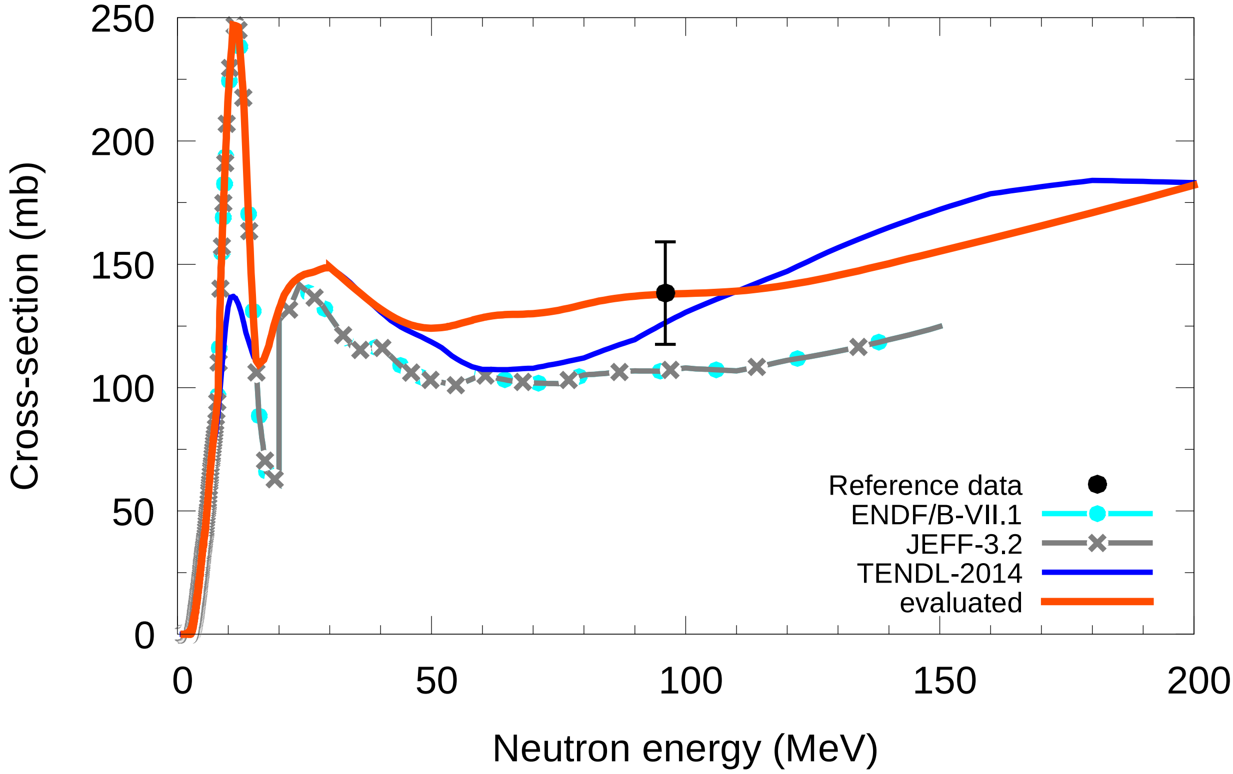


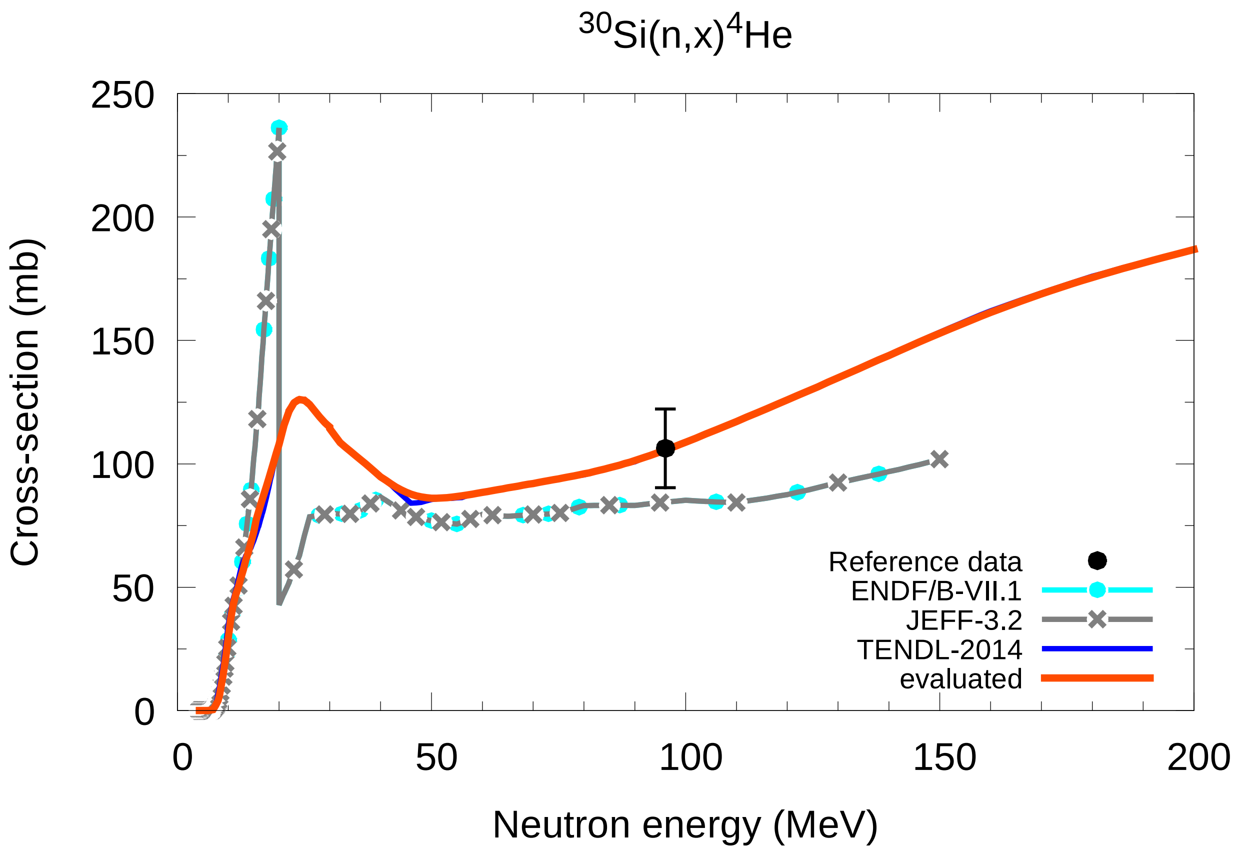
$^{27}Al(n,x)^4He$
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated

^{28}Si(n,x)^{4}He

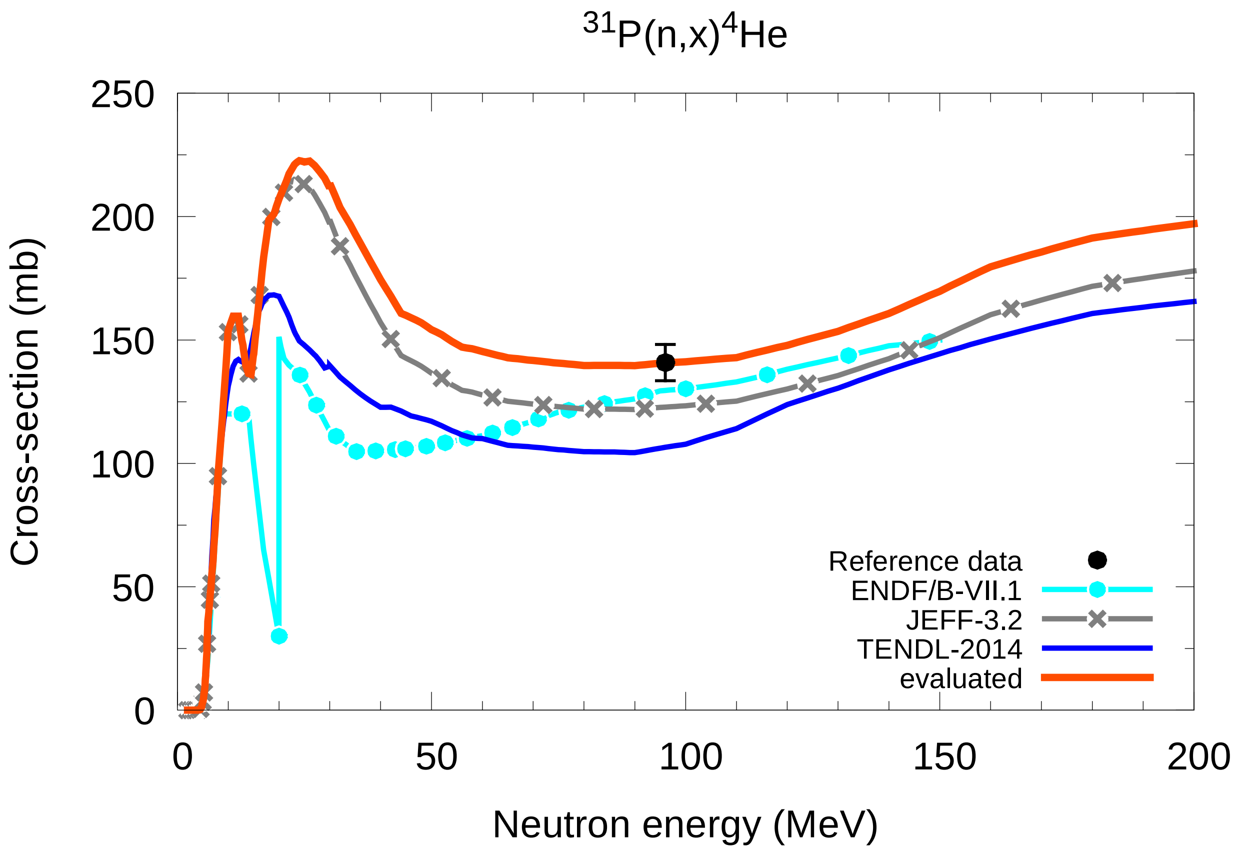


^{29}Si(n,x)^{4}He

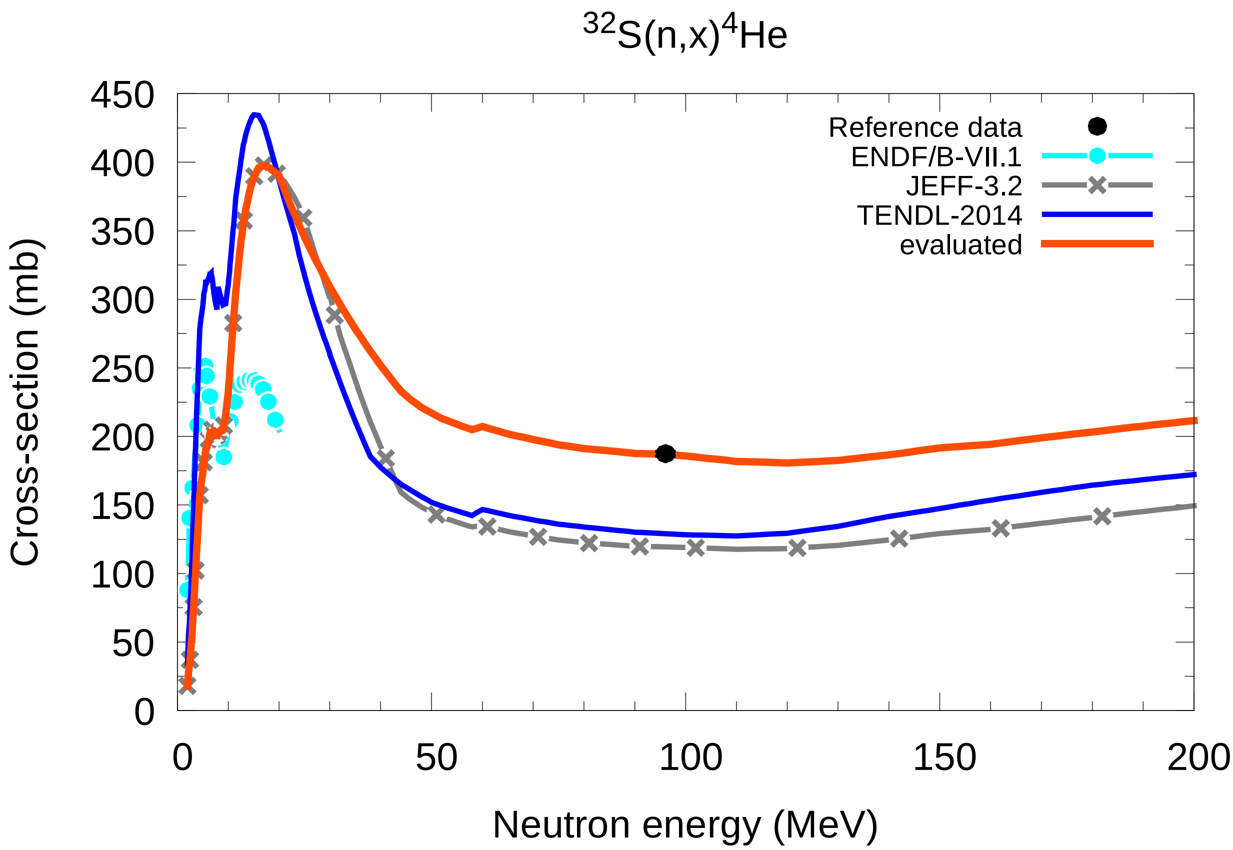




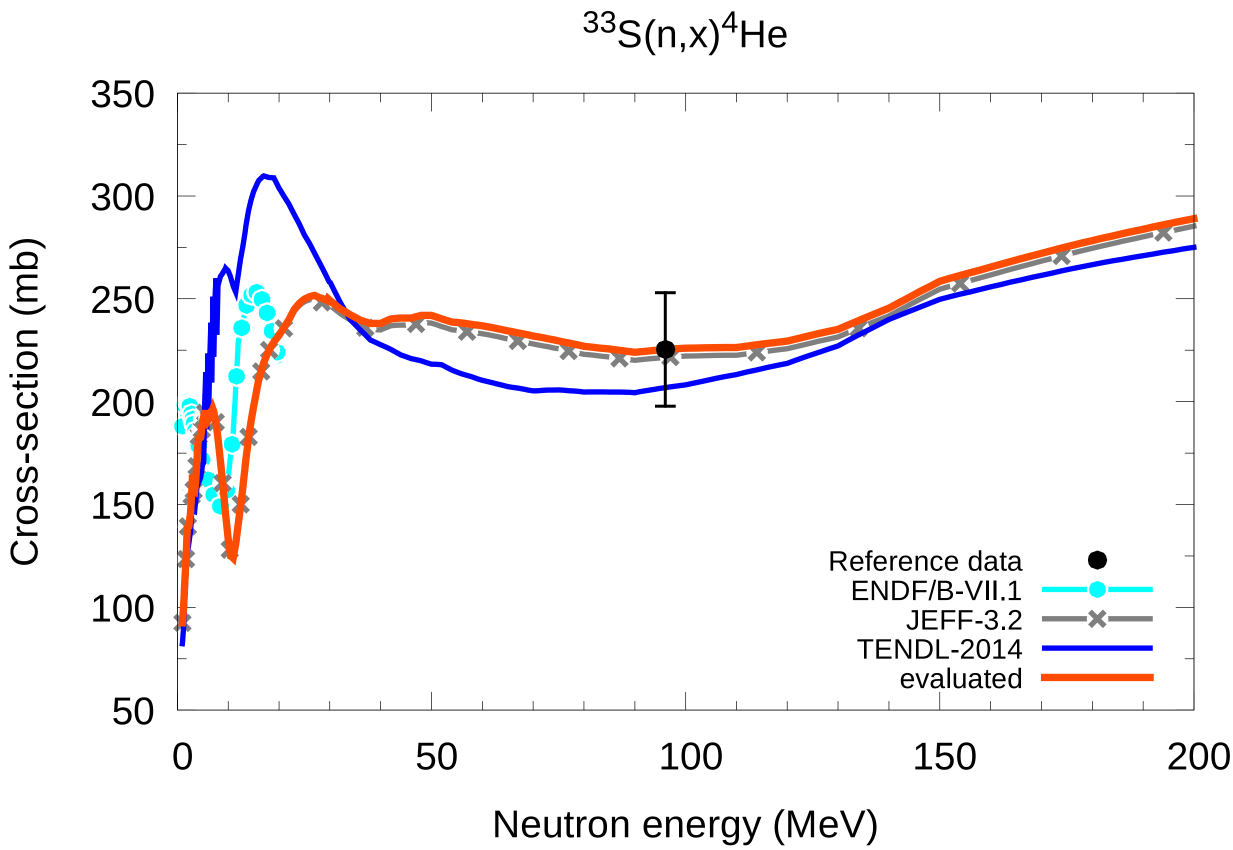
$^{30}Si(n,x)^{4}He$
Cross-section (mb)
250
200
150
100
50
0
0
50
100
150
200
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



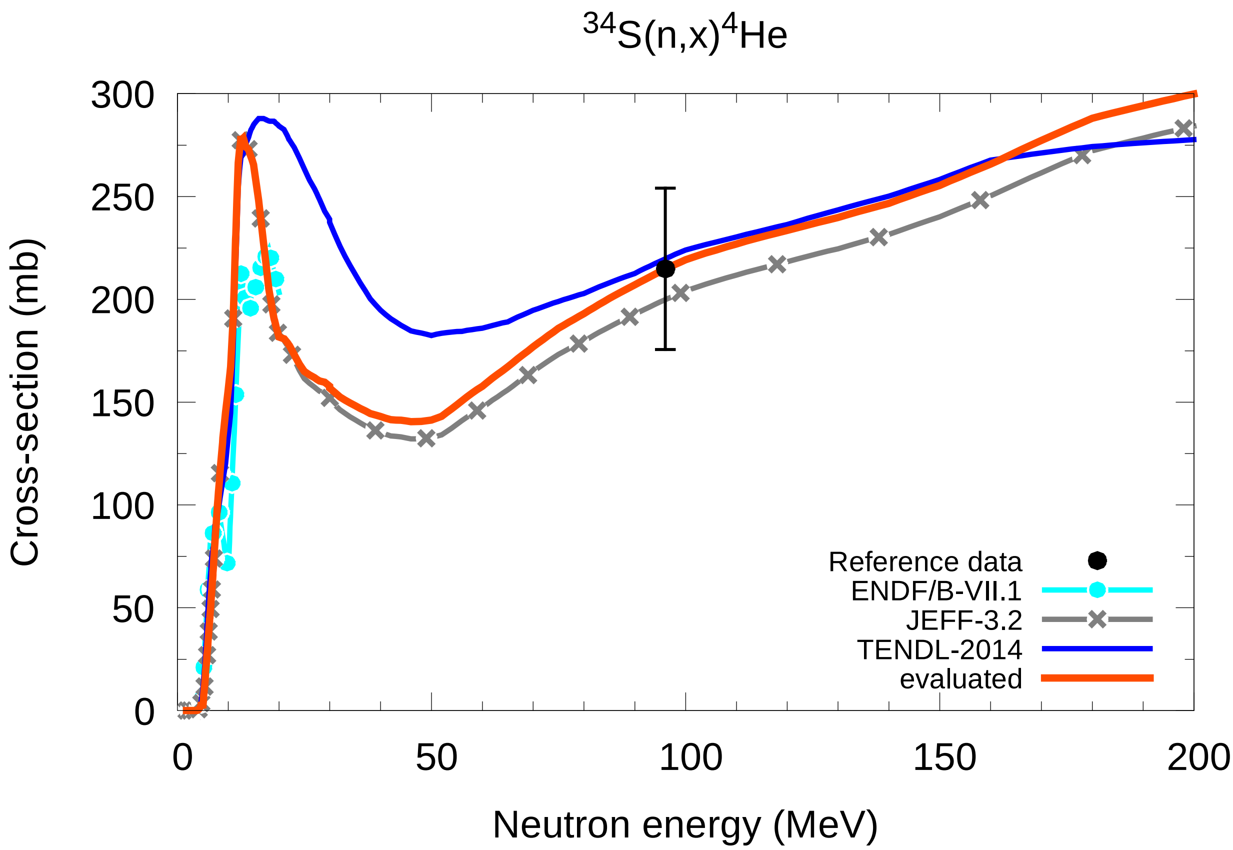
$^{31}P(n,x)^{4}He$
Cross-section (mb)
250
200
150
100
50
0
0
50
100
150
200
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



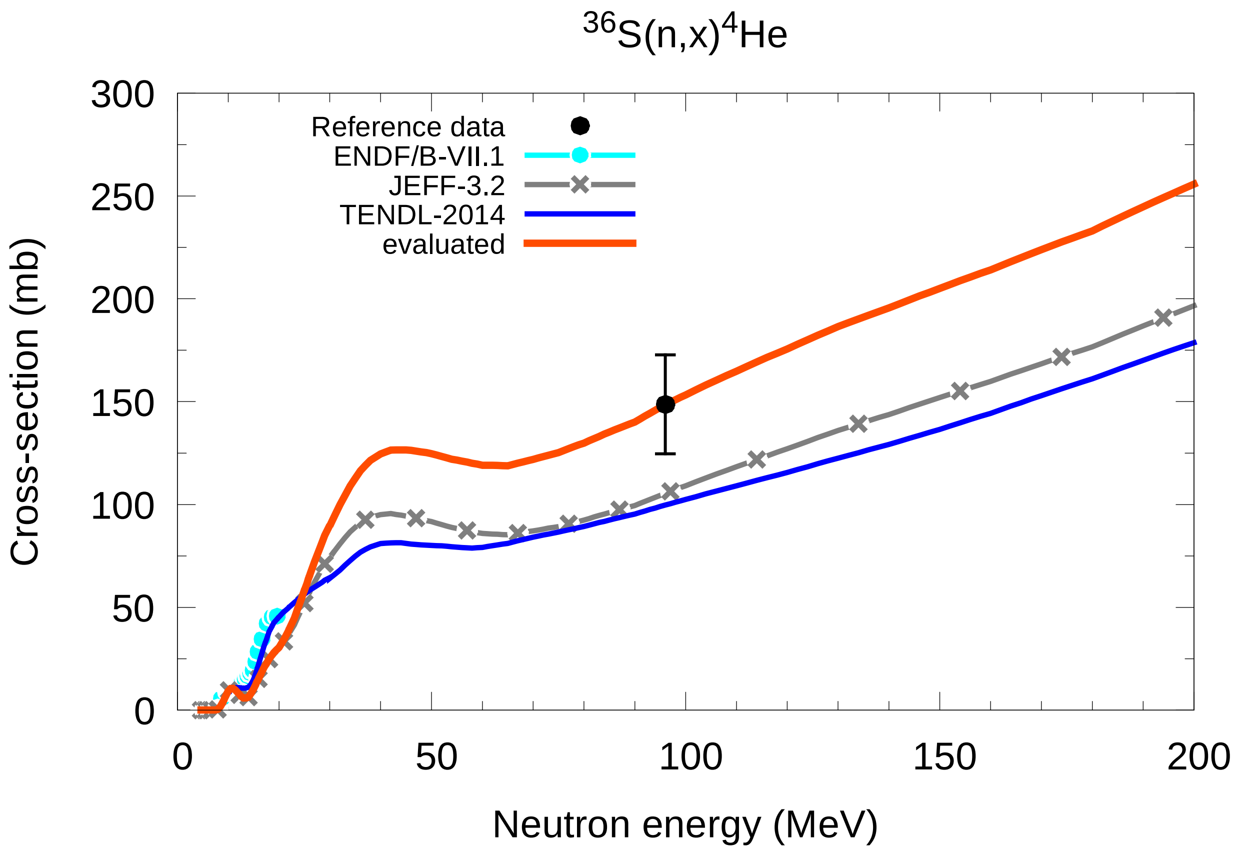
$^{32}S(n,x)^{4}He$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



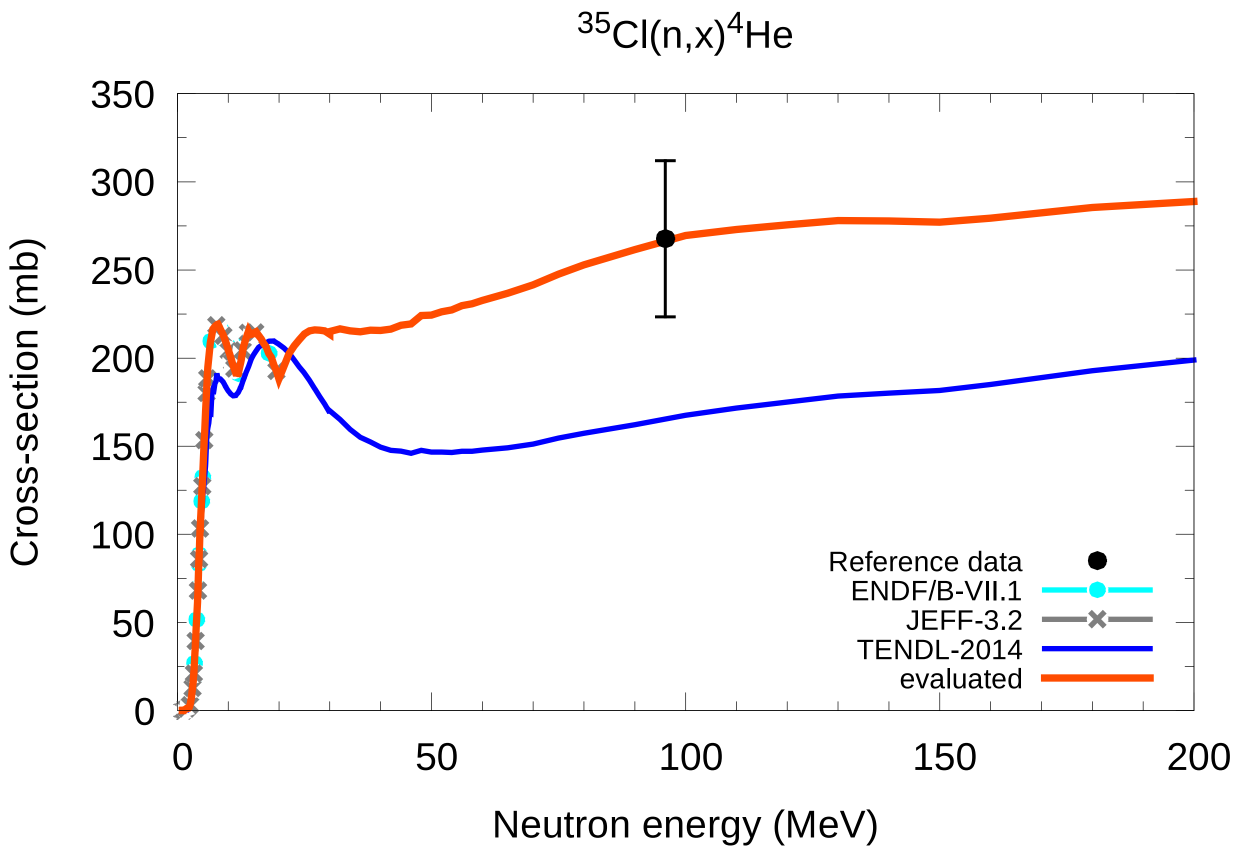
$^{33}S(n,x)^{4}He$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



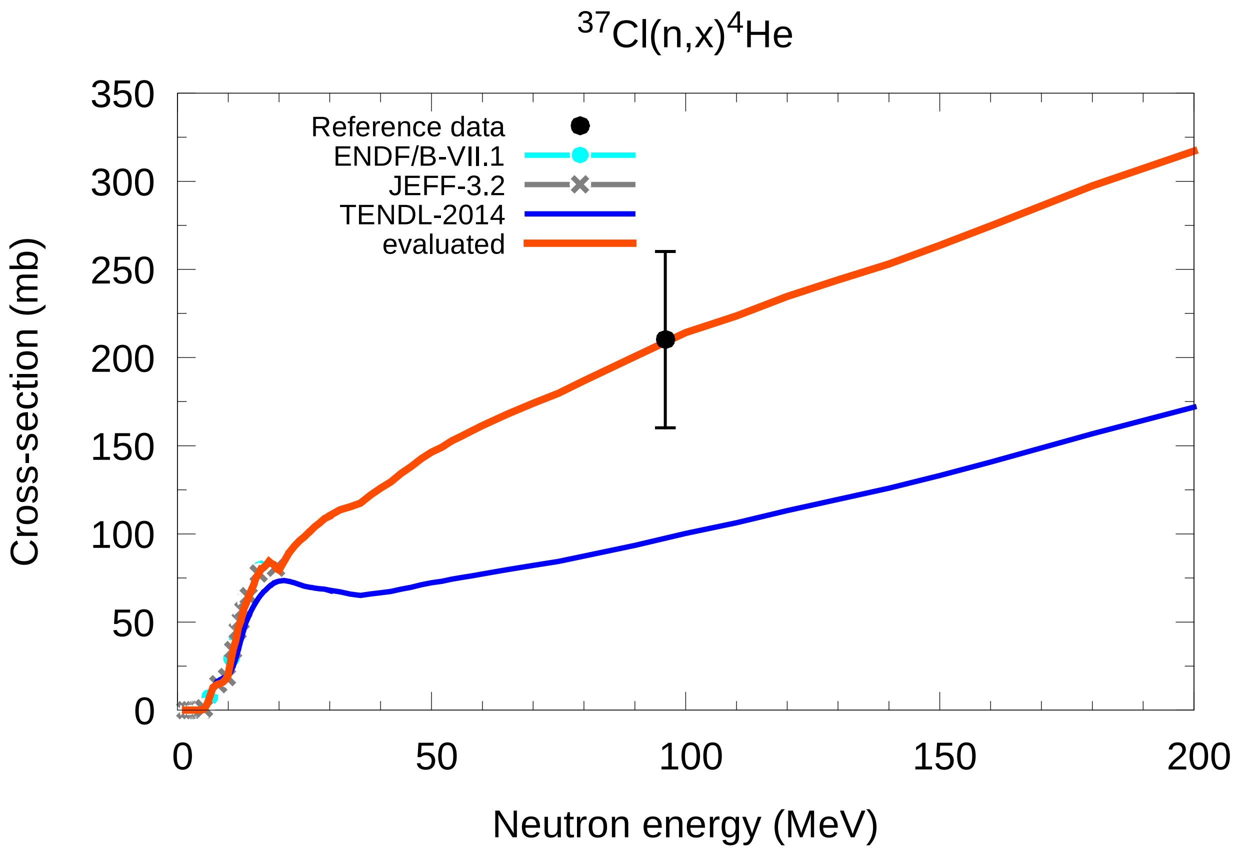
34S(n,x)4He
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



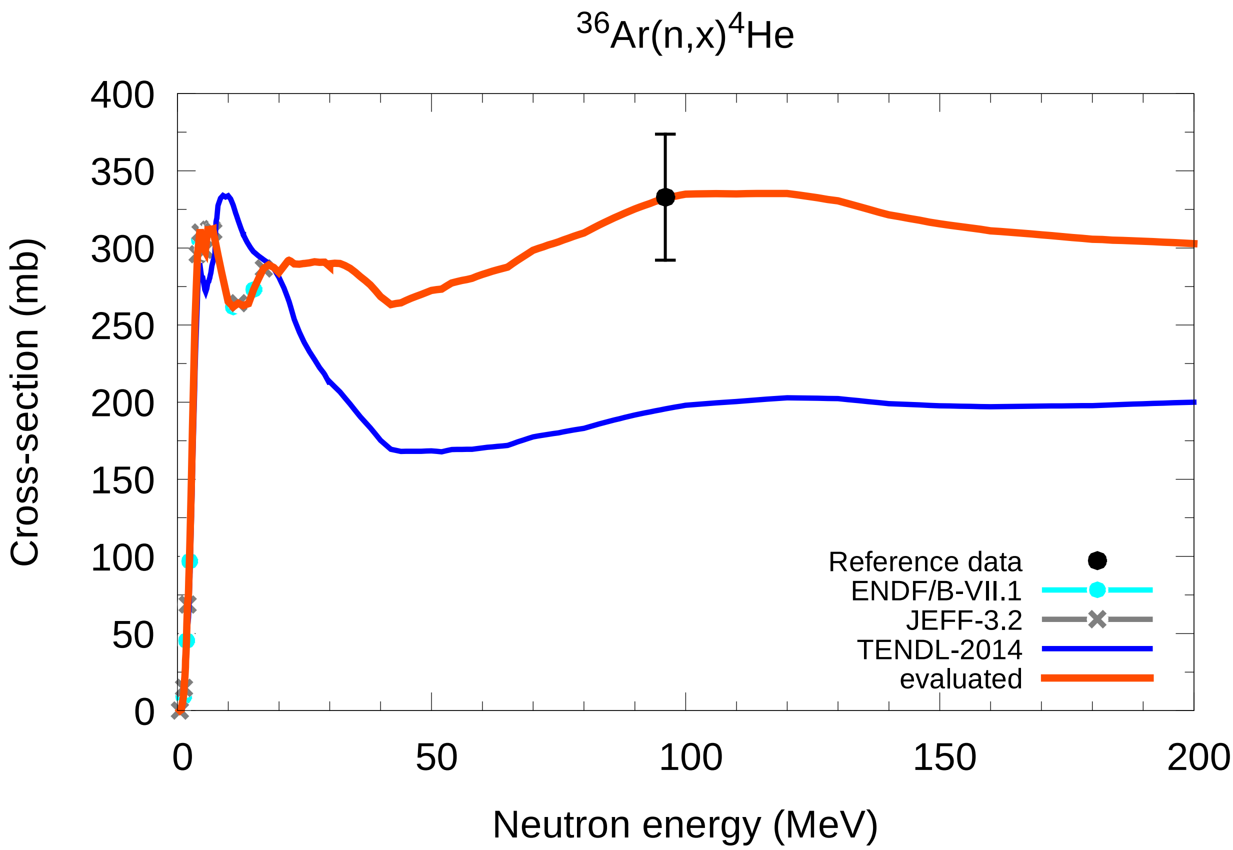
36S(n,x)4He
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



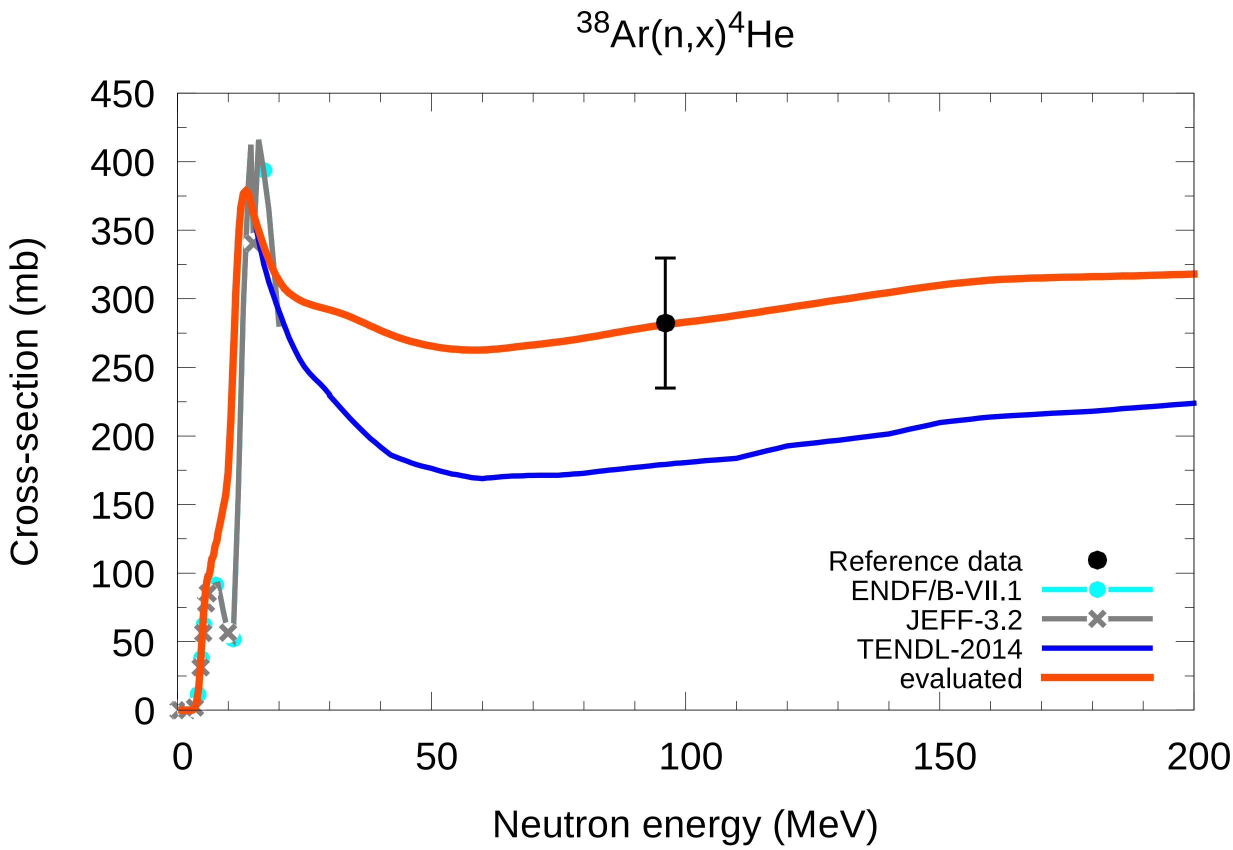
$^{35}Cl(n,x)^4He$
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



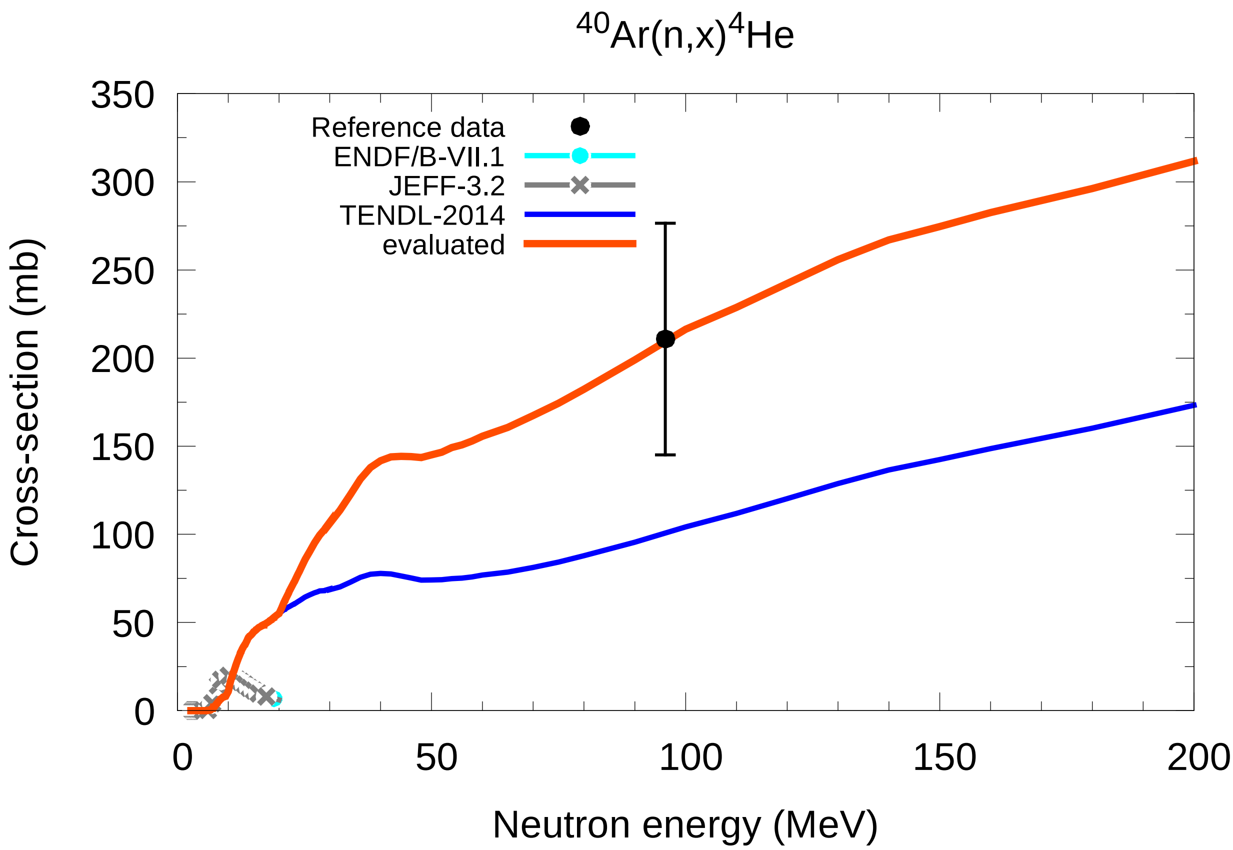
$^{37}Cl(n,x)^4He$
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated

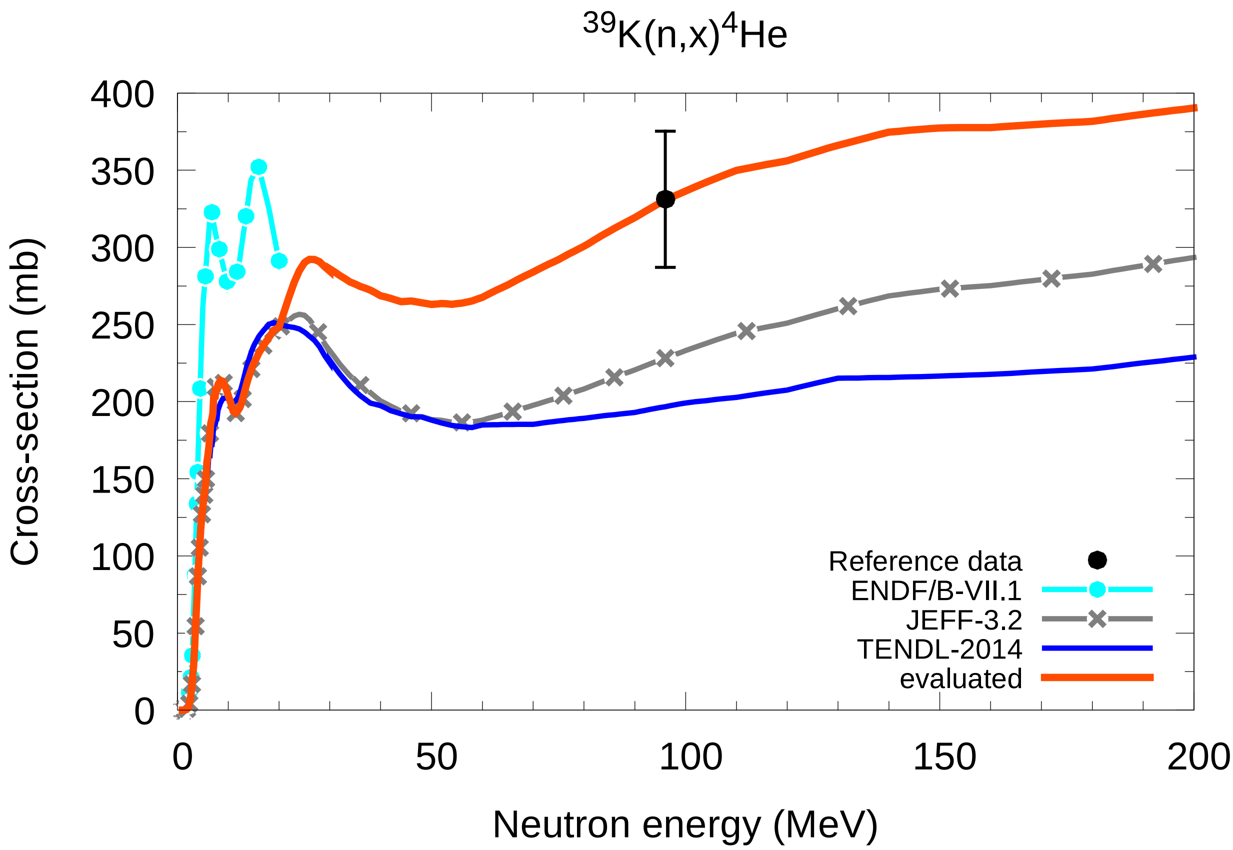


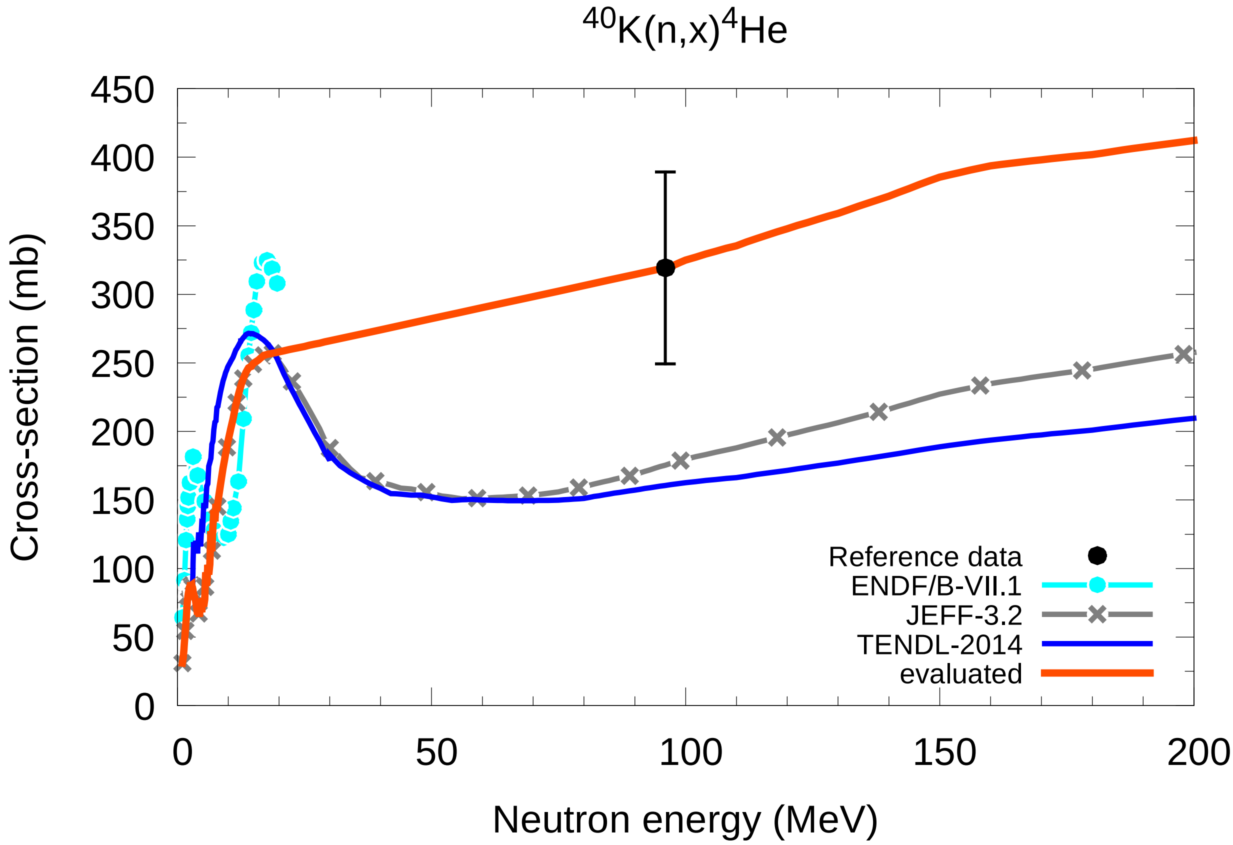
$^{36}Ar(n,x)^{4}He$
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



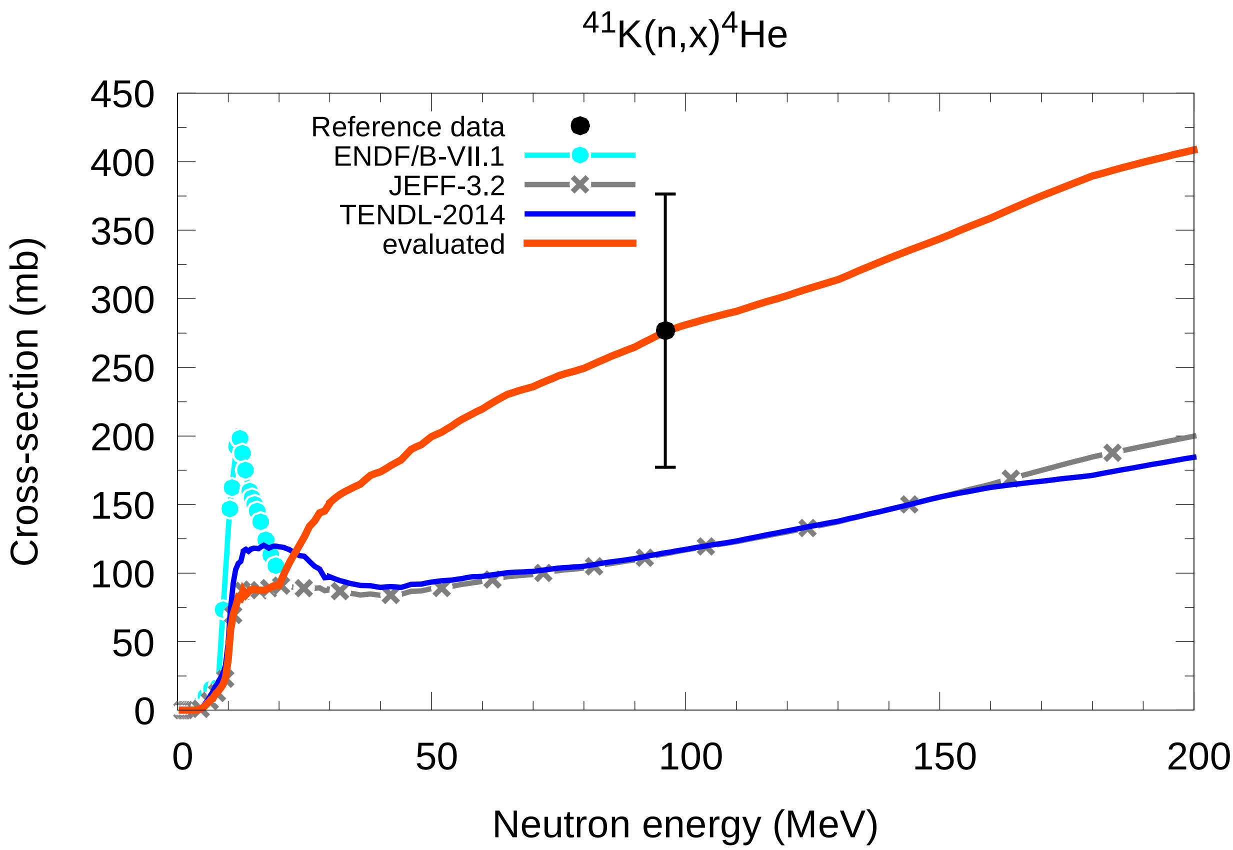
$^{38}Ar(n,x)^{4}He$
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated


$^{40}Ar(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350

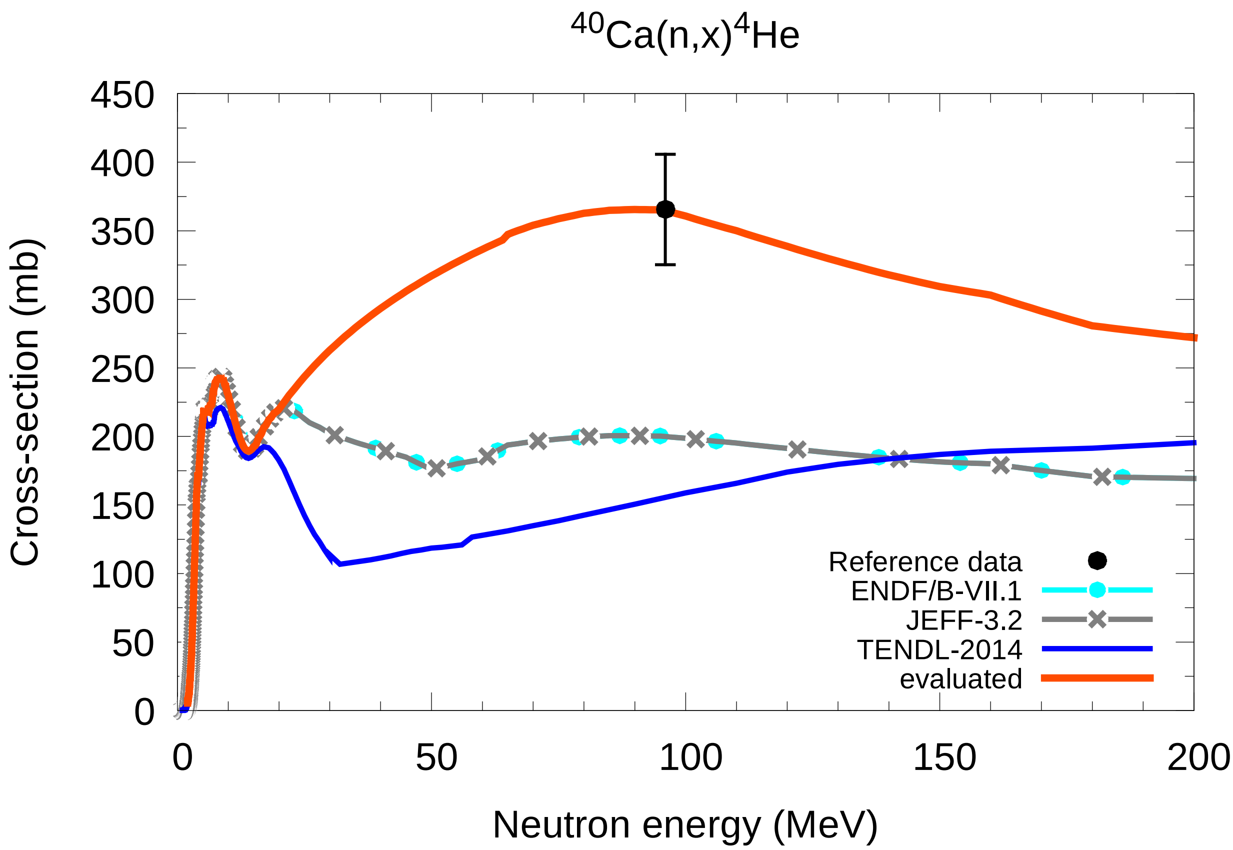

$^{39}K(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



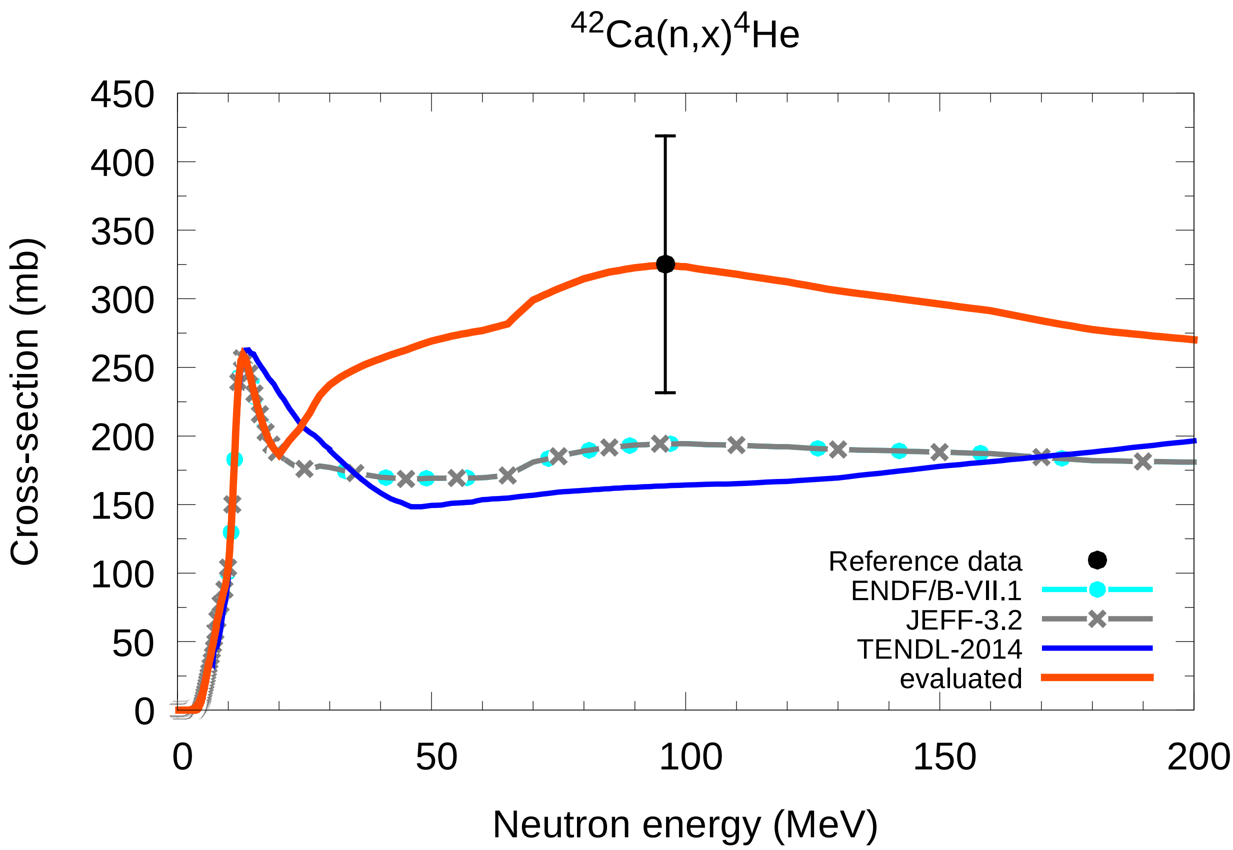
40K(n,x)4He
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300
350
400
450



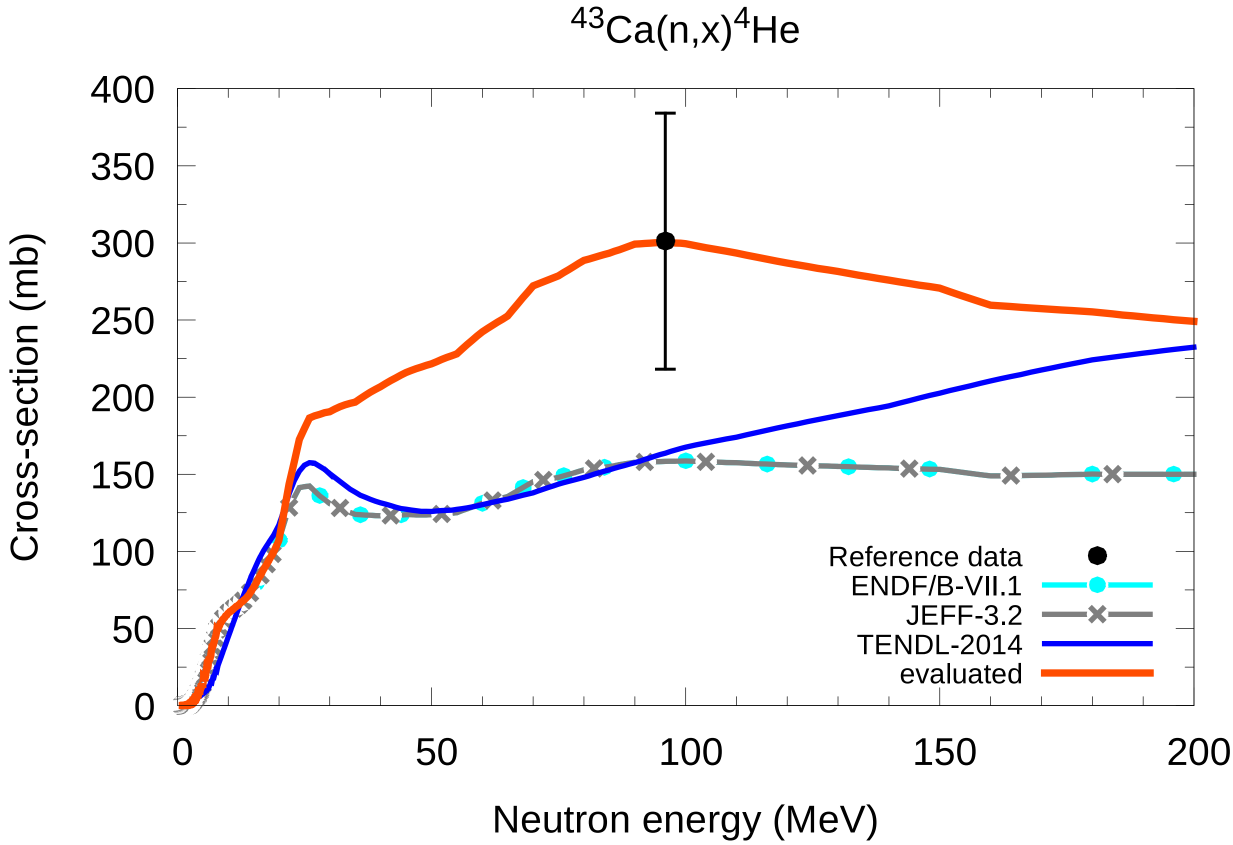
41K(n,x)4He
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300
350
400
450



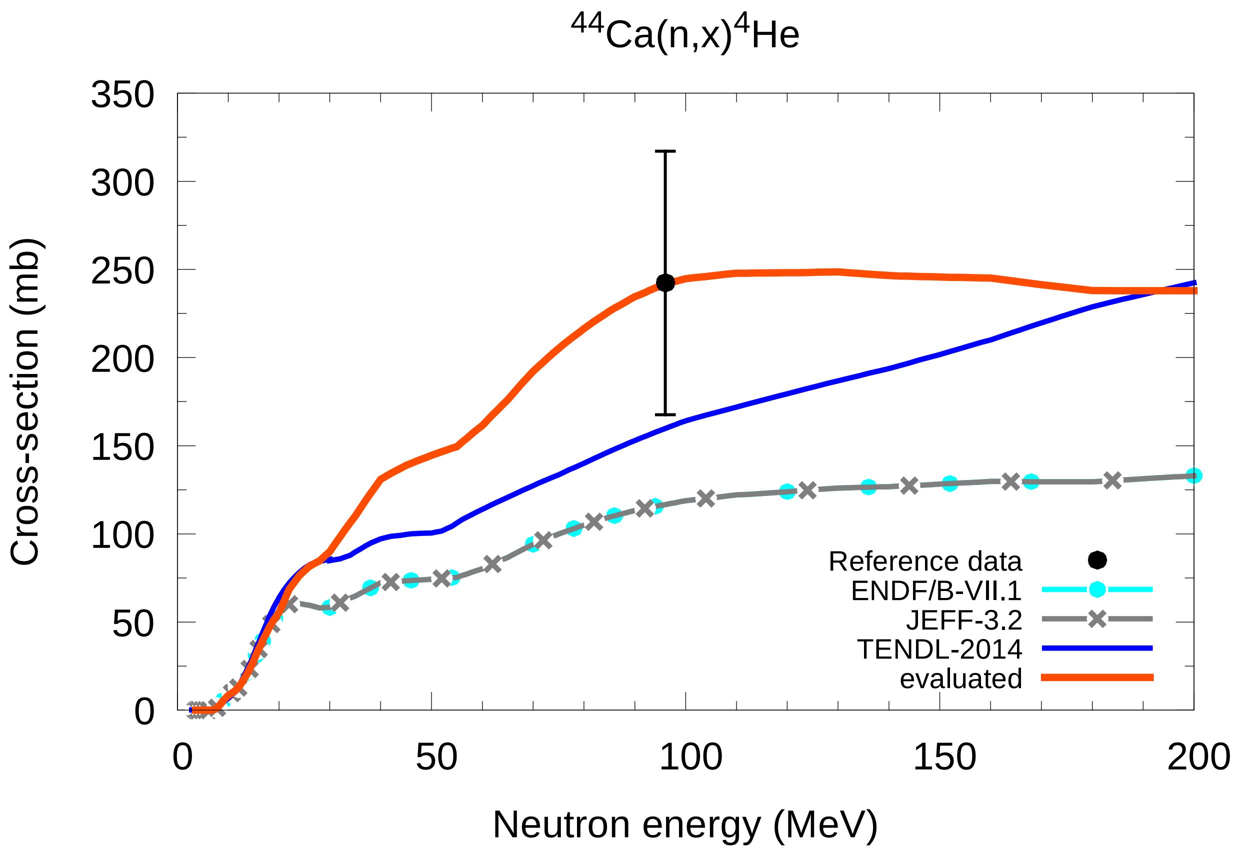
40Ca(n,x)4He
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



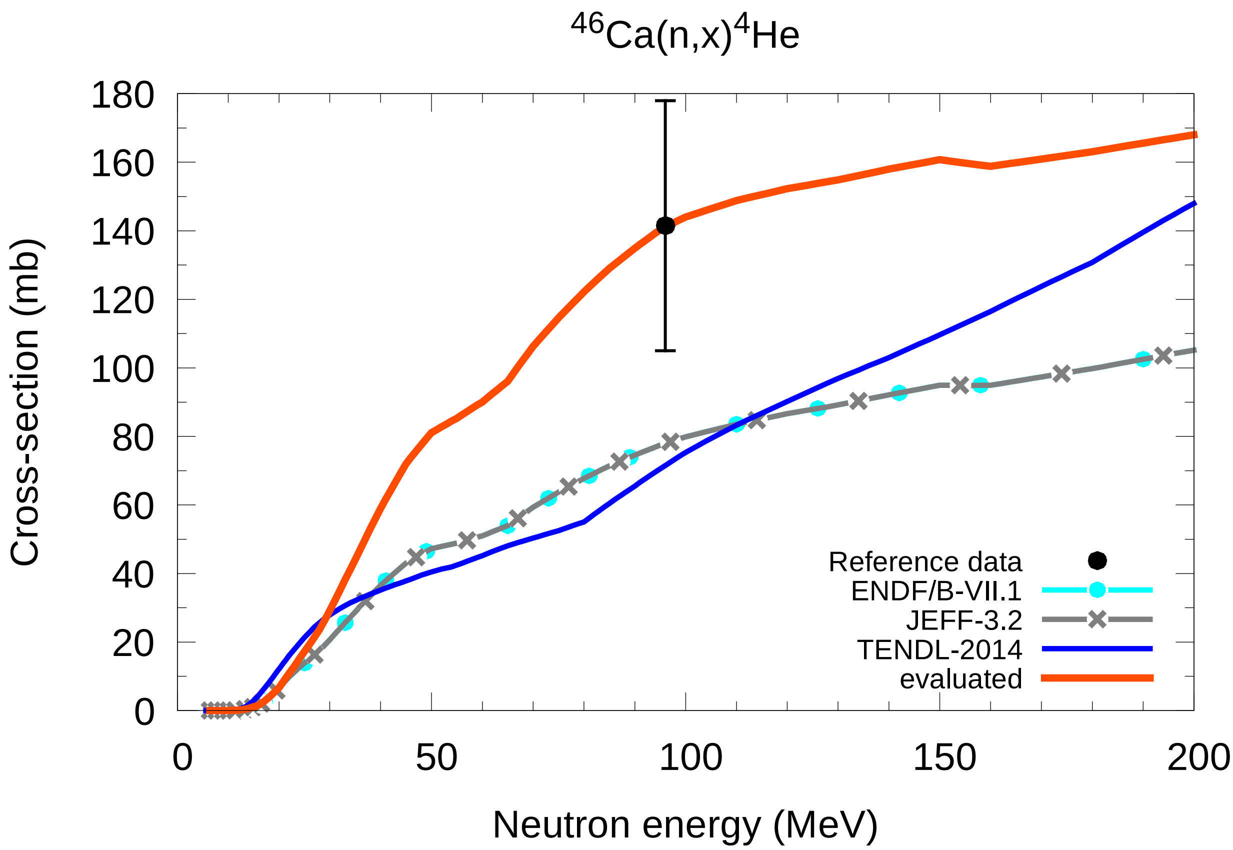
42Ca(n,x)4He
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



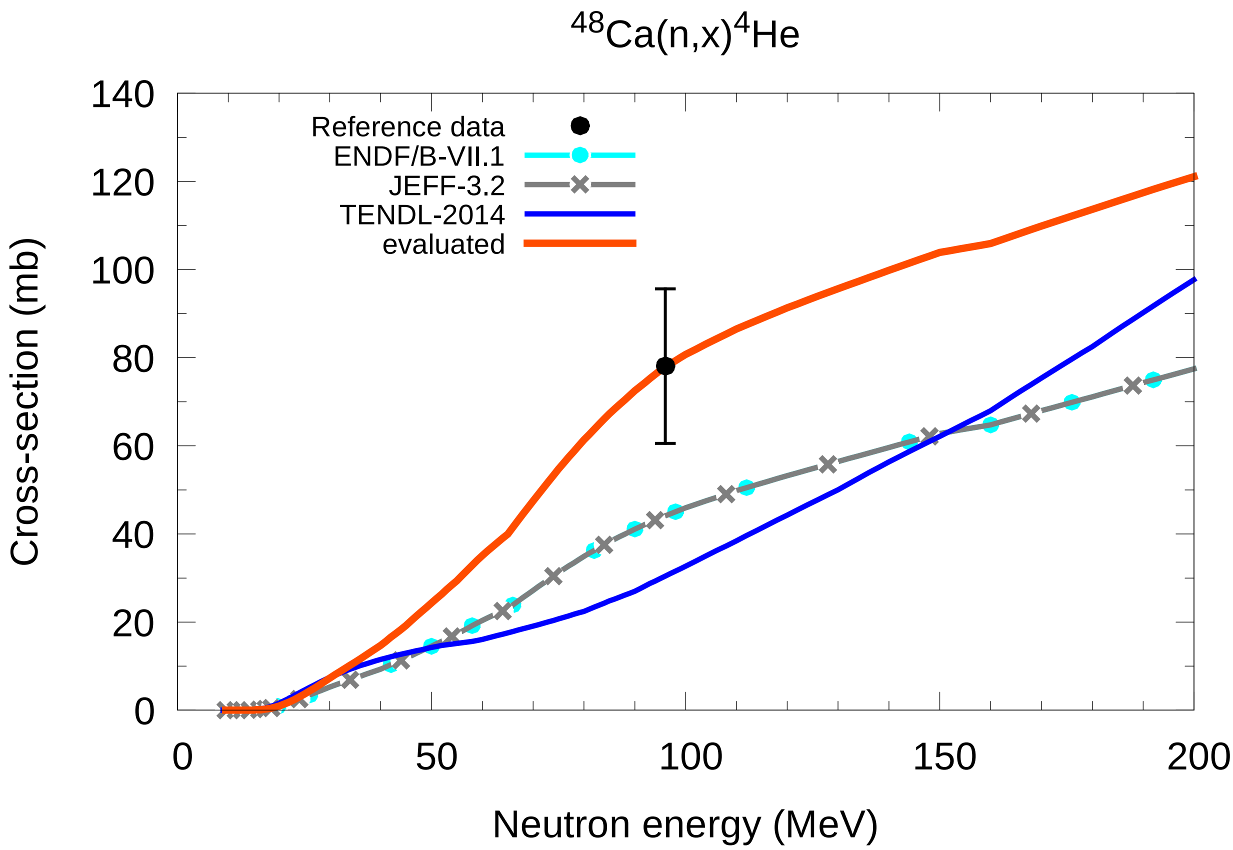
$^{43}Ca(n,x)^{4}He$
Cross-section (mb)
Neutron energy (MeV)
400
350
300
250
200
150
100
50
0
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



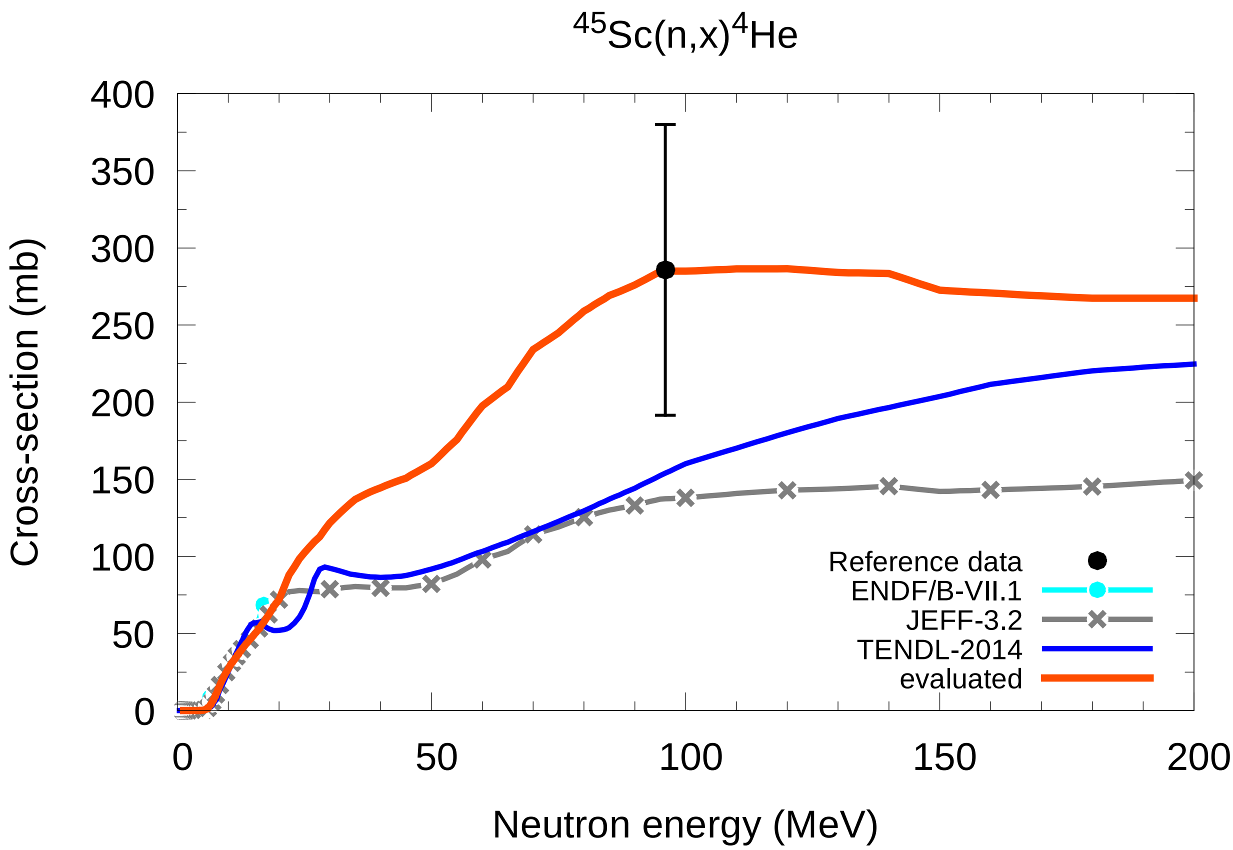
$^{44}Ca(n,x)^{4}He$
Cross-section (mb)
Neutron energy (MeV)
350
300
250
200
150
100
50
0
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated

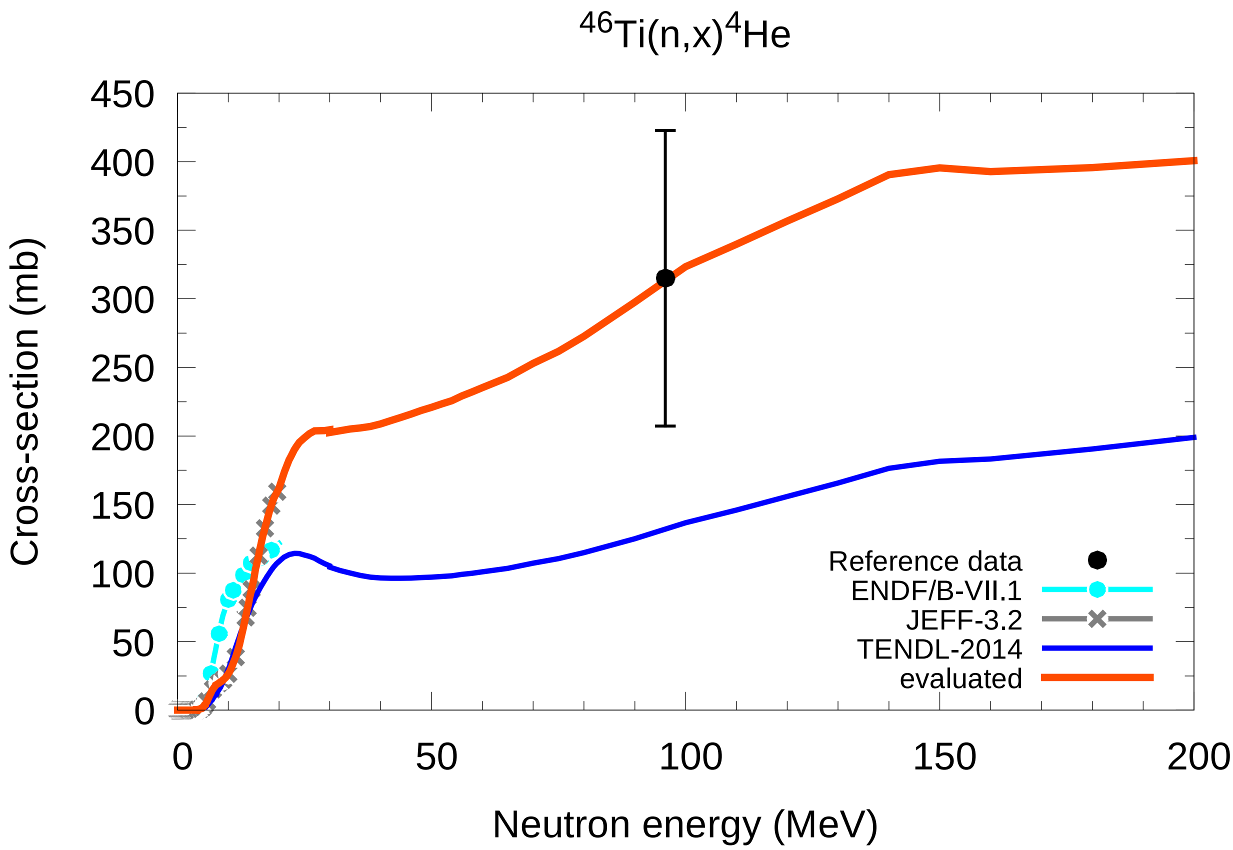


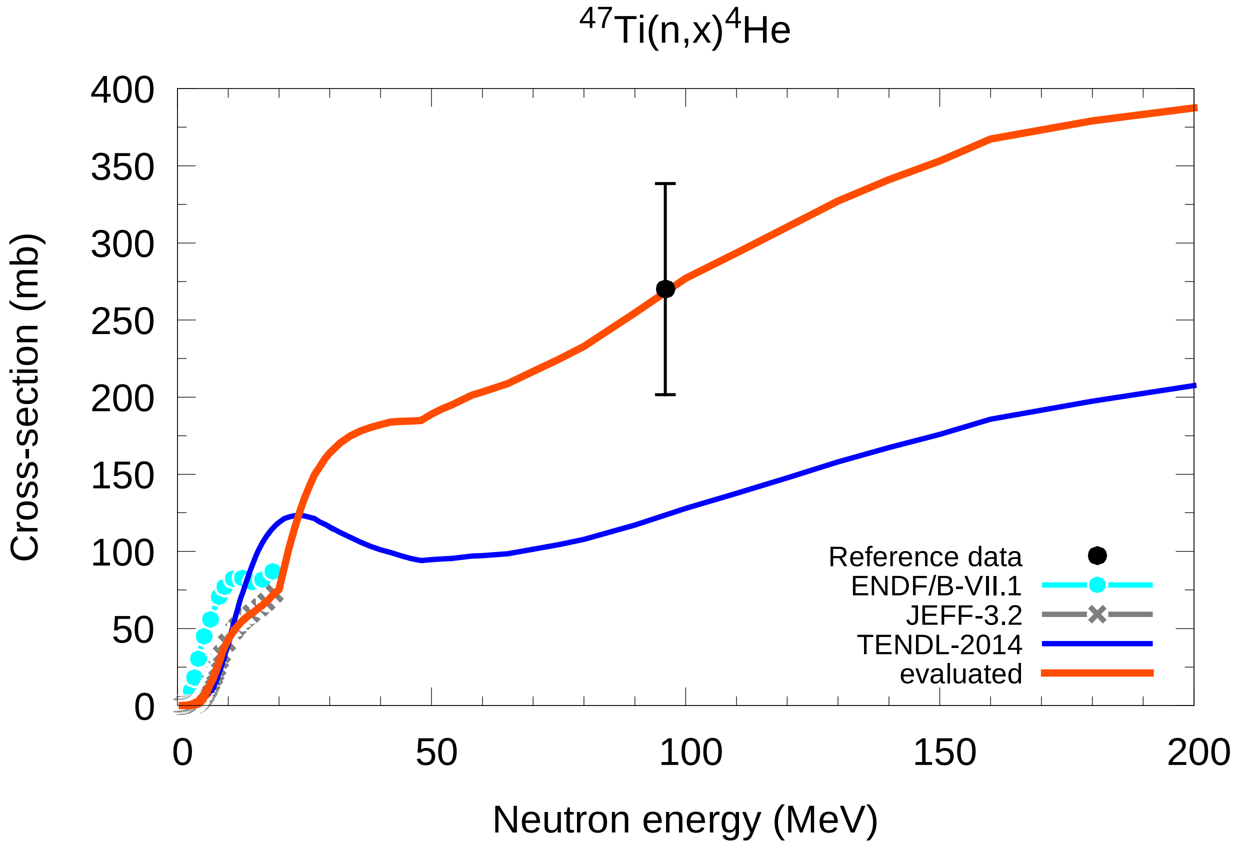
$^{46}Ca(n,x)^{4}He$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
20
40
60
80
100
120
140
160
180
0
50
100
150
200



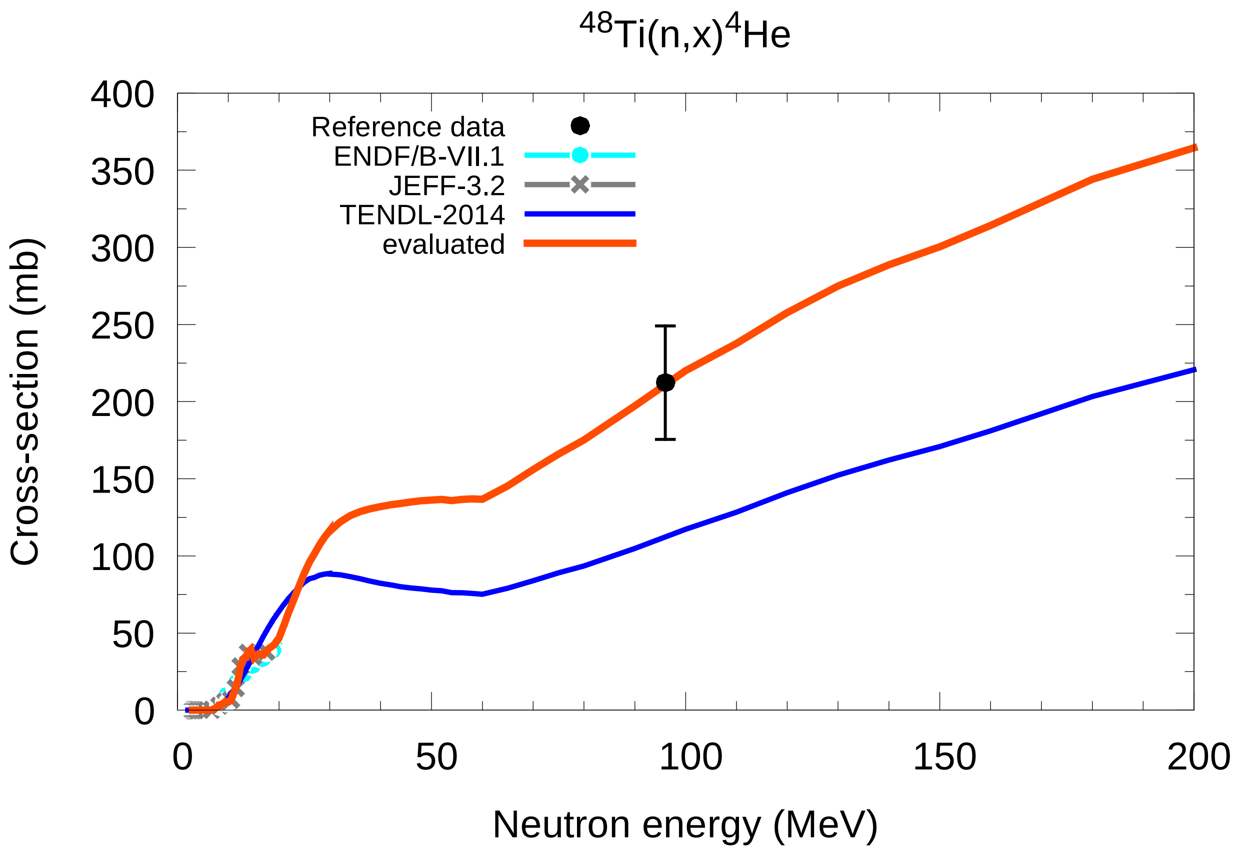
$^{48}Ca(n,x)^{4}He$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
20
40
60
80
100
120
140
0
50
100
150
200


$^{45}Sc(n,x)^{4}He$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300
350
400

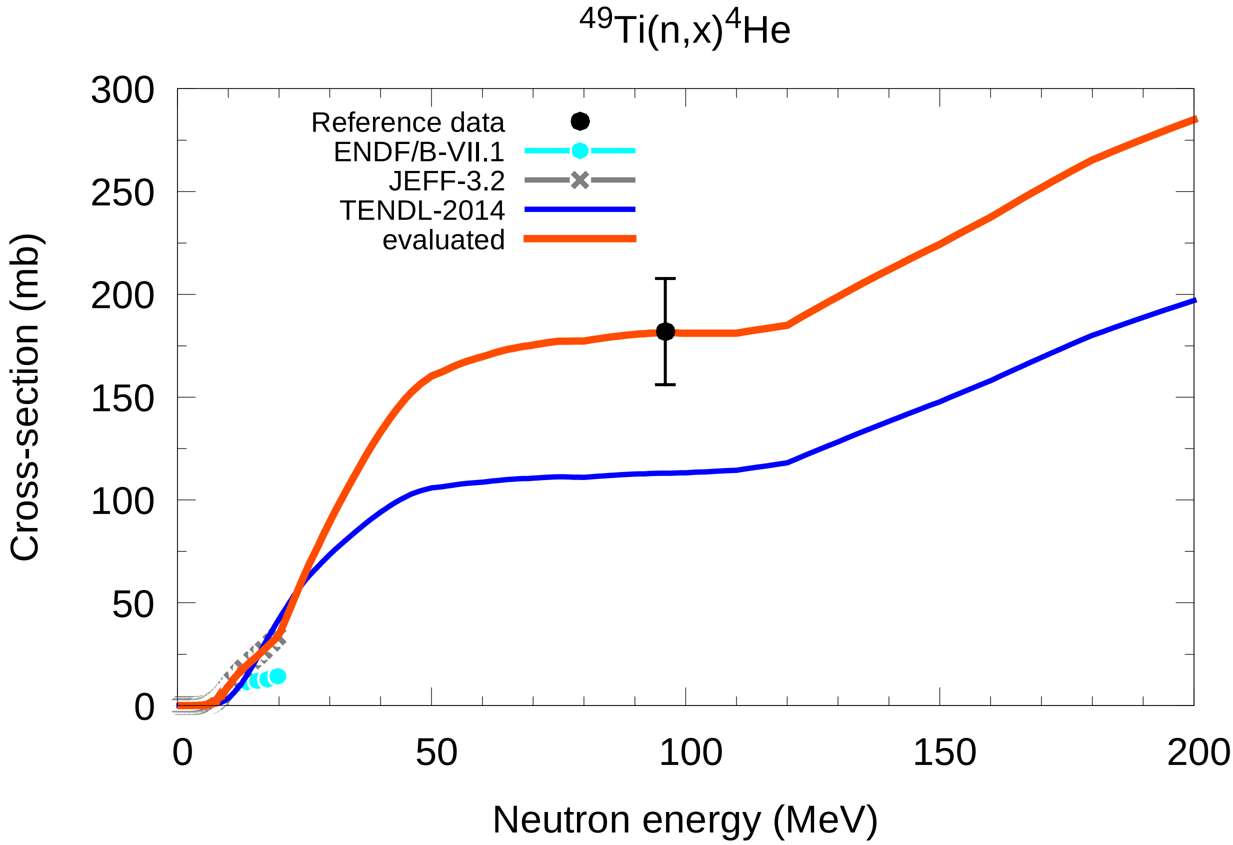

$^{46}Ti(n,x)^{4}He$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300
350
400
450



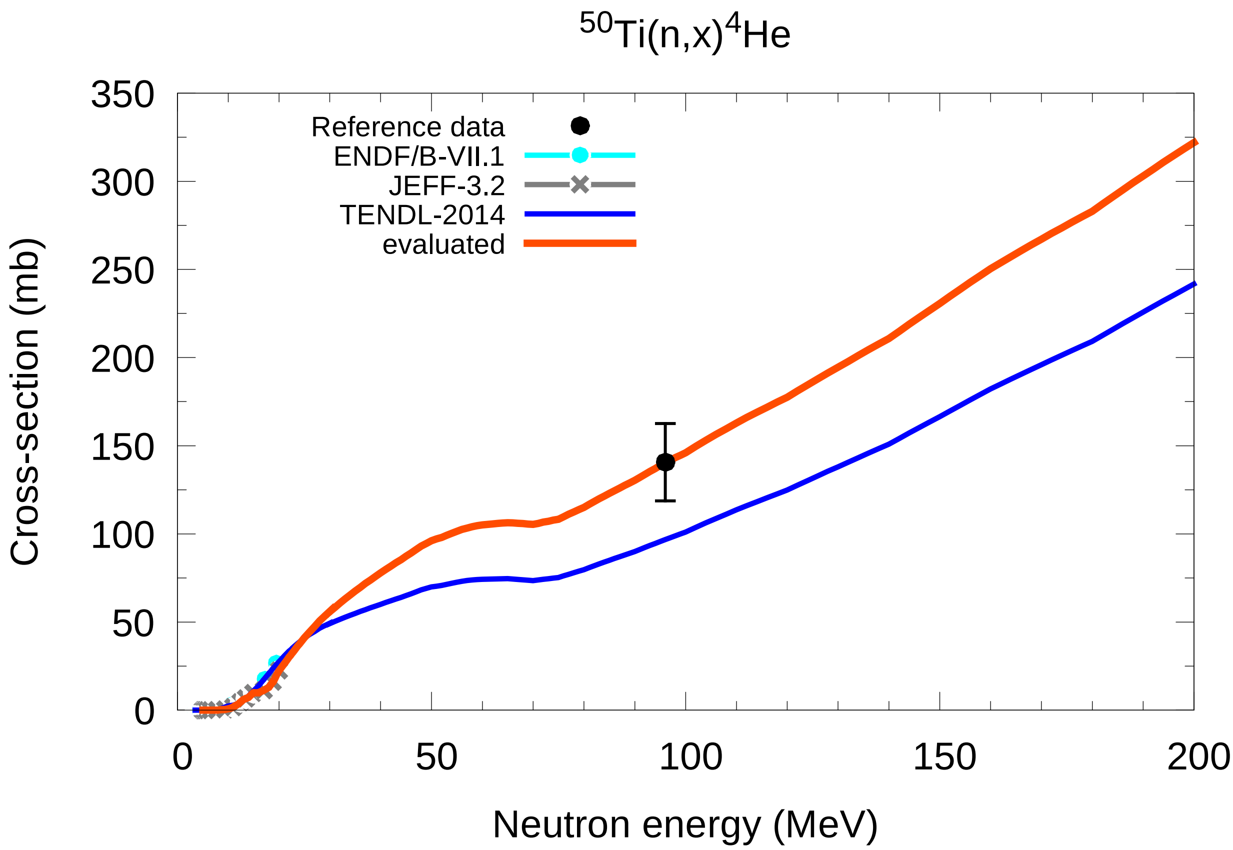
^{47}Ti(n,x)^{4}He
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



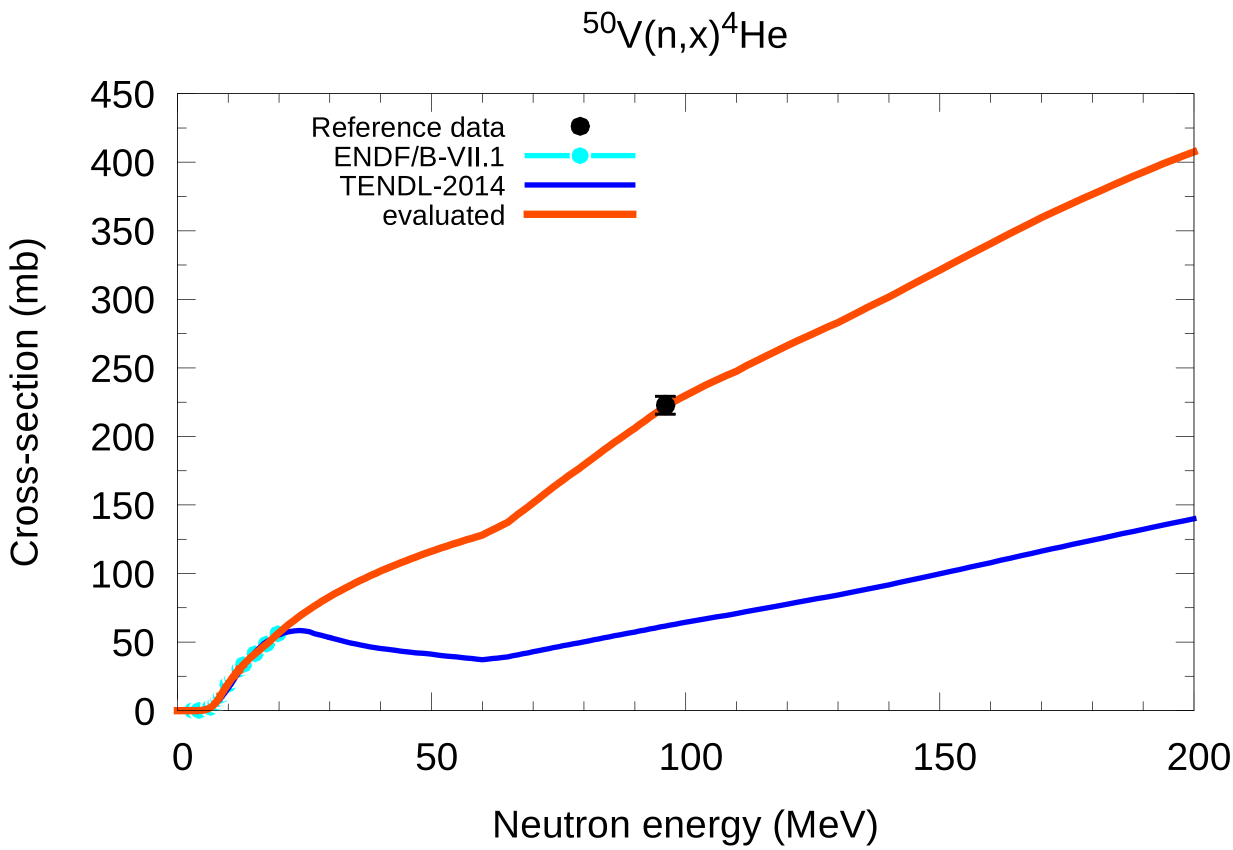
^{48}Ti(n,x)^{4}He
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



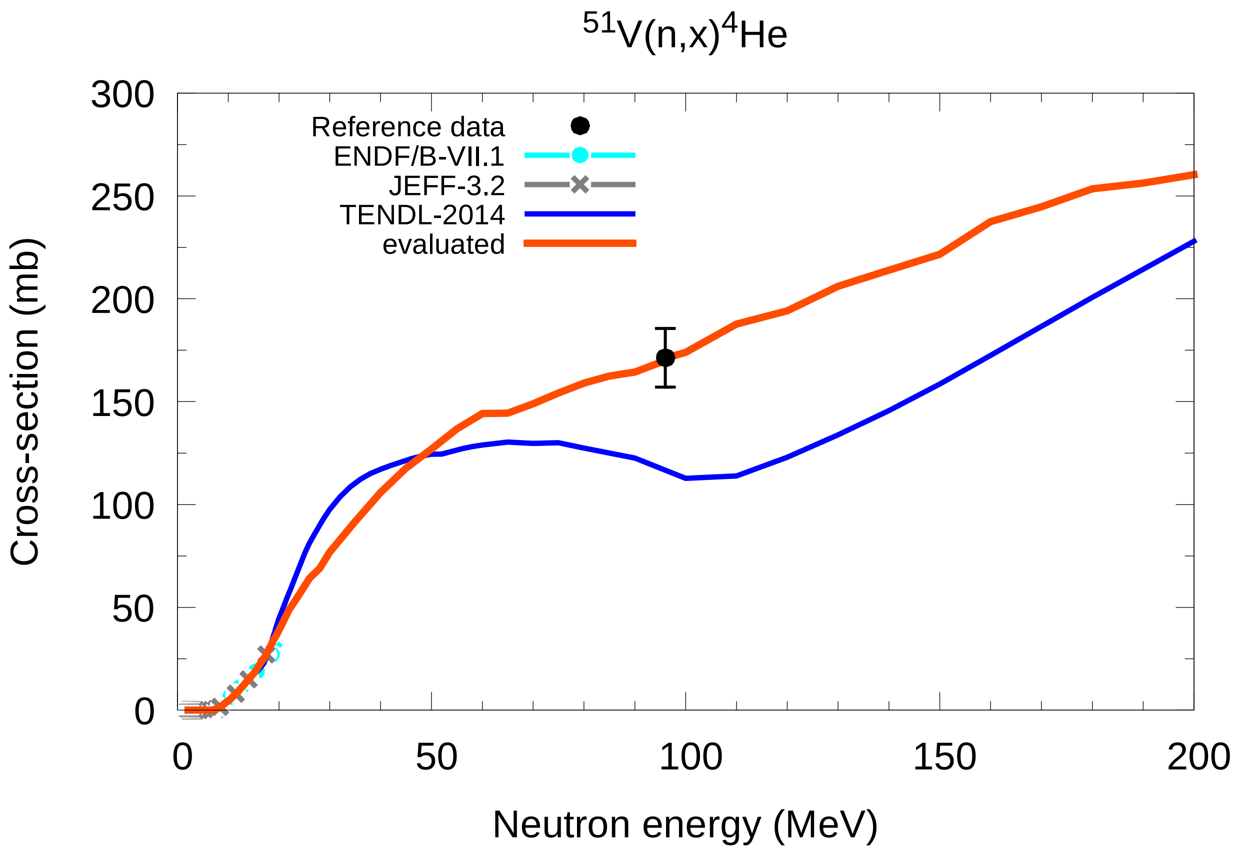
$^{49}Ti(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



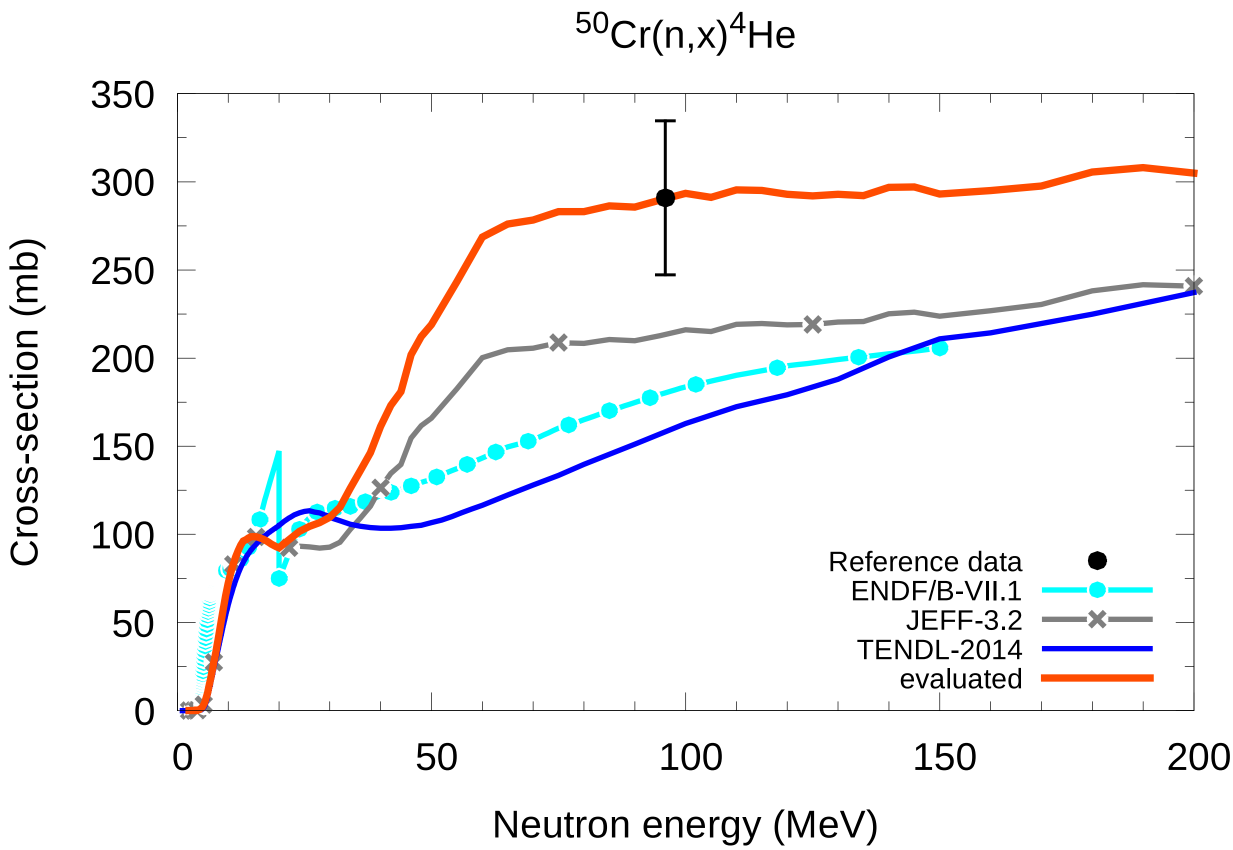
$^{50}Ti(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350

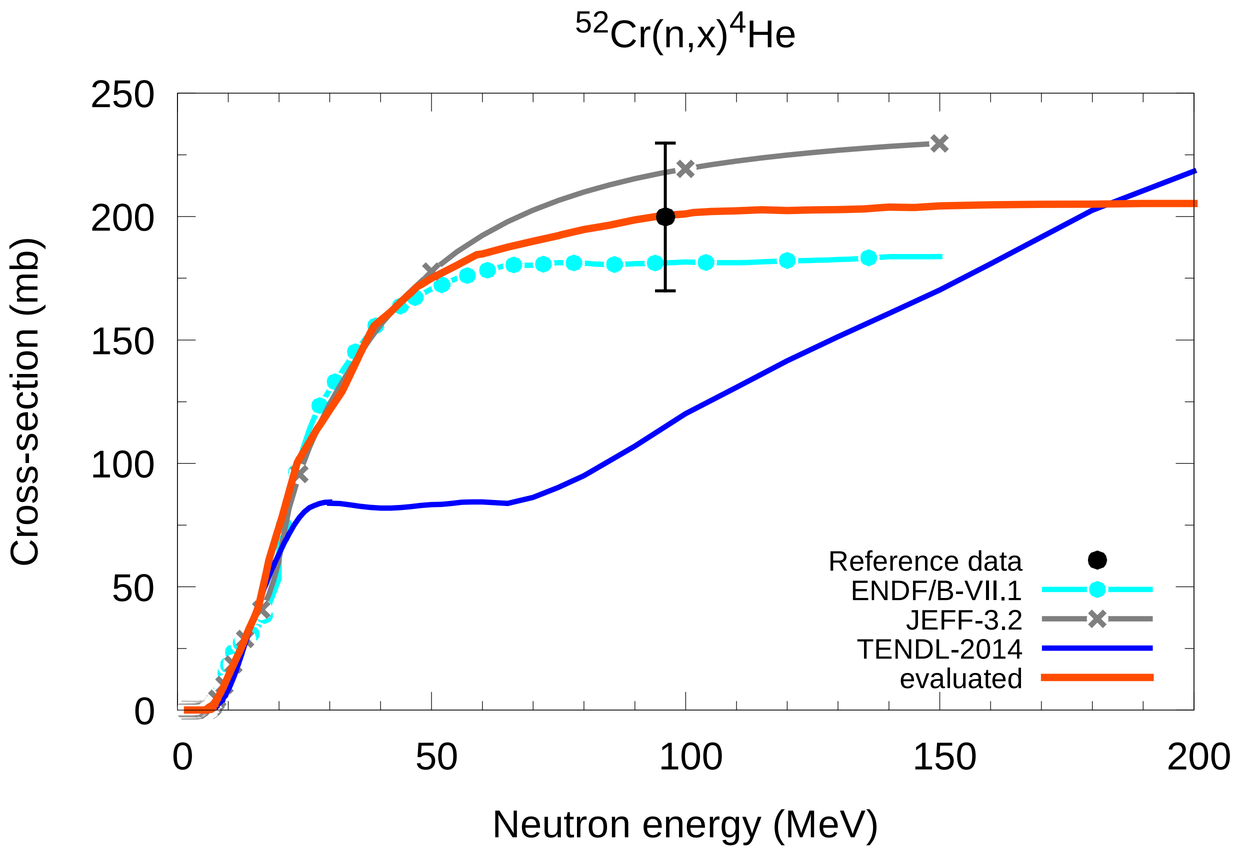


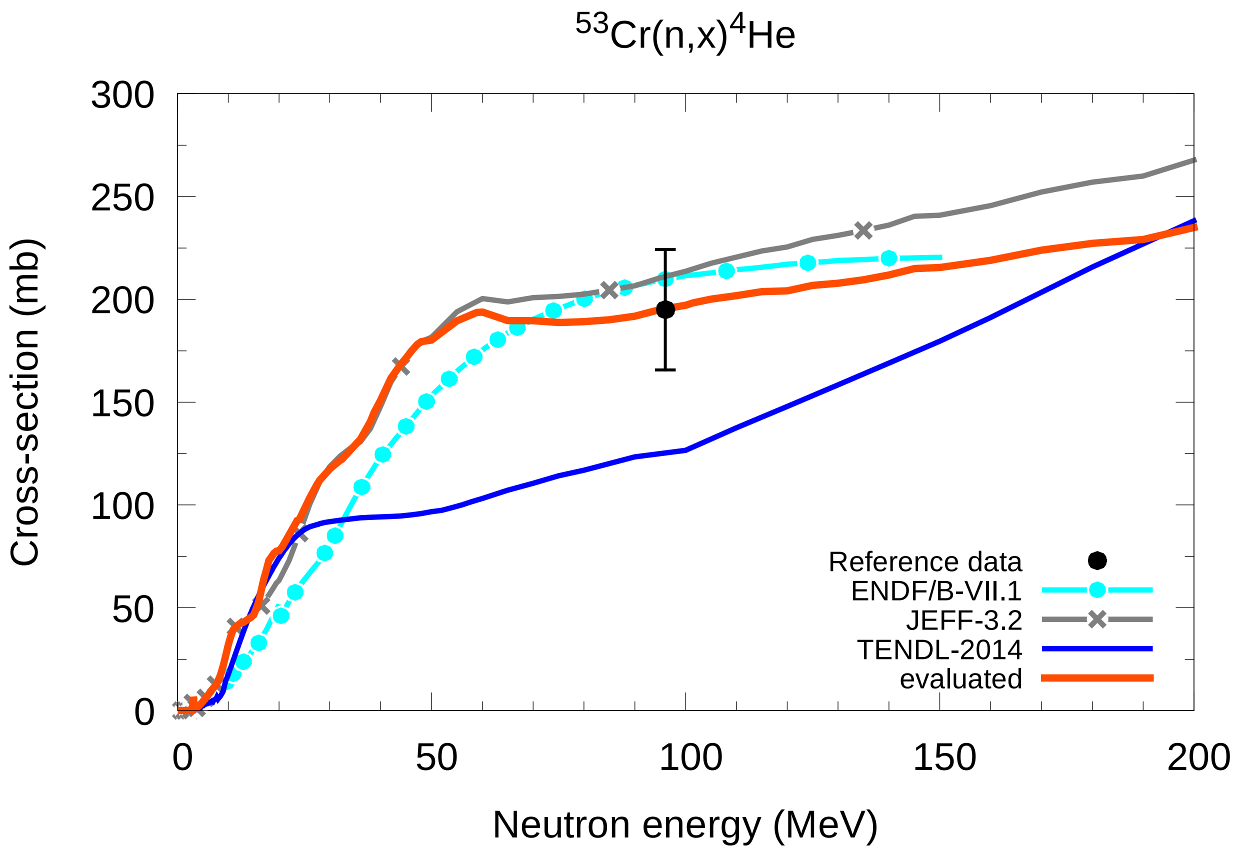
50V(n,x)4He
Reference data
ENDF/B-VII.1
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
0
50
100
150
200



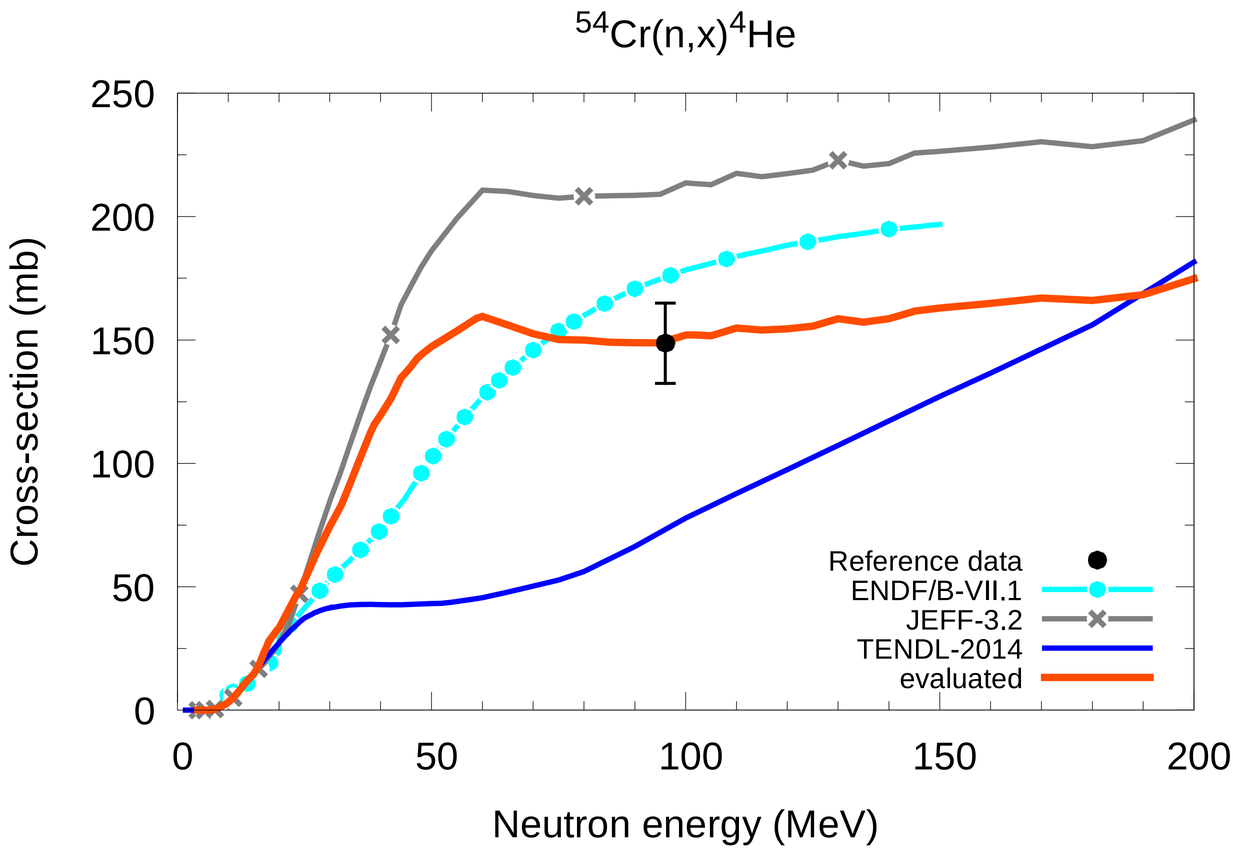
51V(n,x)4He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
0
50
100
150
200


$^{50}Cr(n,x)^{4}He$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300
350

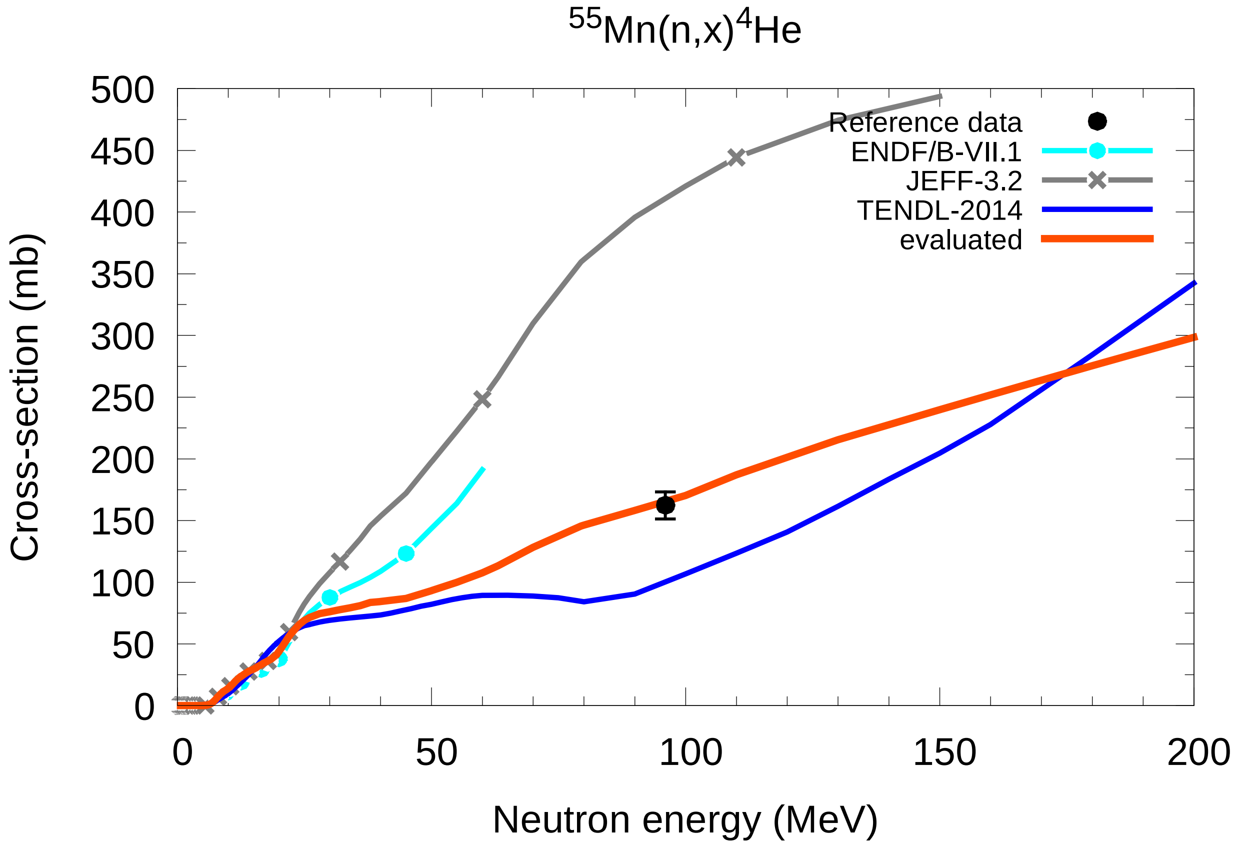

$^{52}Cr(n,x)^{4}He$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250



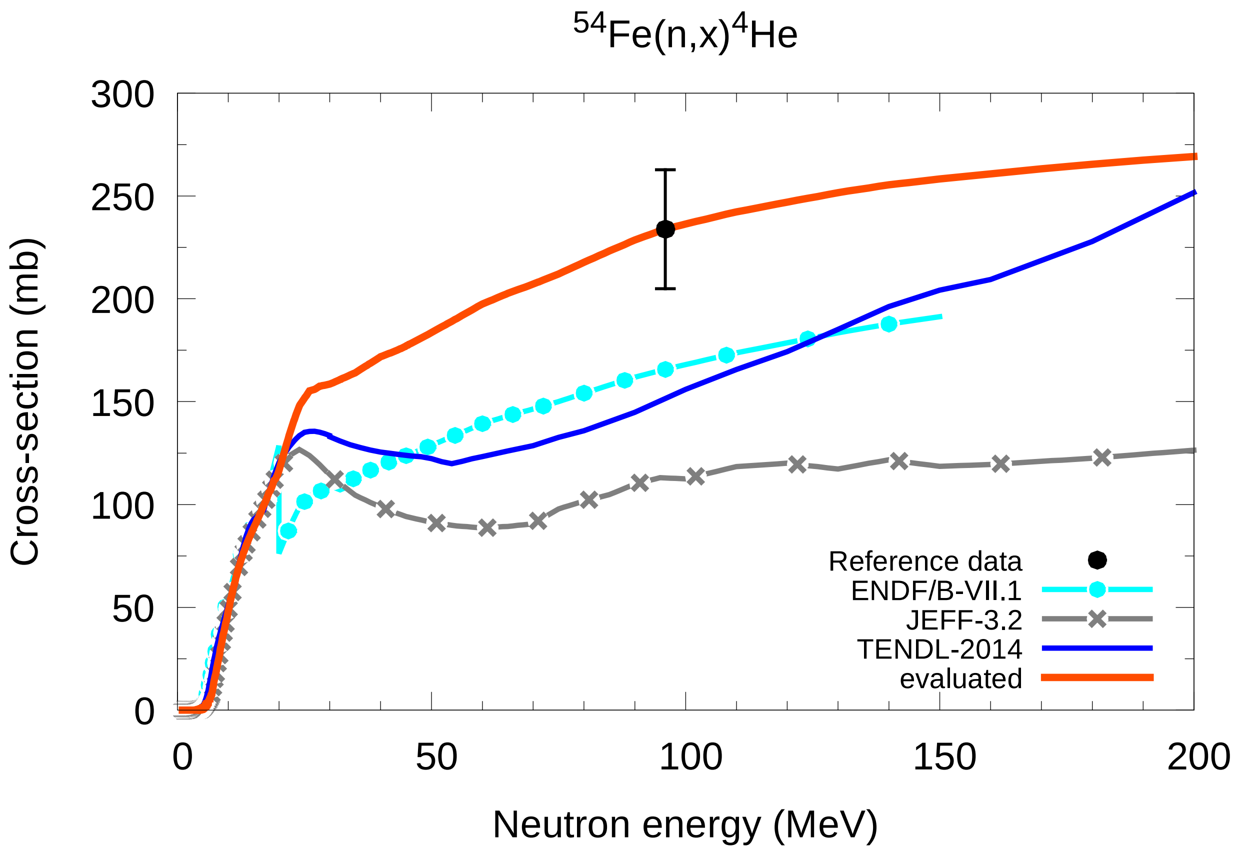
$^{53}Cr(n,x)^4He$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



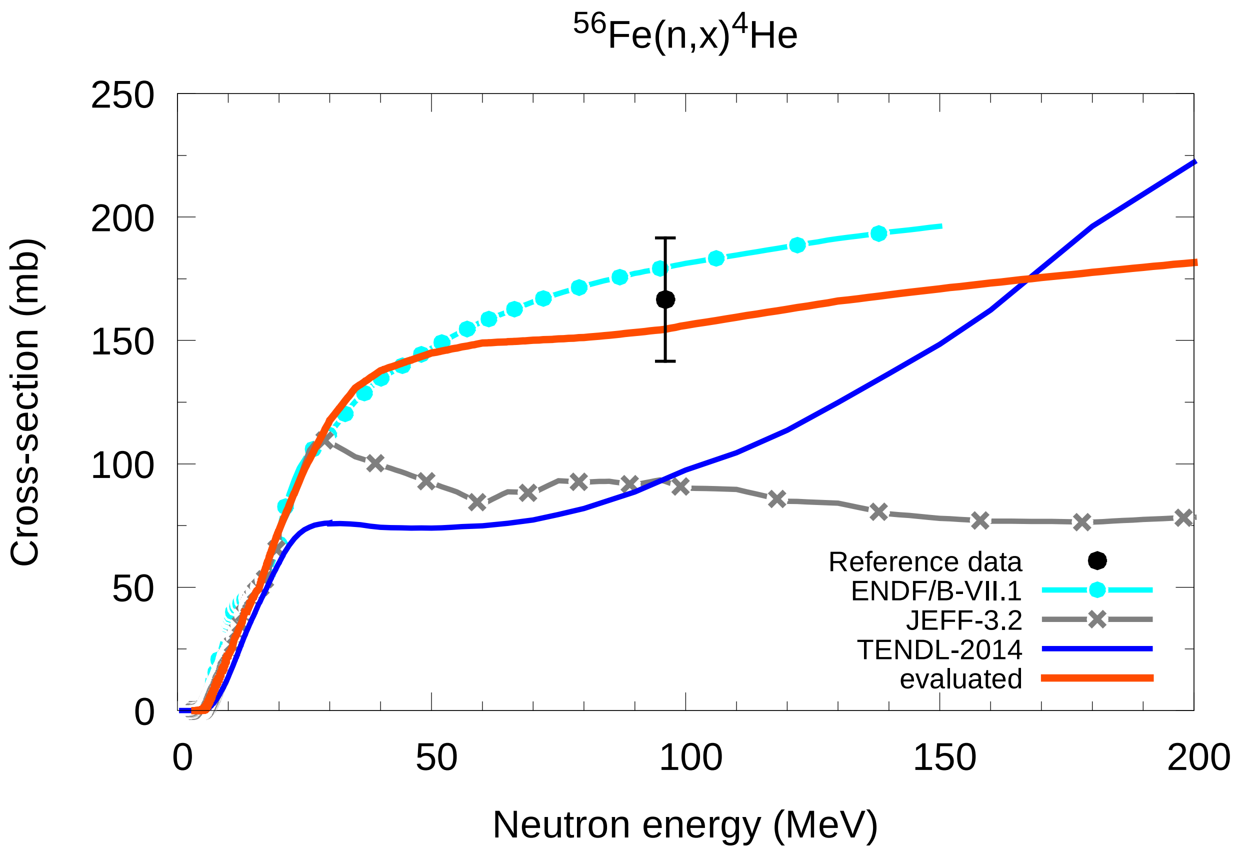
$^{54}Cr(n,x)^4He$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



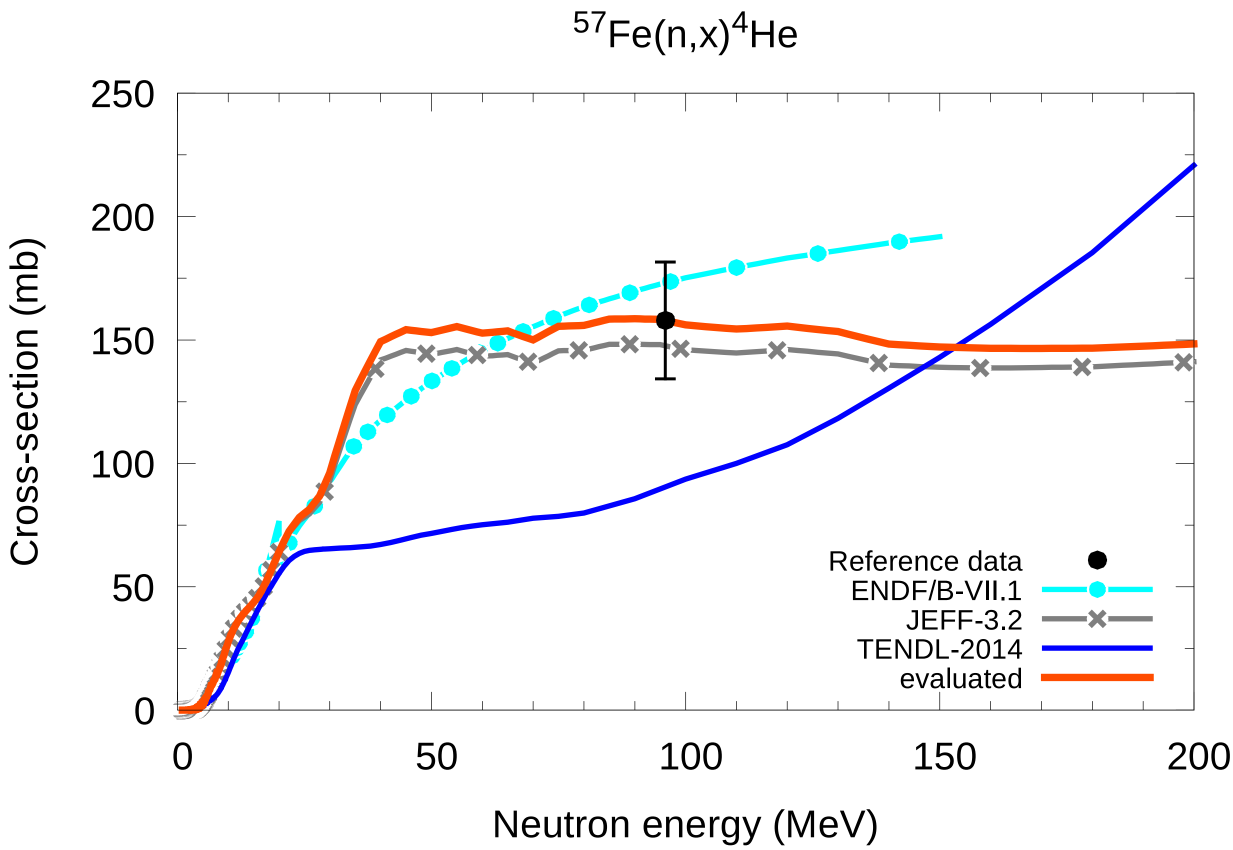
55Mn(n,x)4He
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300
350
400
450
500



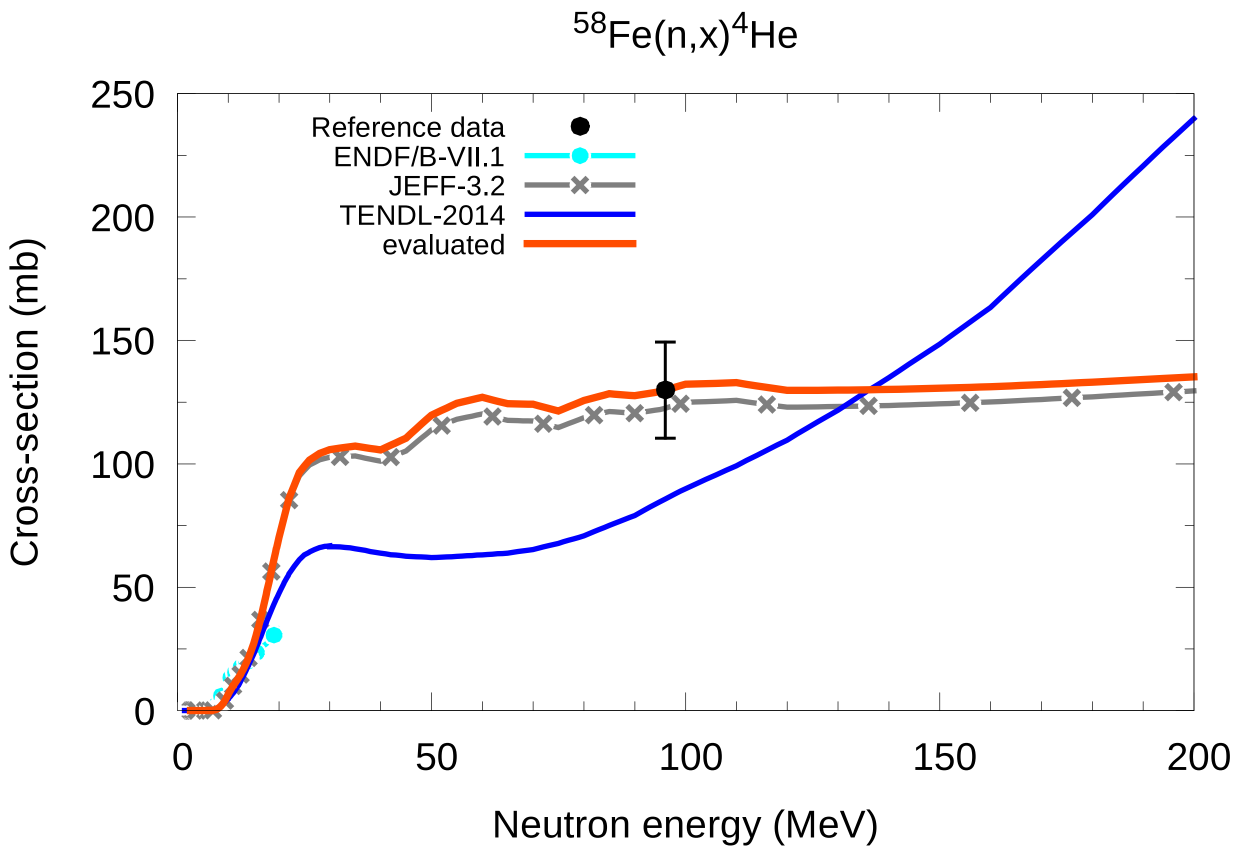
54Fe(n,x)4He
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300

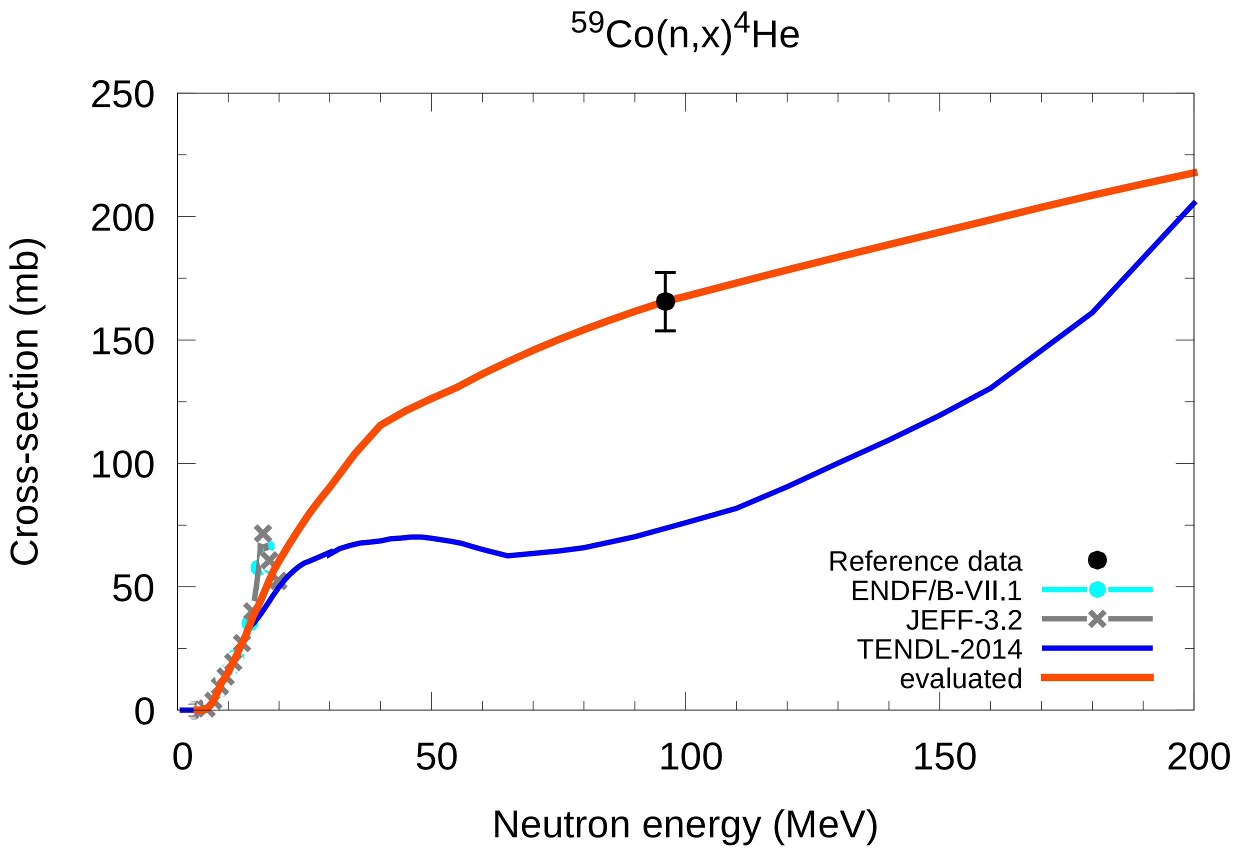


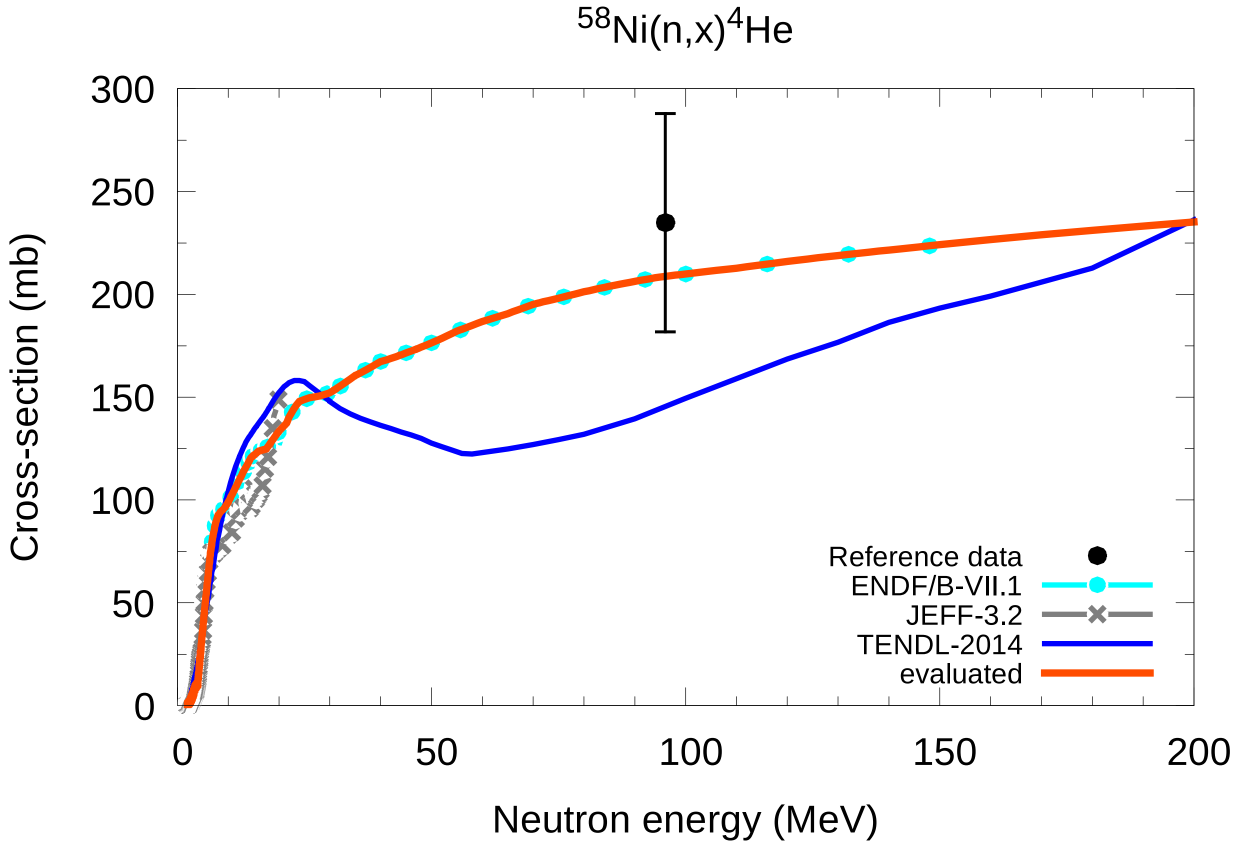
56Fe(n,x)4He
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated

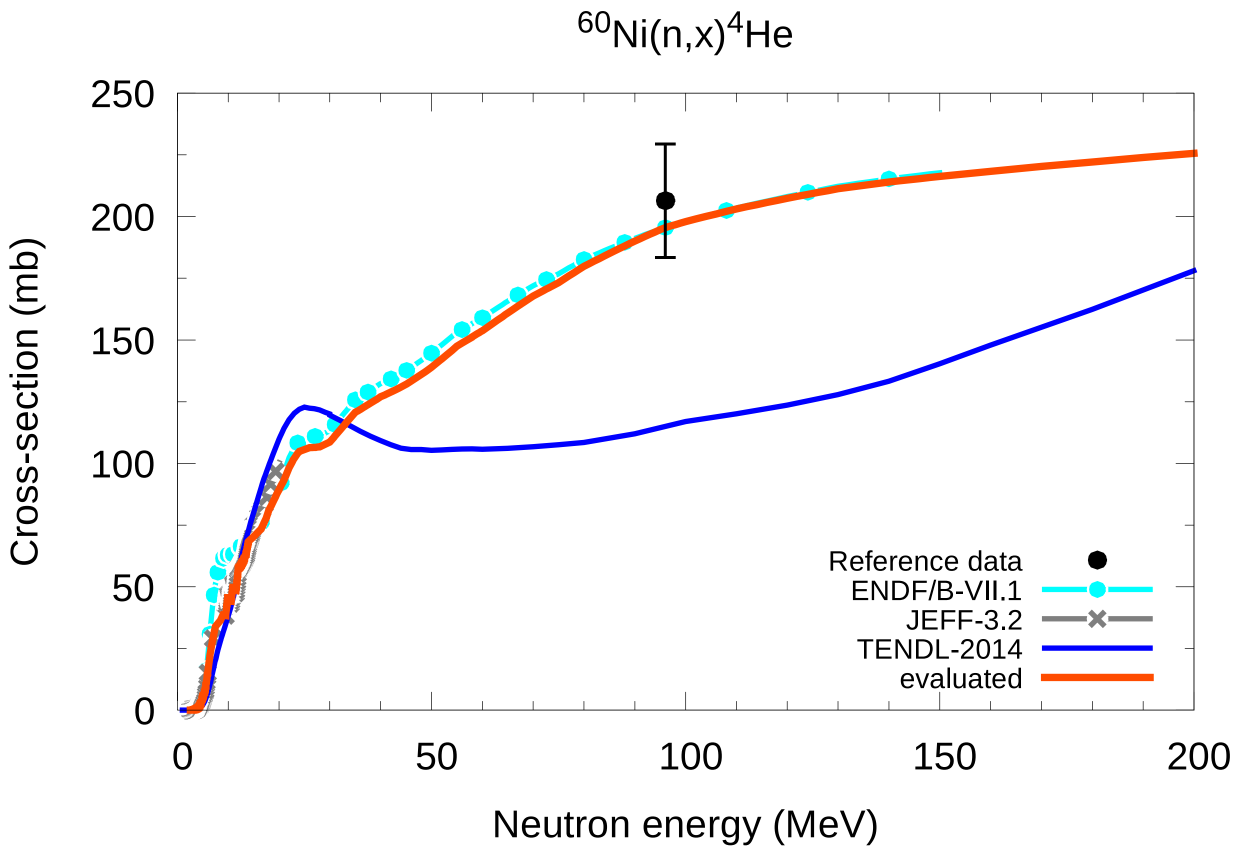


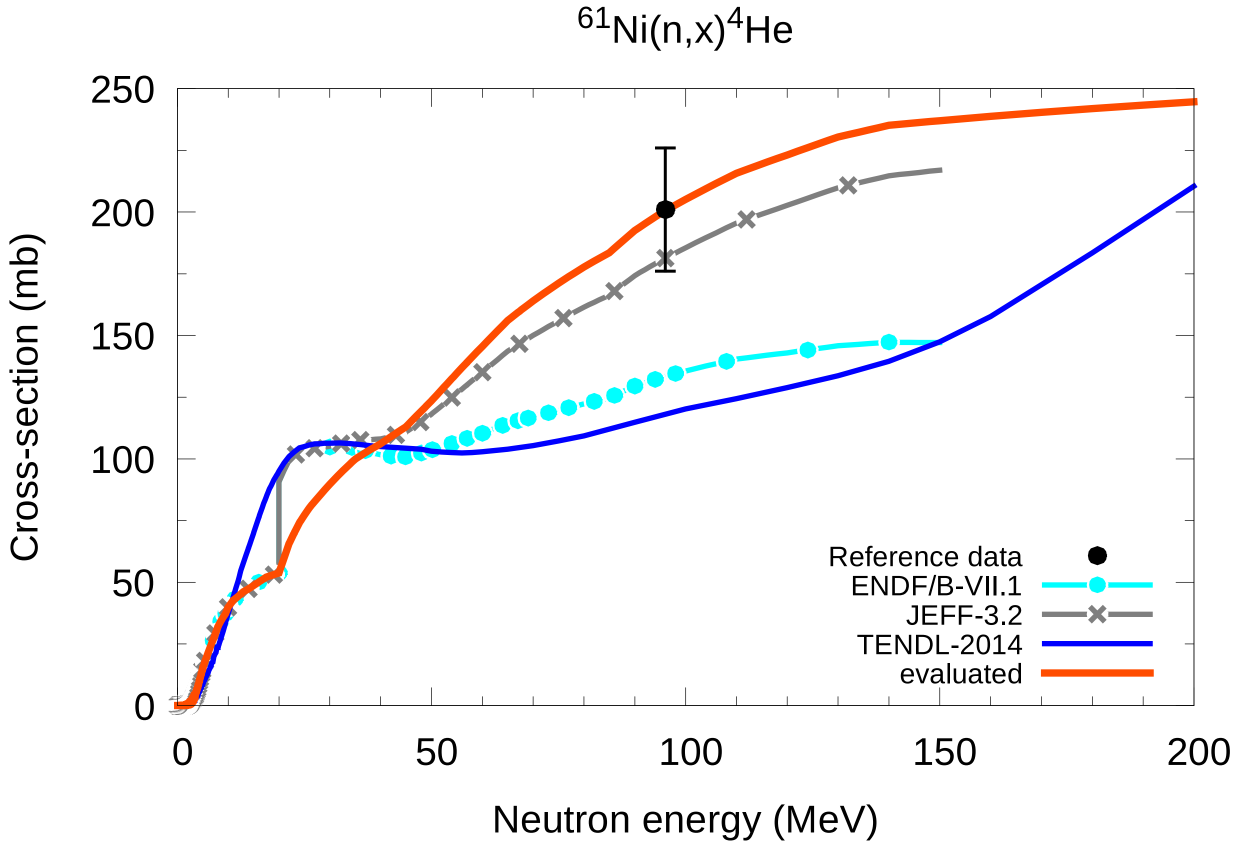
57Fe(n,x)4He
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated


$^{58}Fe(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250

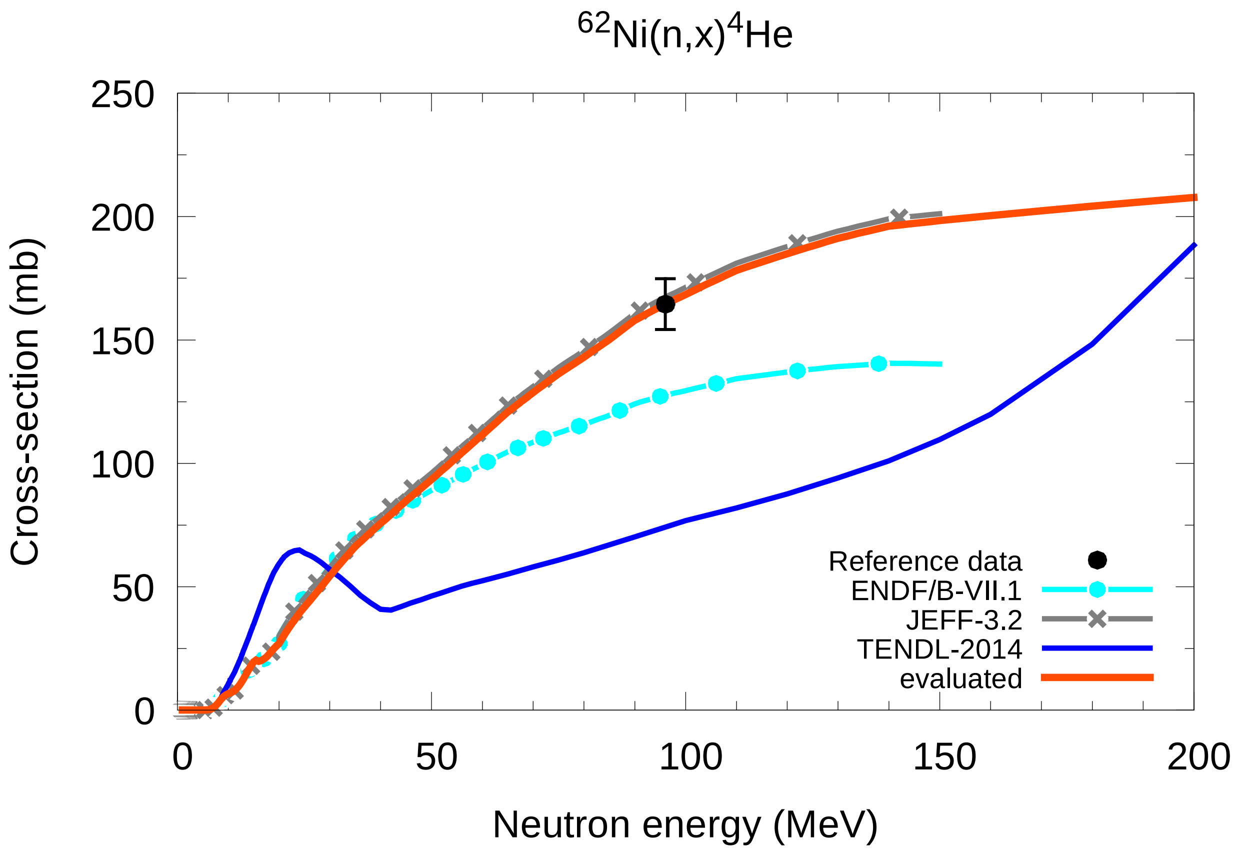

$^{59}Co(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250


58Ni(n,x)4He
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated

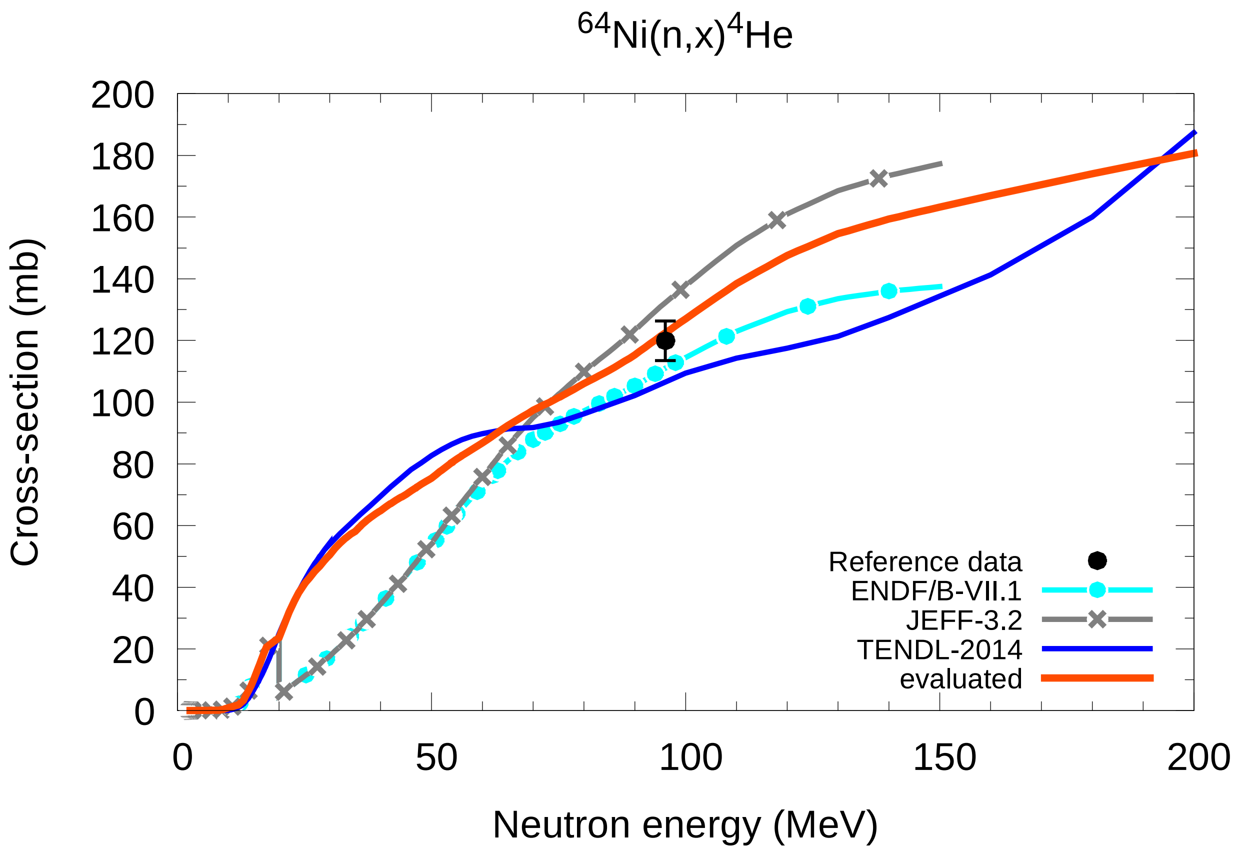

60Ni(n,x)4He
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



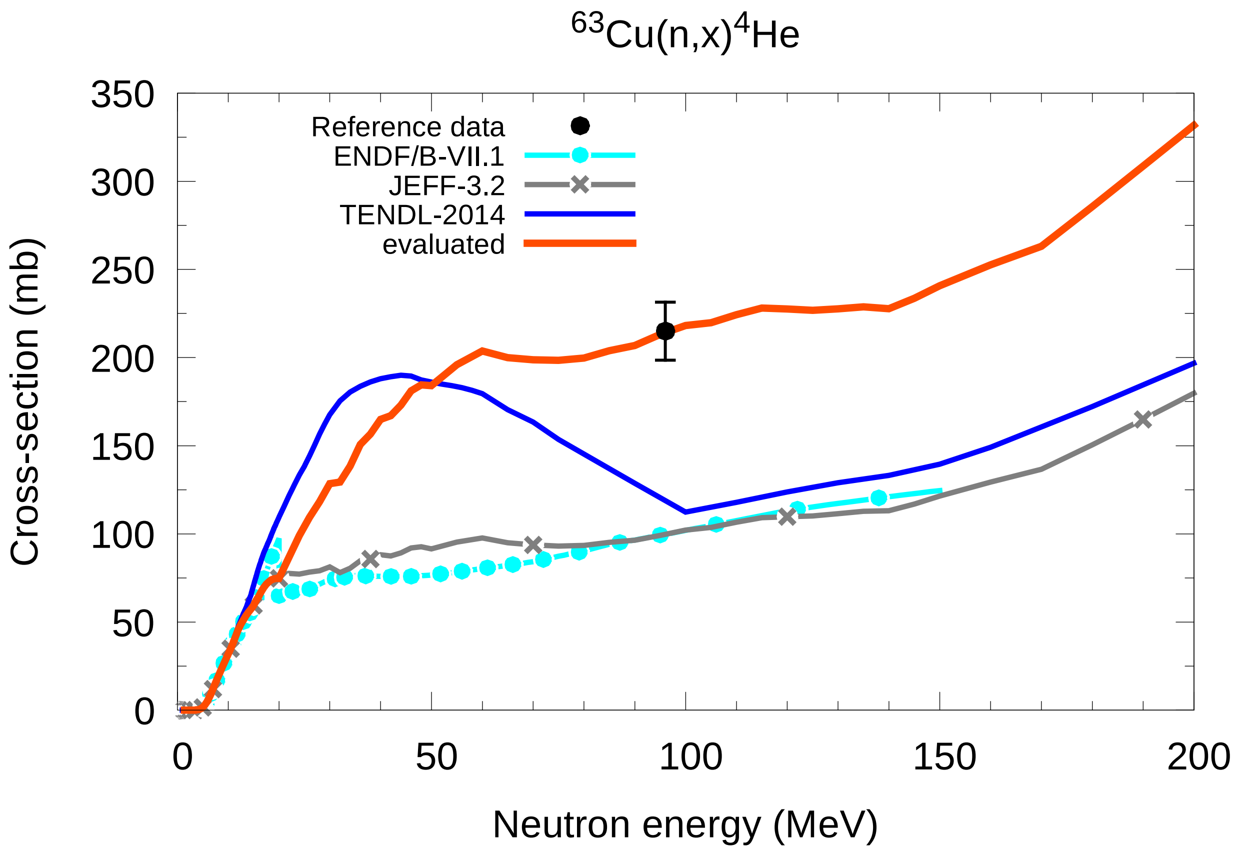
$^{61}Ni(n,x)^{4}He$
Cross-section (mb)
250
200
150
100
50
0
0
50
100
150
200
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



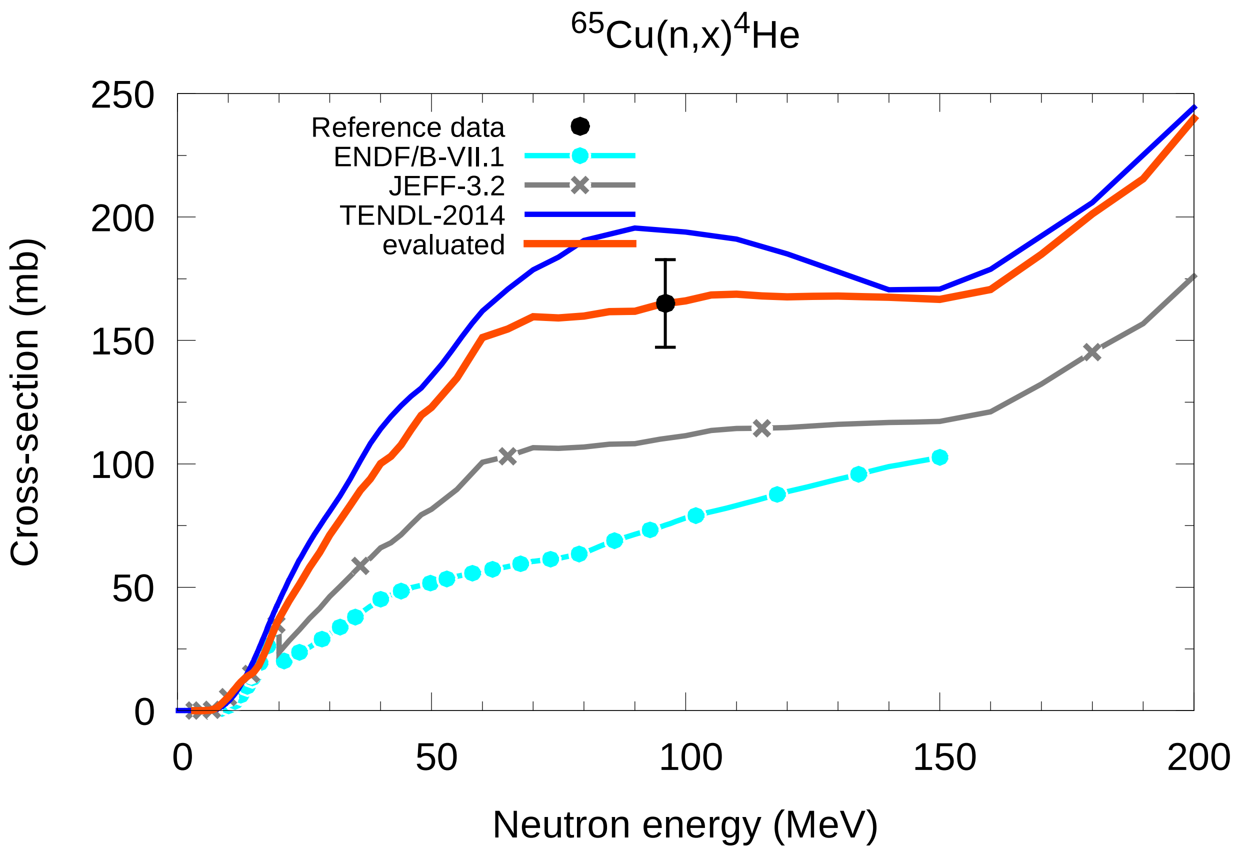
$^{62}Ni(n,x)^{4}He$
Cross-section (mb)
250
200
150
100
50
0
0
50
100
150
200
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



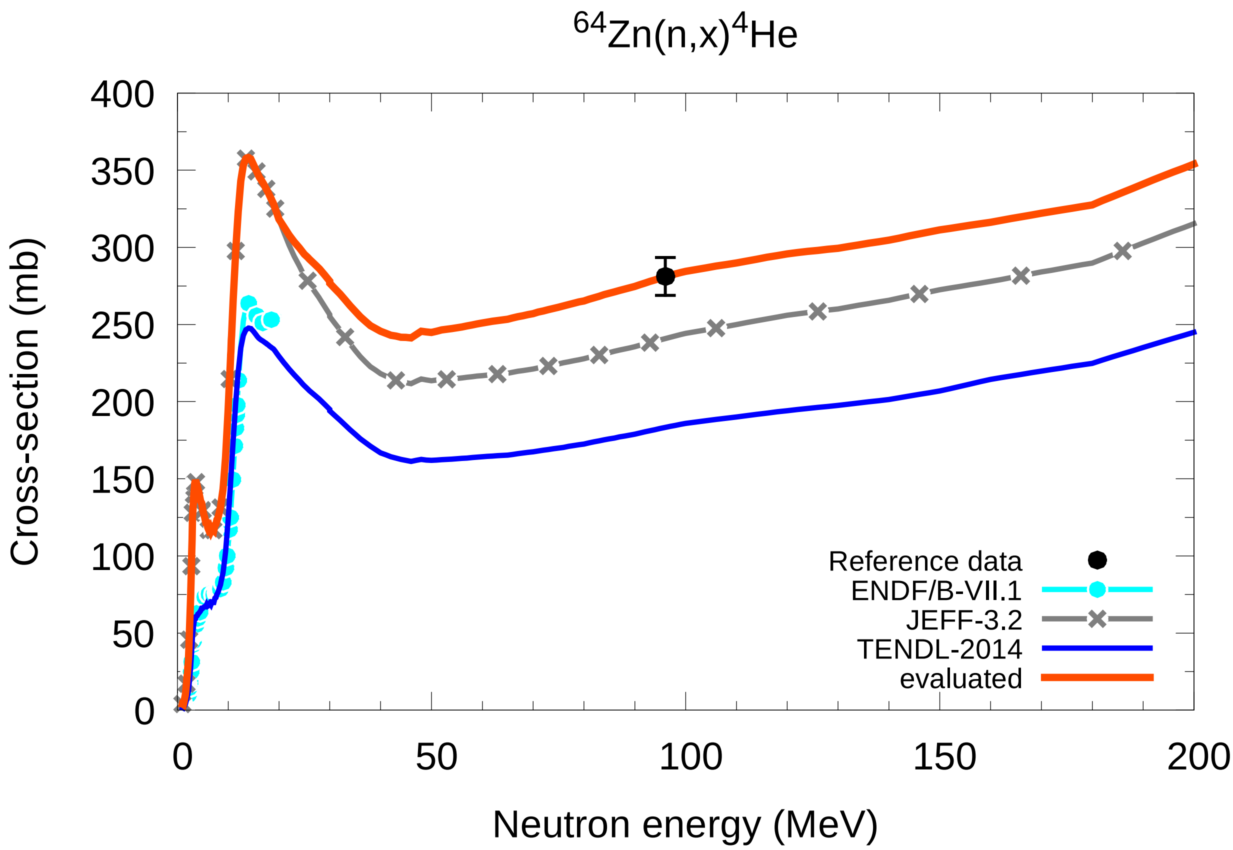
^{64}Ni(n,x)^{4}He
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



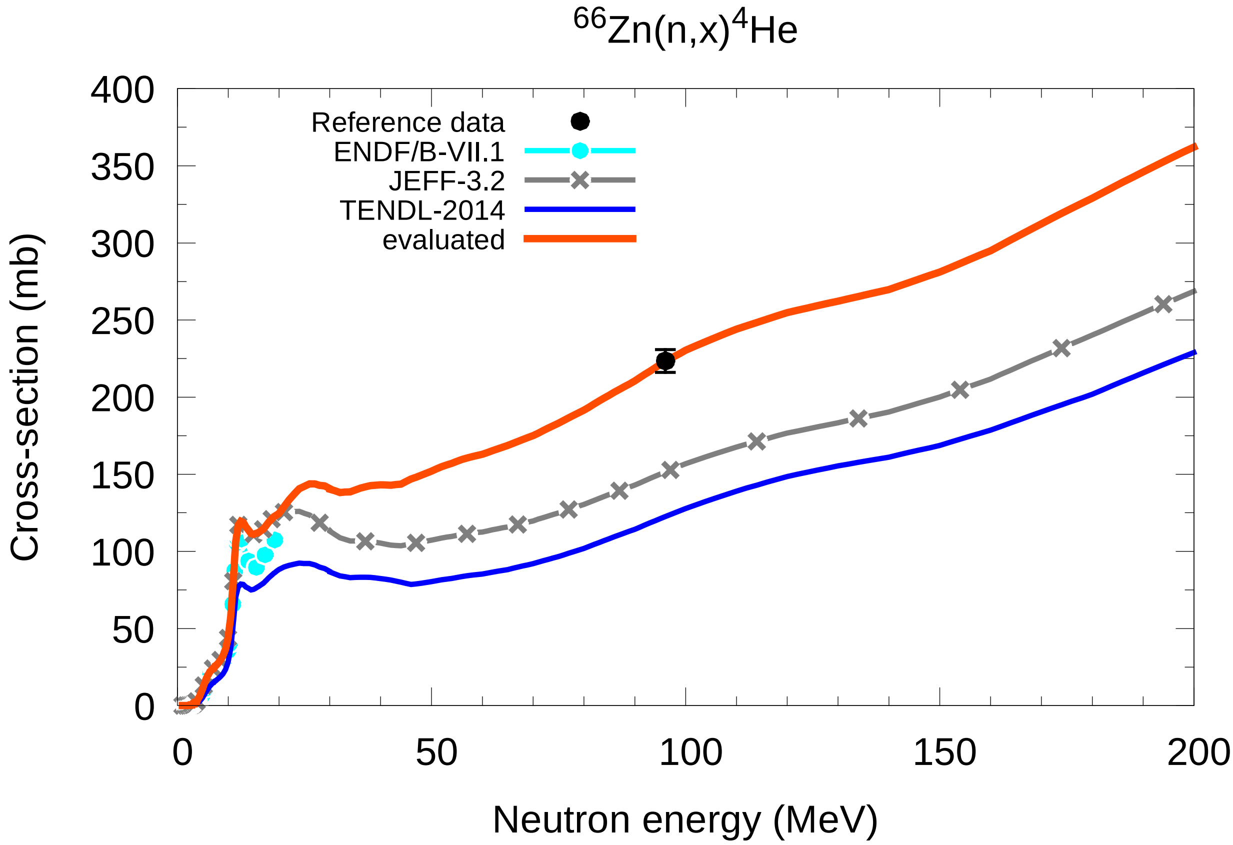
^{63}Cu(n,x)^{4}He
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
0
50
100
150
200
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



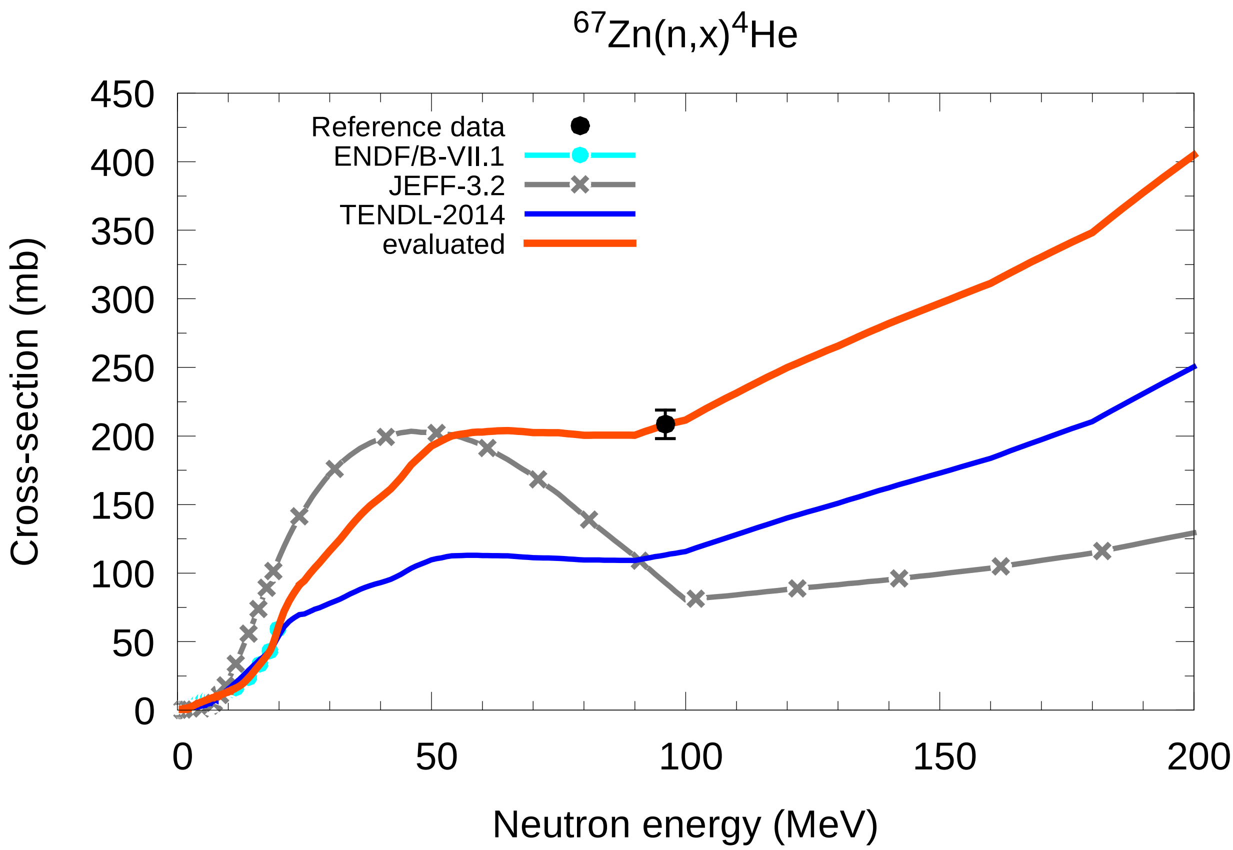
$^{65}Cu(n,x)^4He$
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



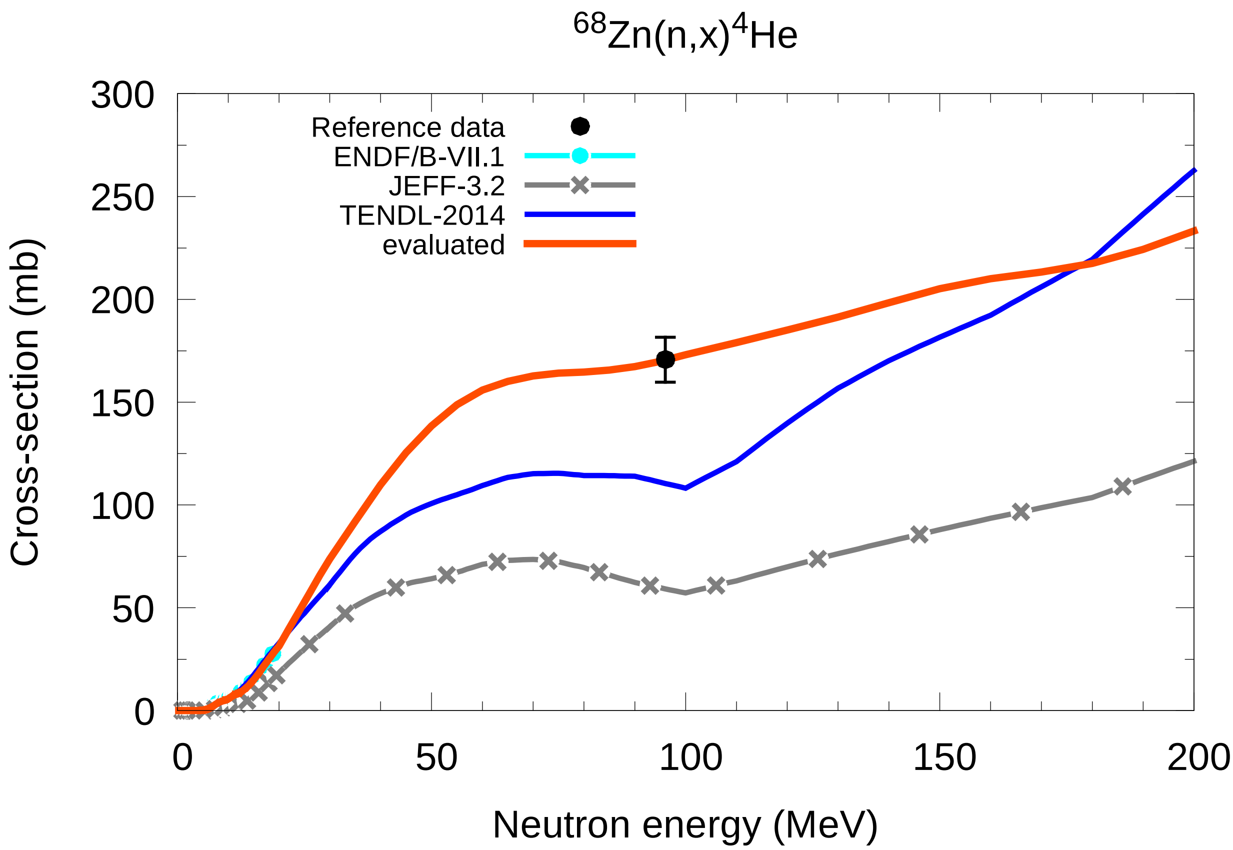
$^{64}Zn(n,x)^4He$
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



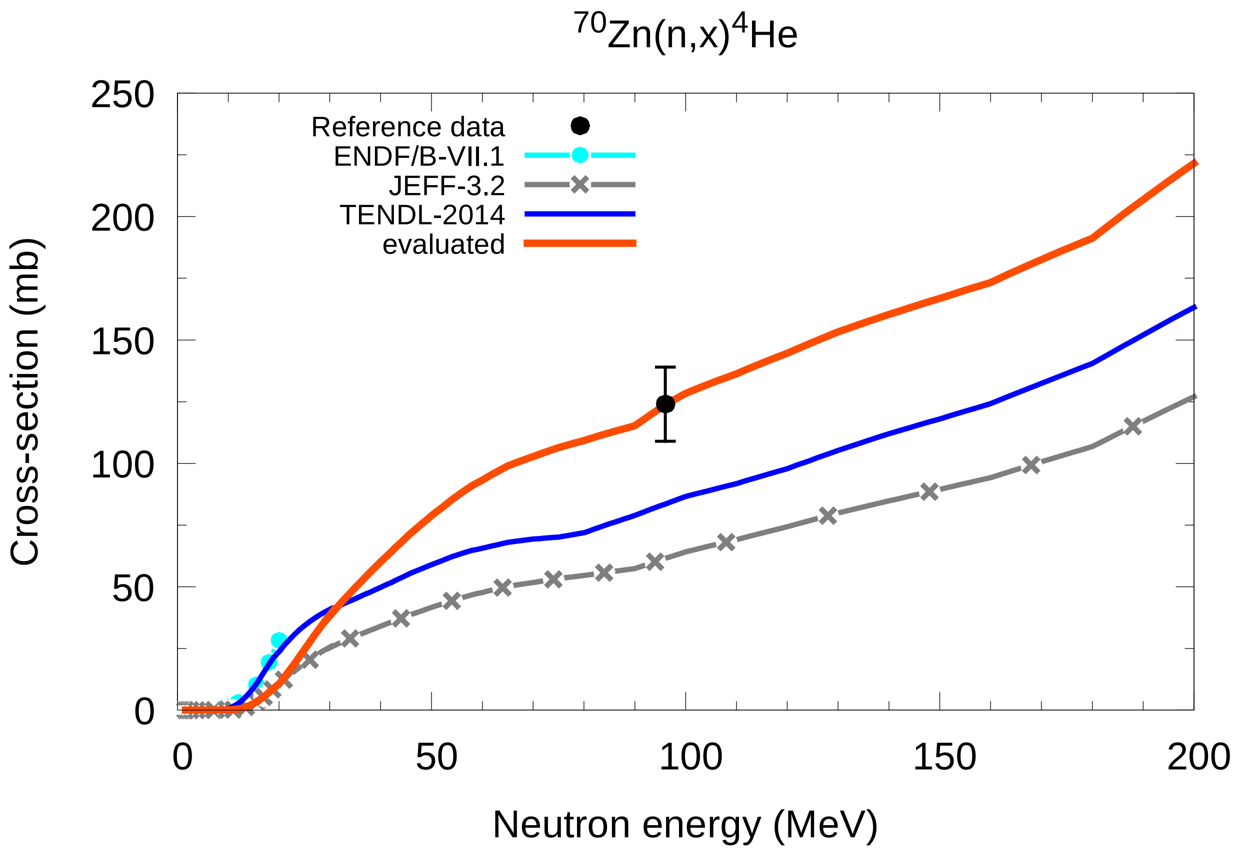
^{66}Zn(n,x)^{4}He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
0
50
100
150
200



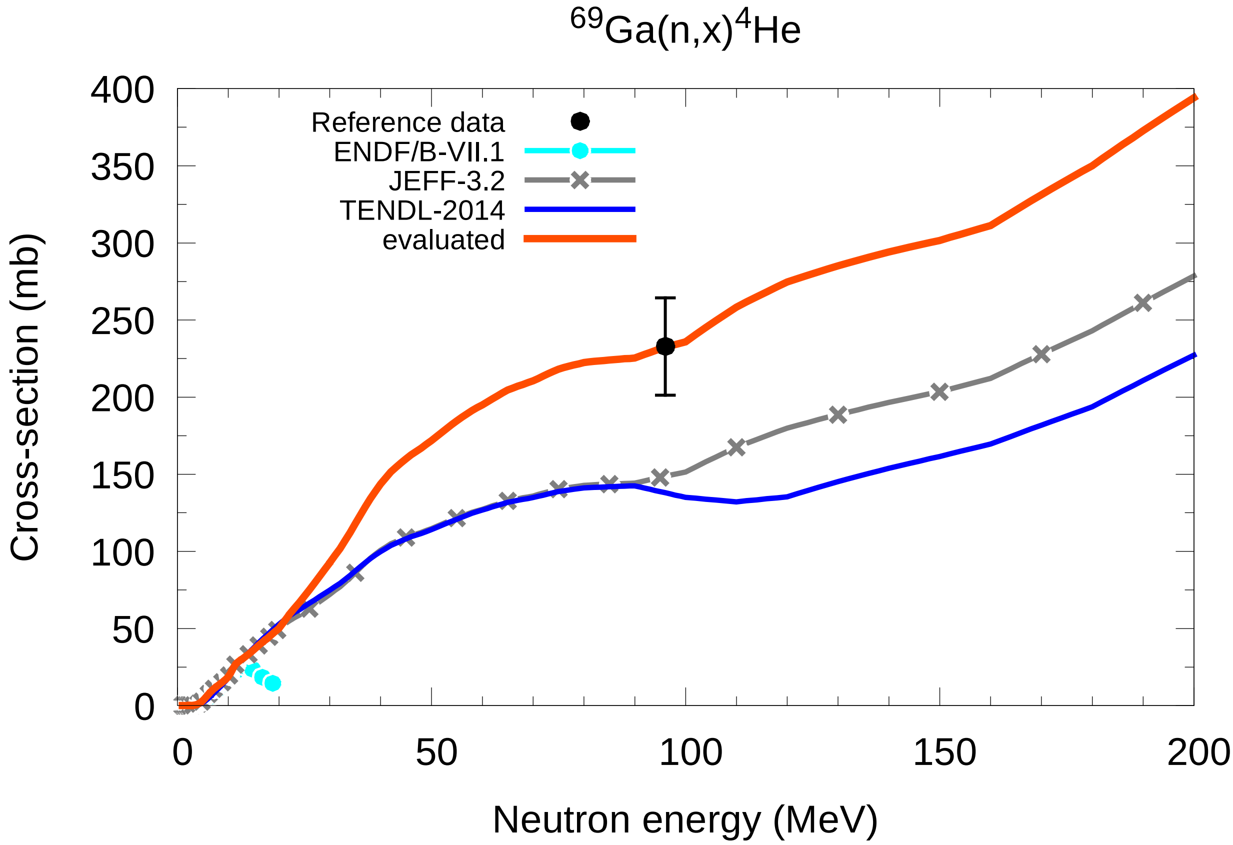
^{67}Zn(n,x)^{4}He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
0
50
100
150
200



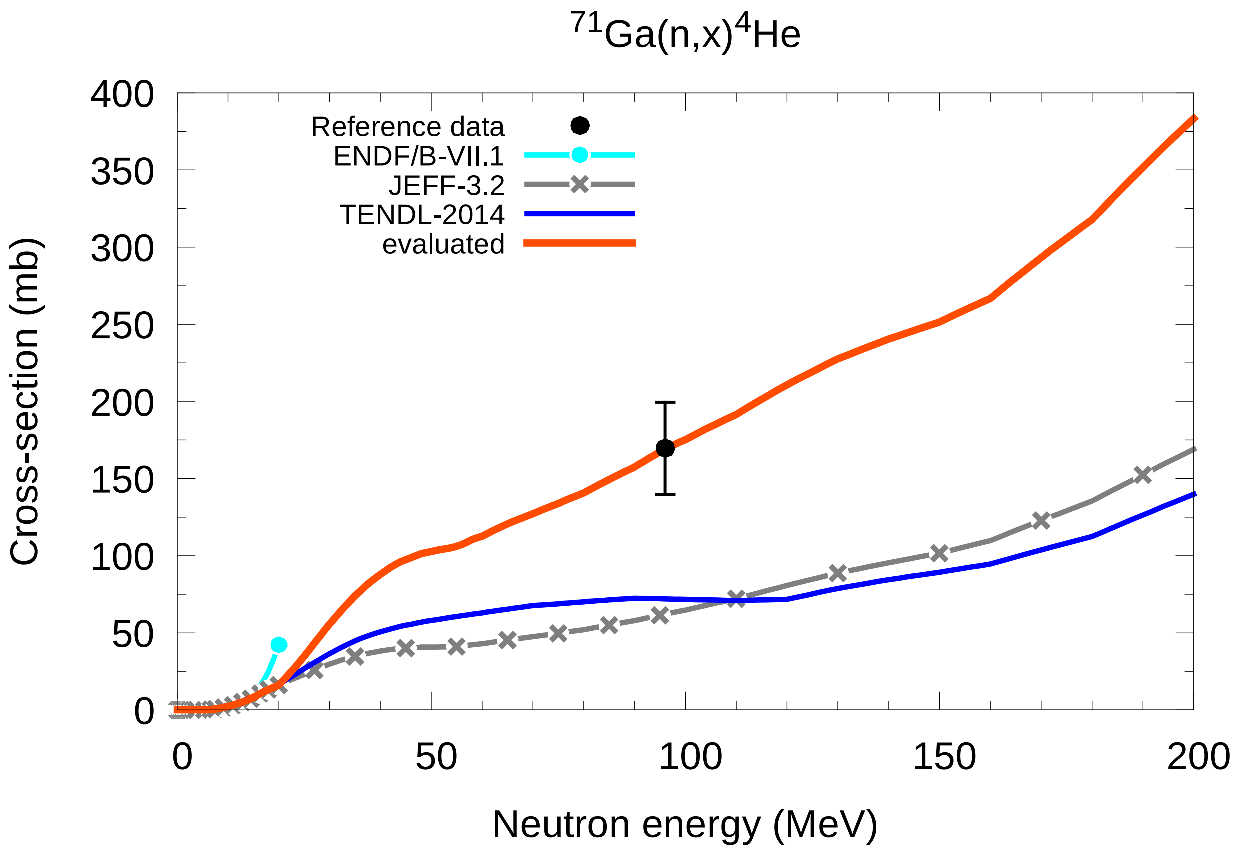
^{68}Zn(n,x)^{4}He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



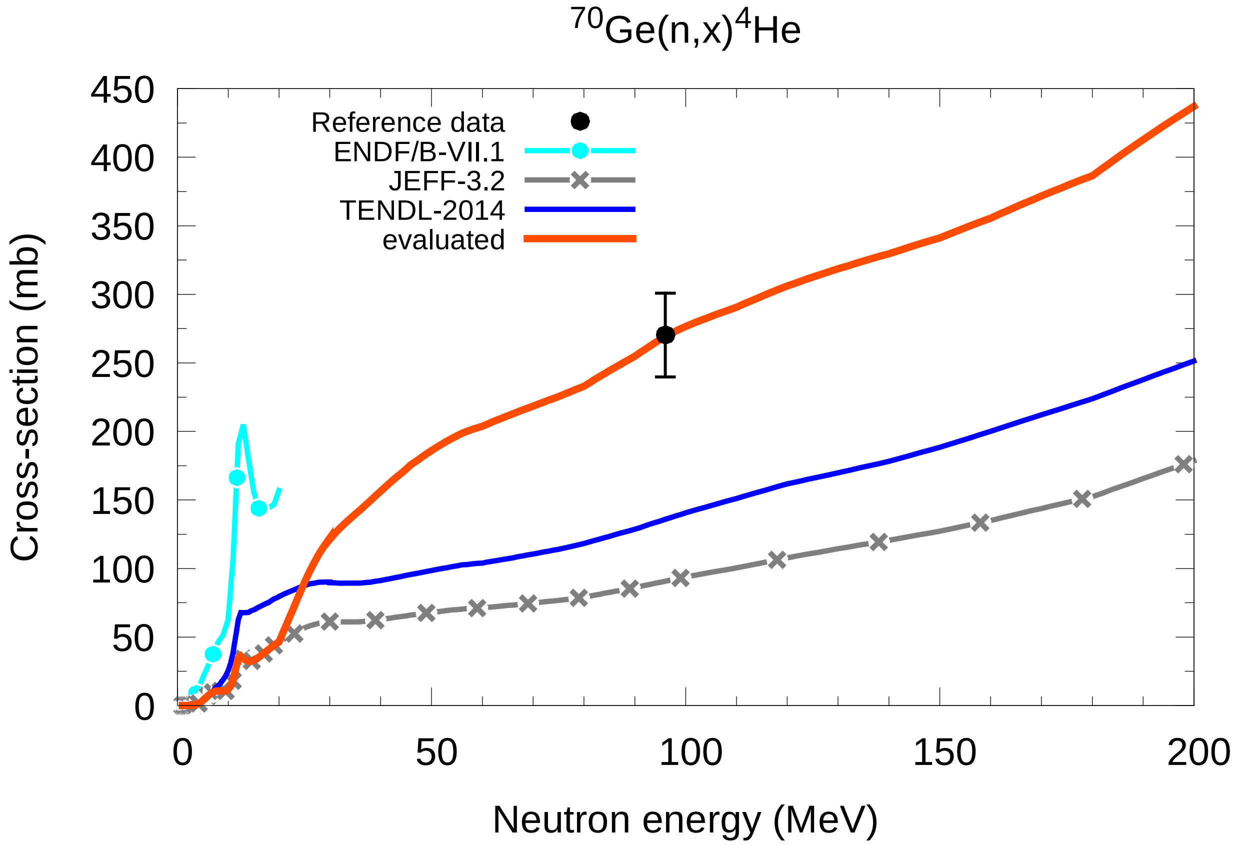
^{70}Zn(n,x)^{4}He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



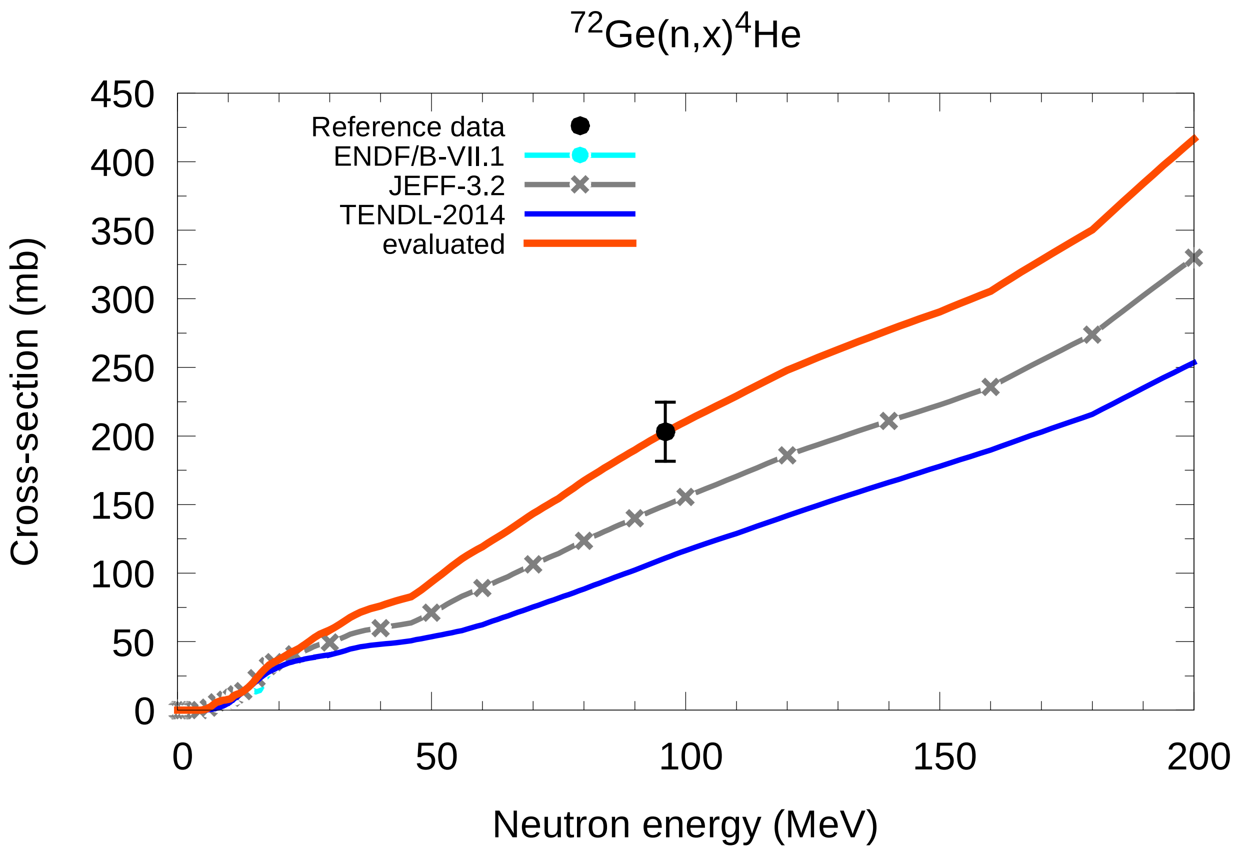
$^{69}Ga(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



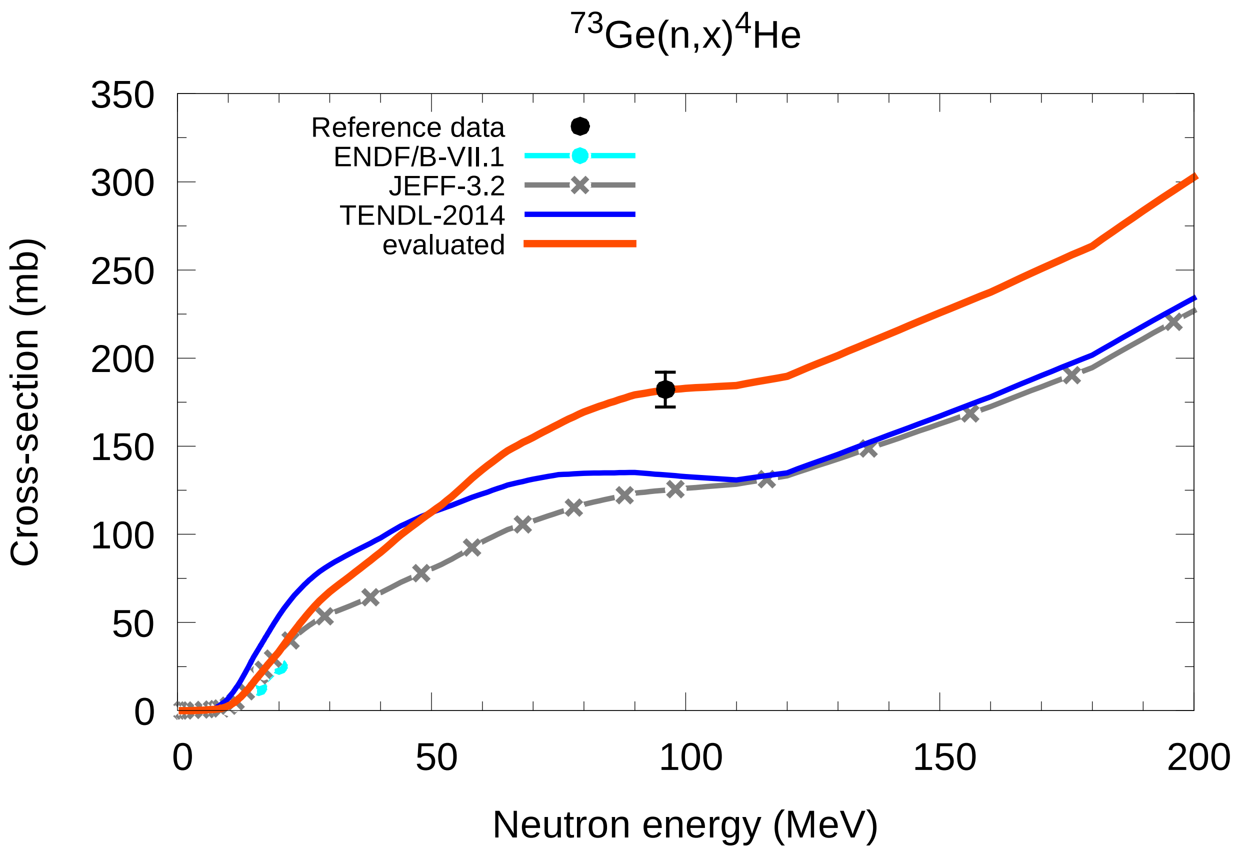
$^{71}Ga(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400

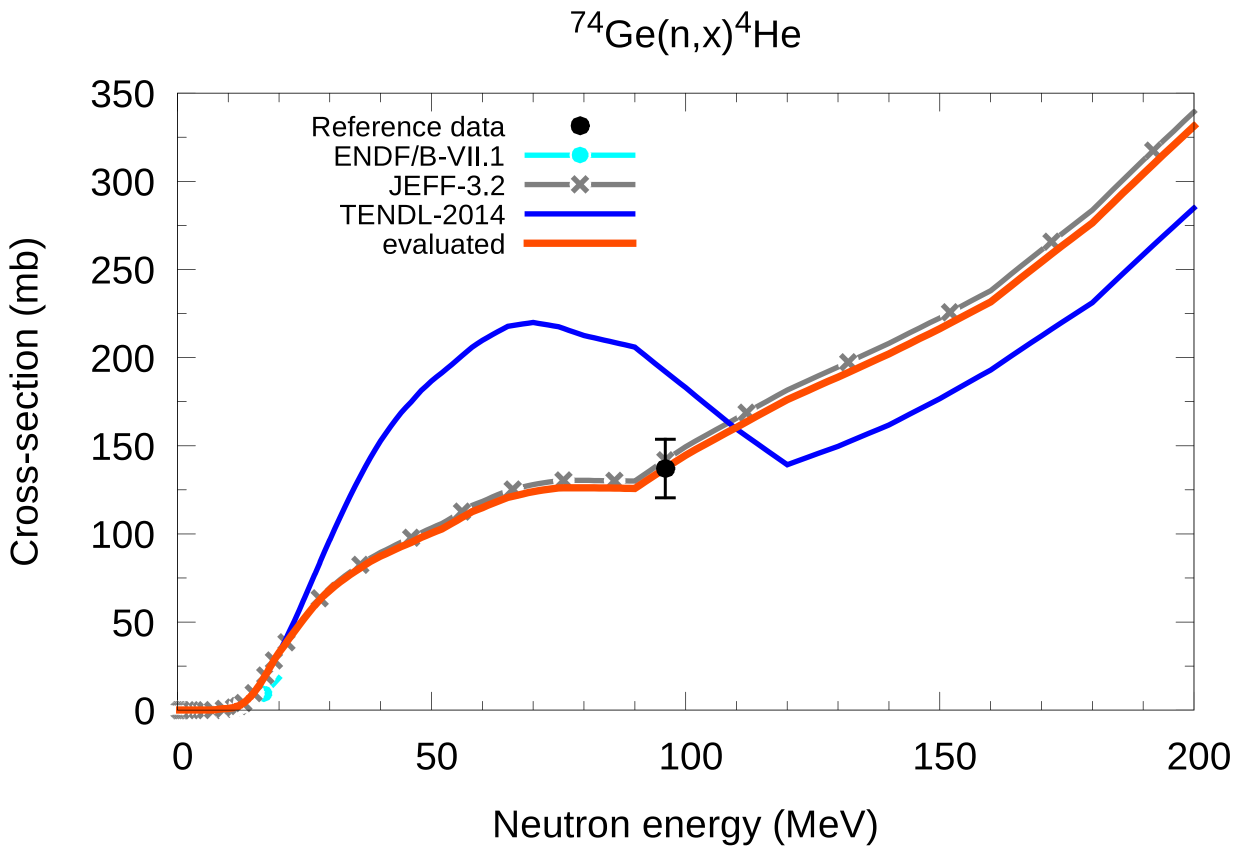


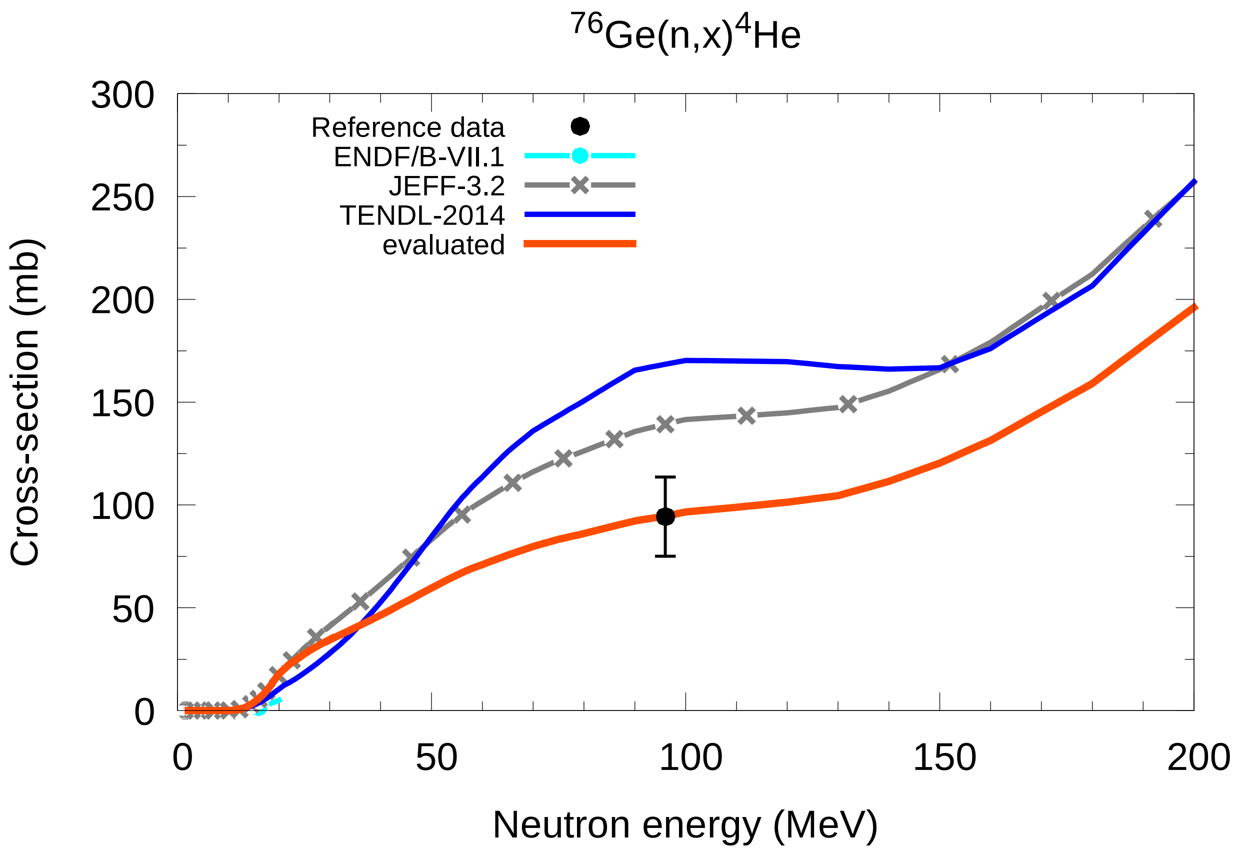
$^{70}Ge(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



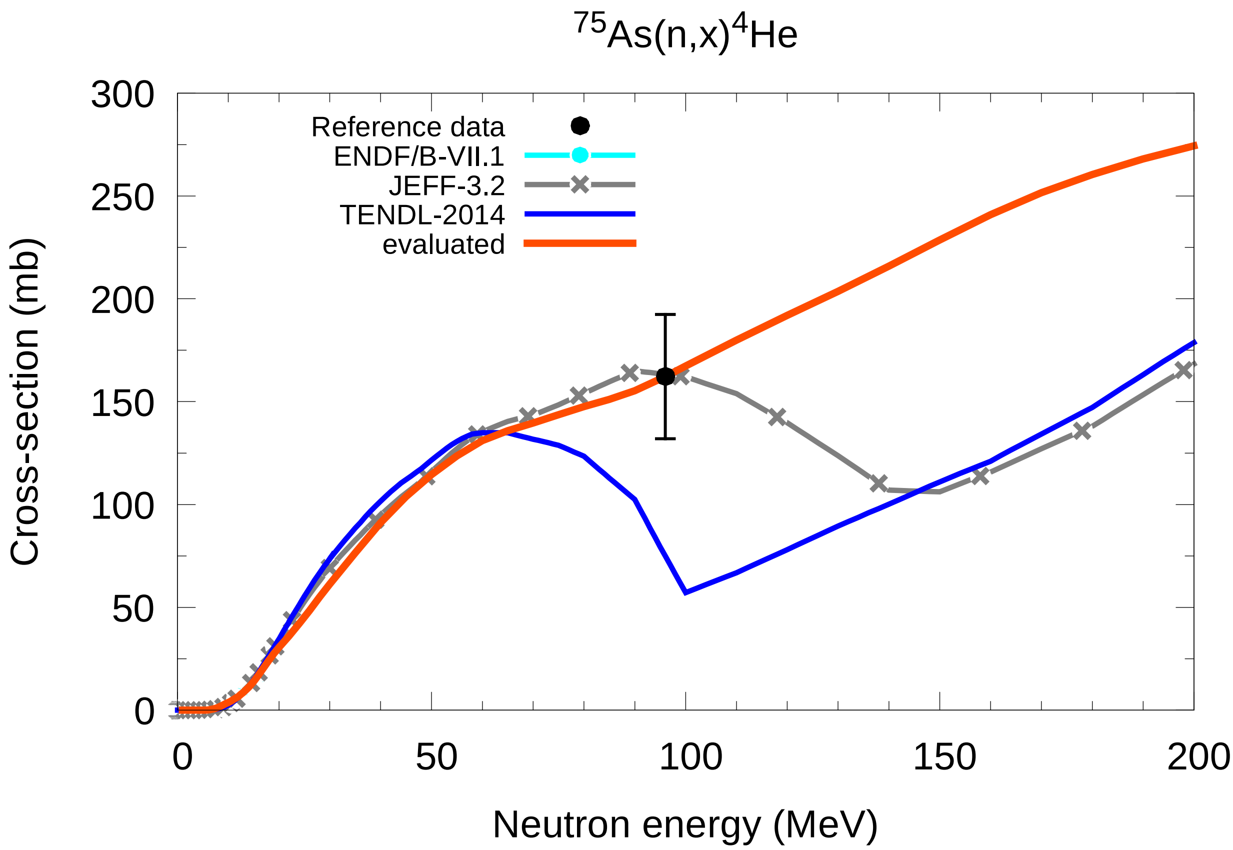
$^{72}Ge(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450


$^{73}Ge(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350

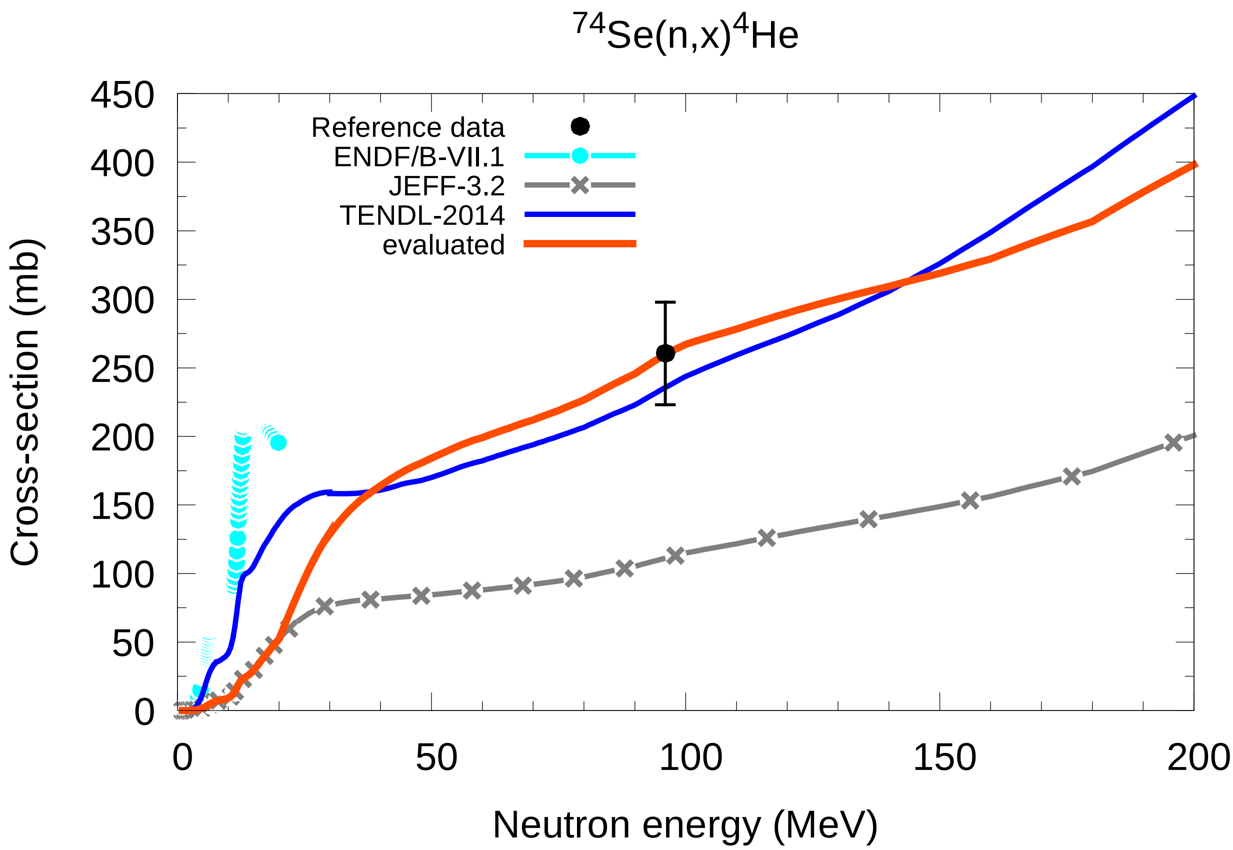

$^{74}Ge(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



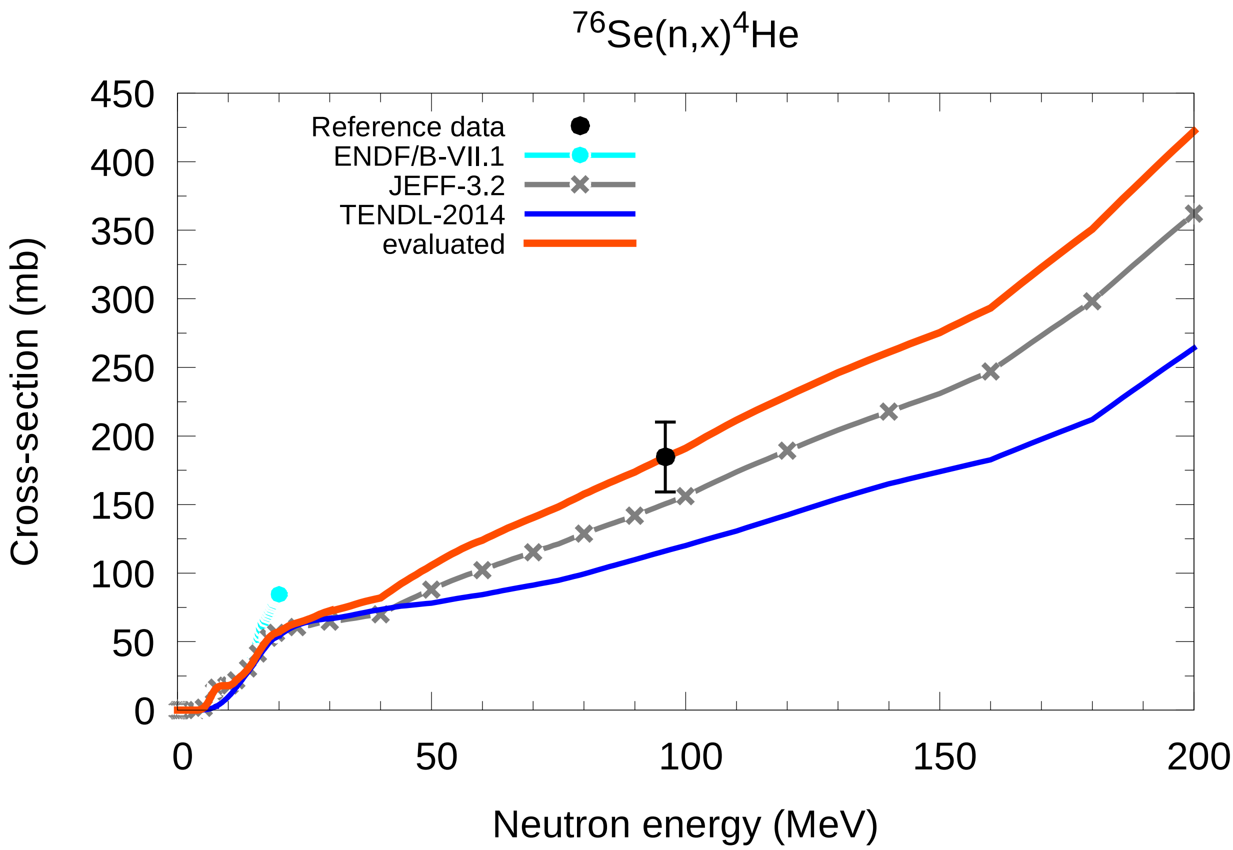
76Ge(n,x)4He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



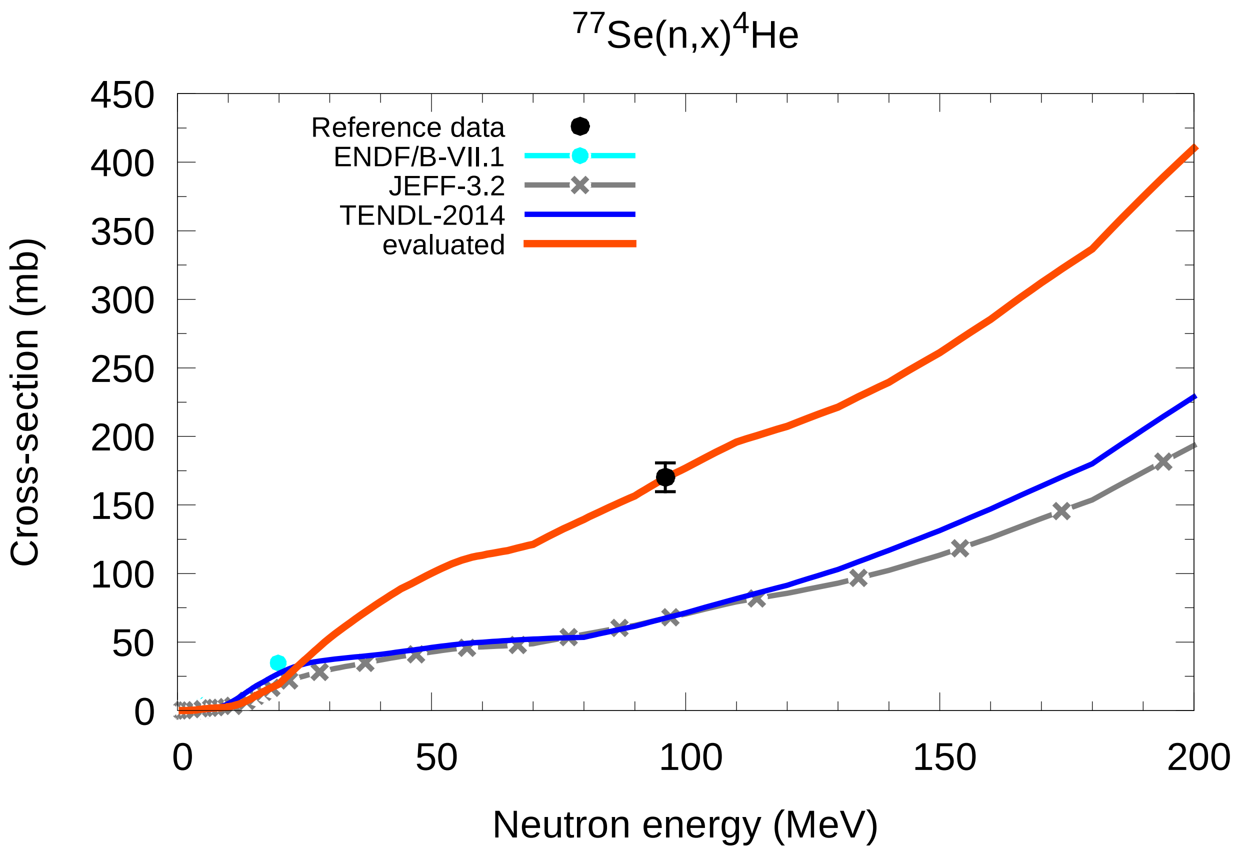
75As(n,x)4He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300

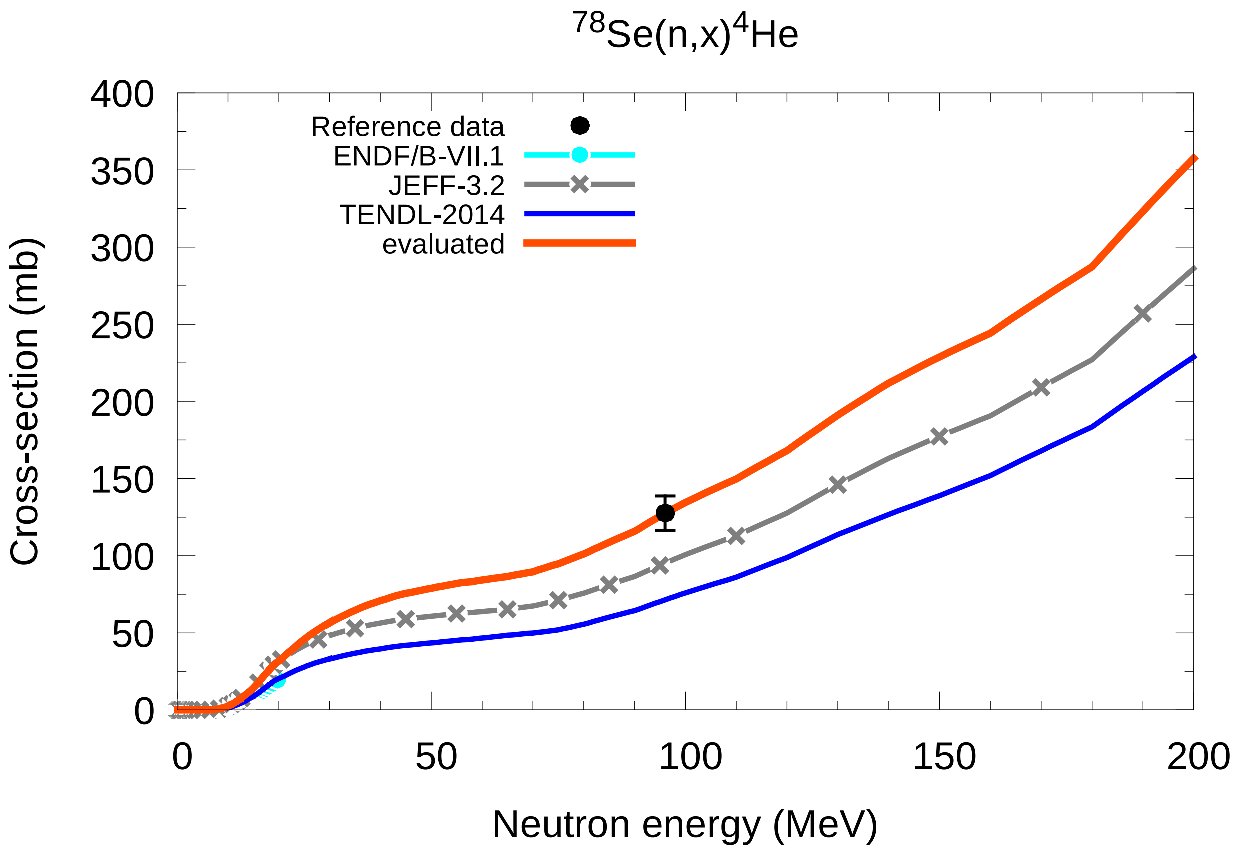


$^{74}Se(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
450
400
350
300
250
200
150
100
50
0
0
50
100
150
200
Neutron energy (MeV)

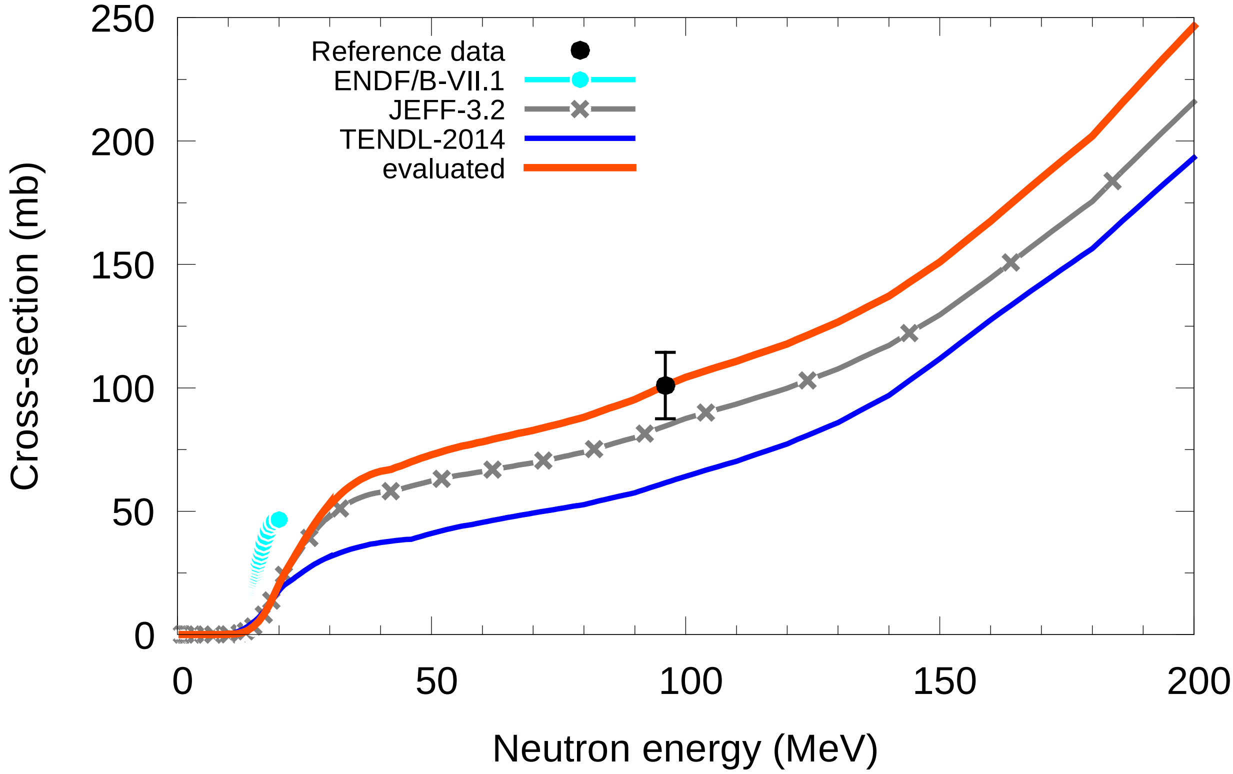


$^{76}Se(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
450
400
350
300
250
200
150
100
50
0
0
50
100
150
200
Neutron energy (MeV)

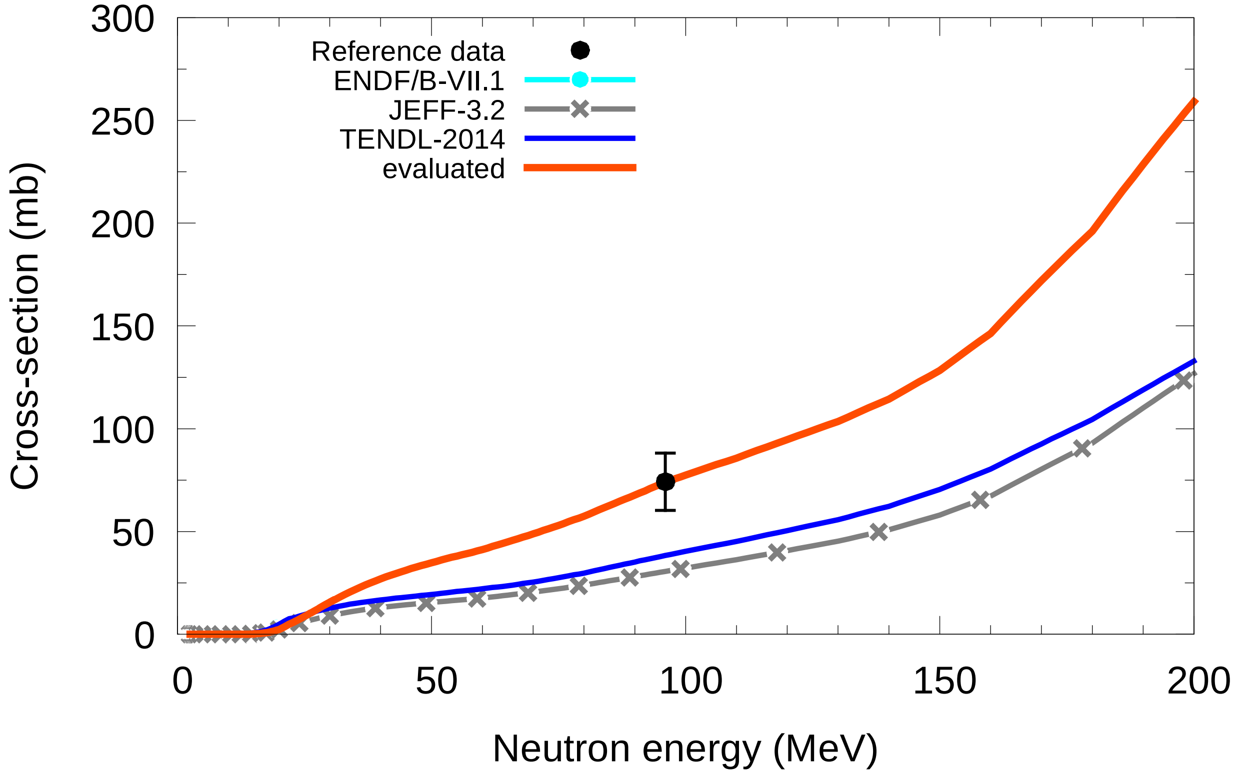

$^{77}Se(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450

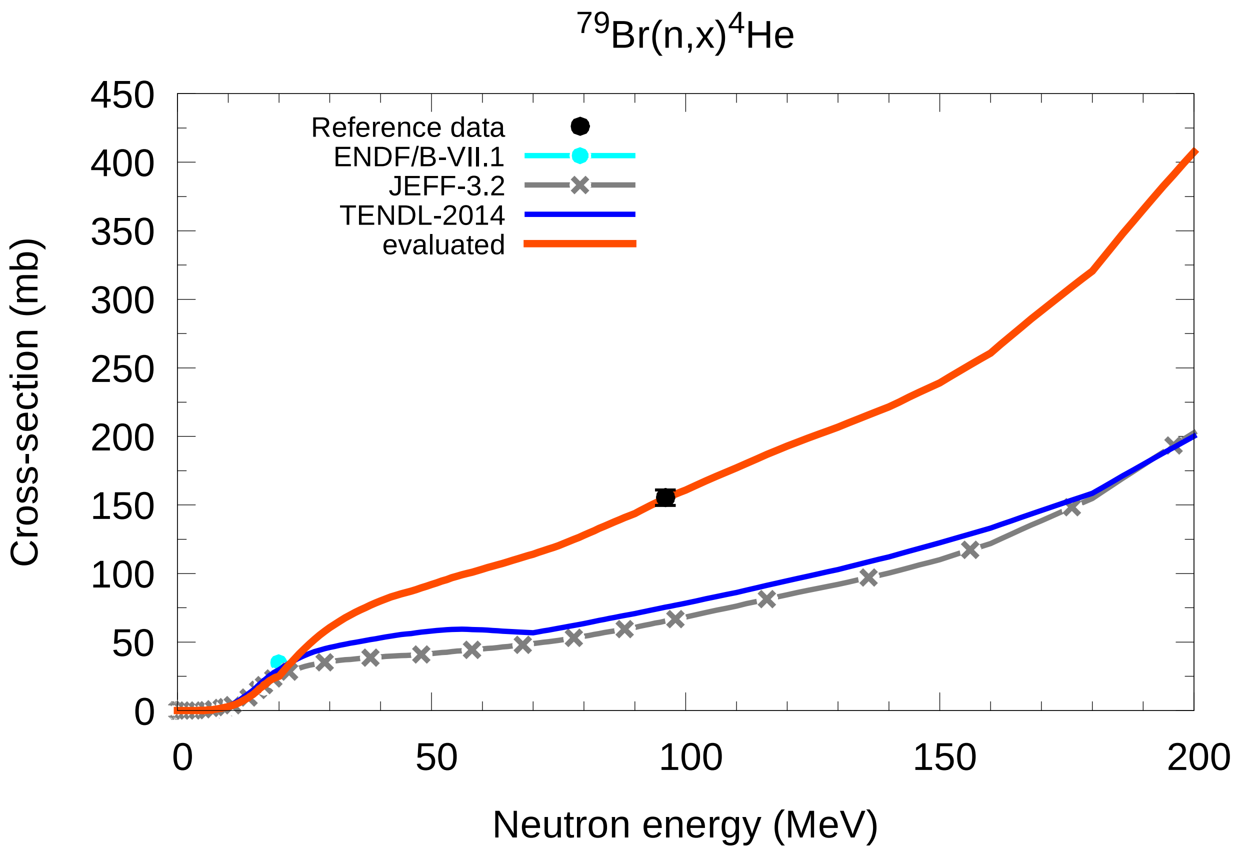

$^{78}Se(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400

$^{80}Se(n,x)^{4}He$

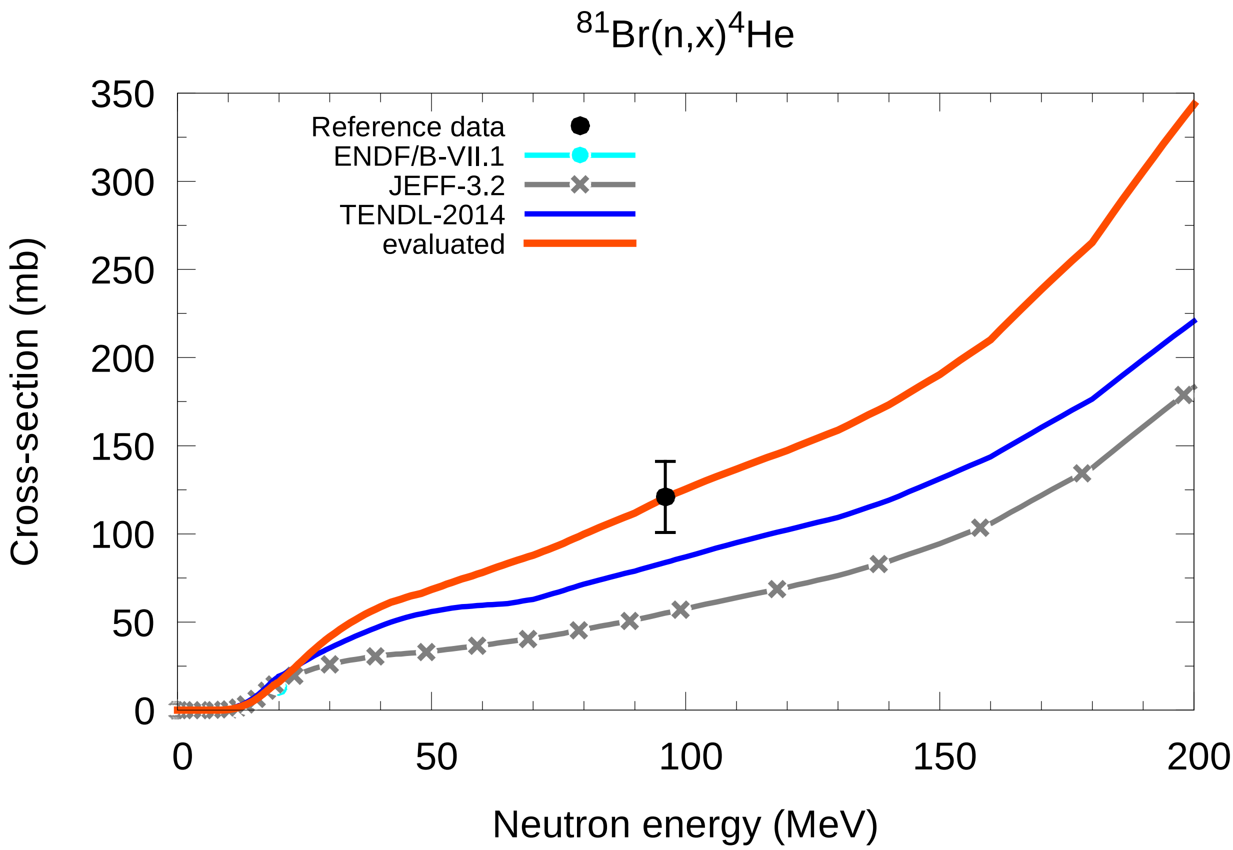


$^{82}Se(n,x)^{4}He$

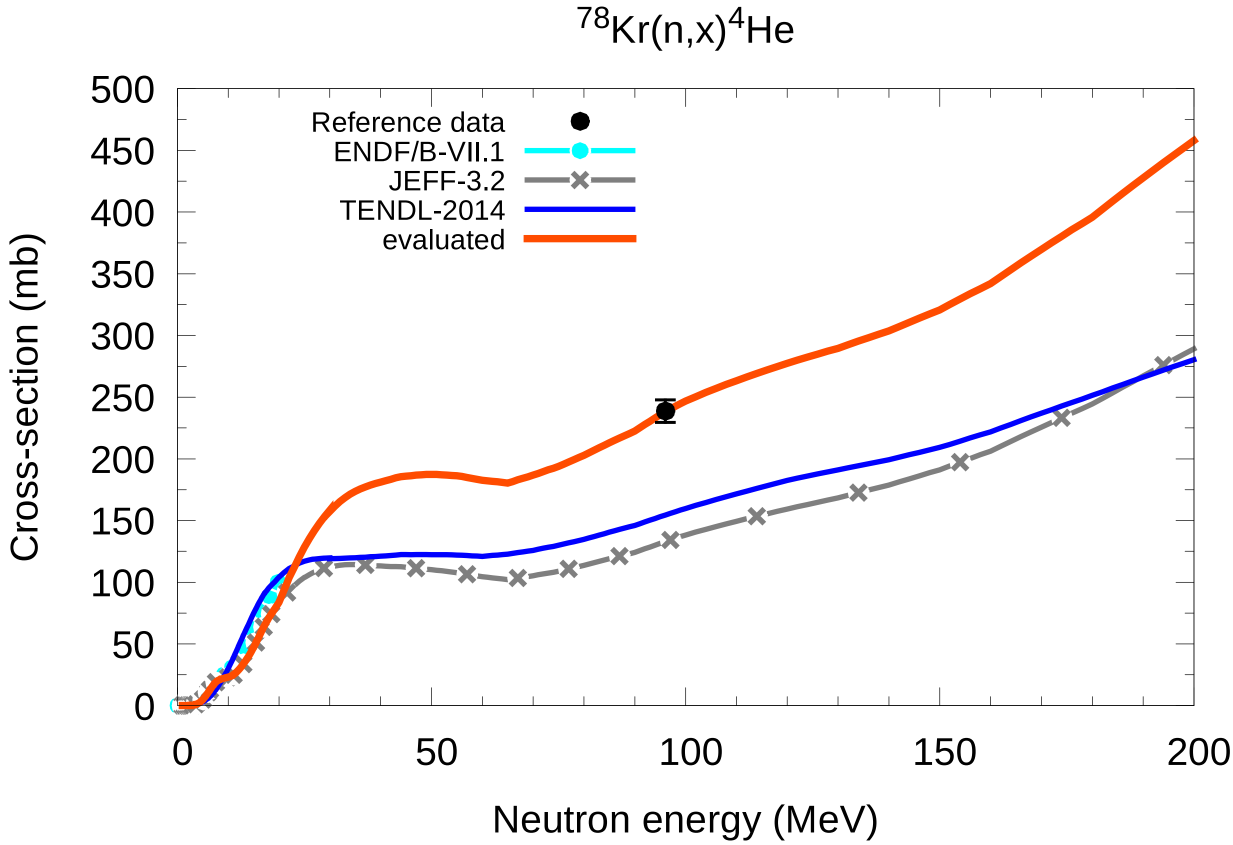




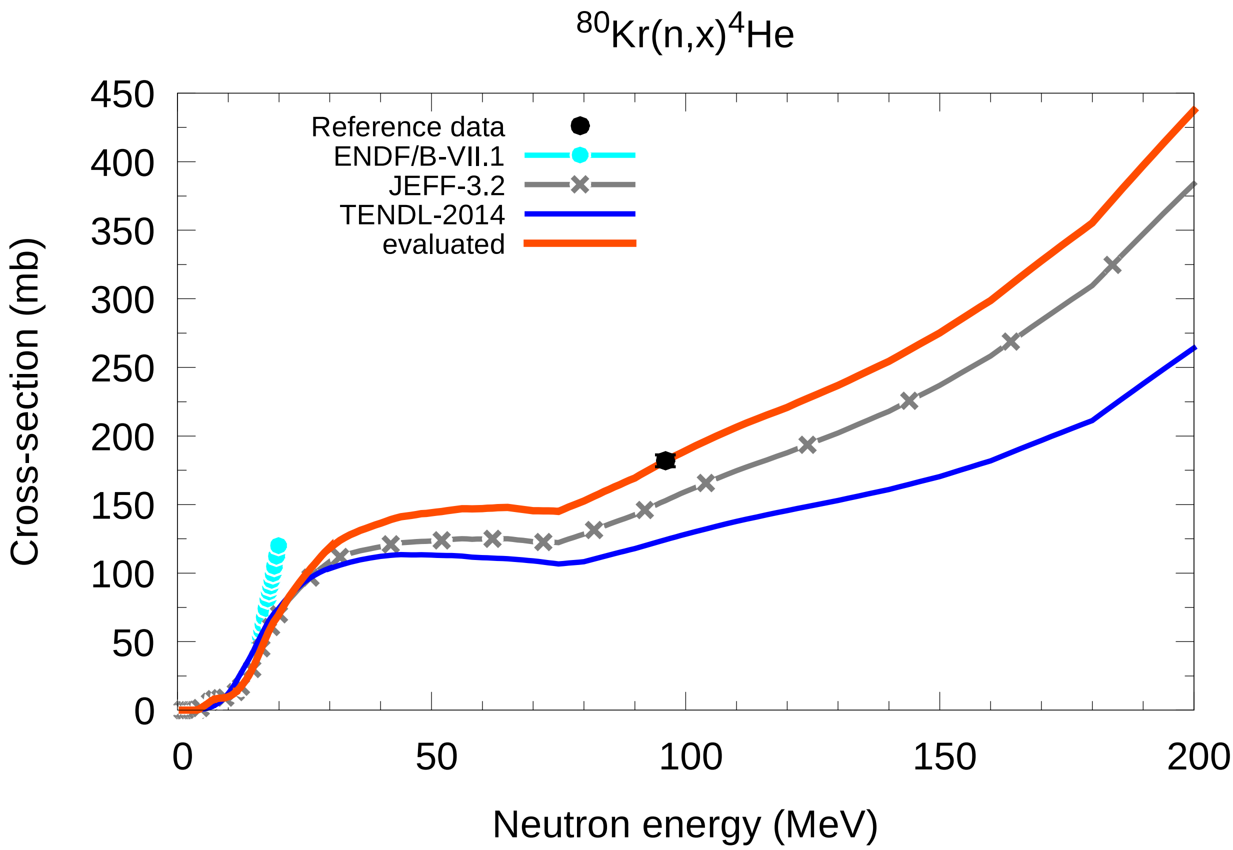
$^{79}Br(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



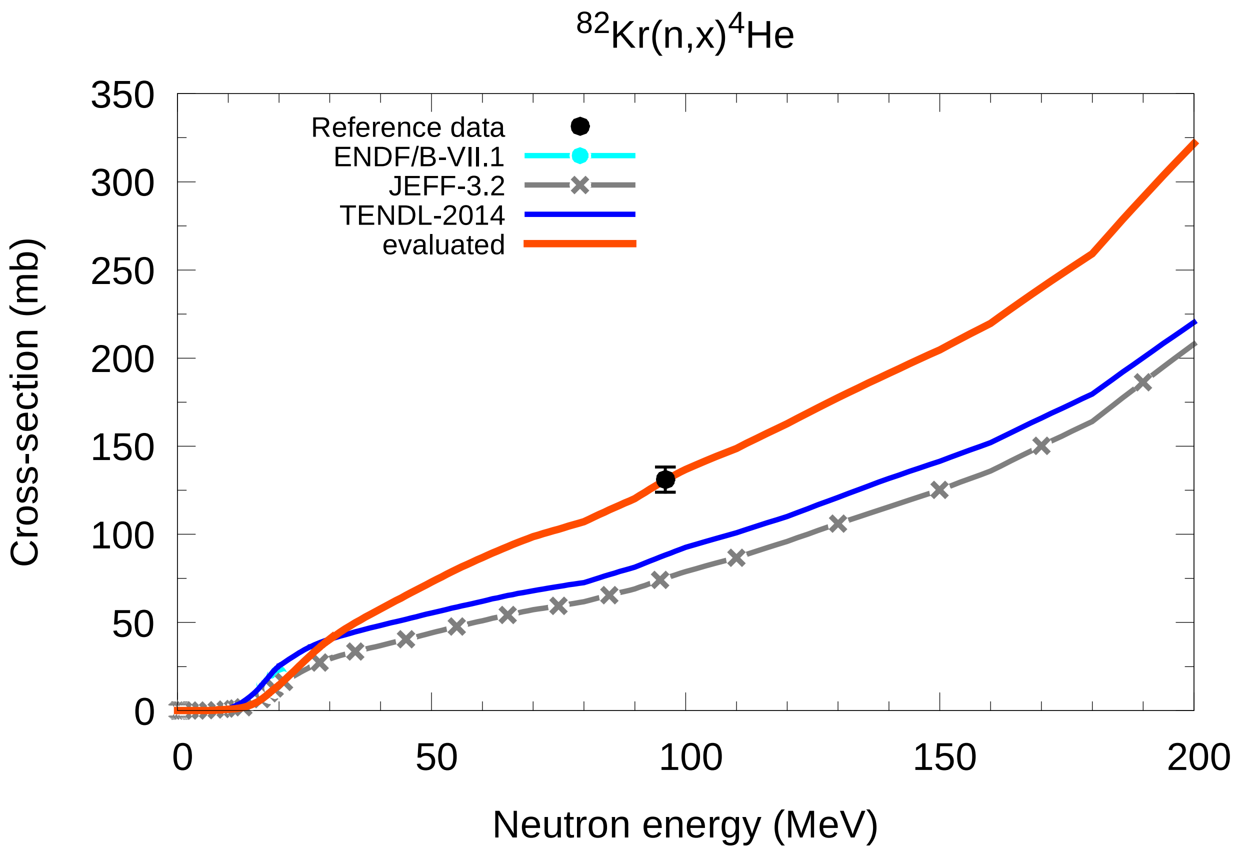
$^{81}Br(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



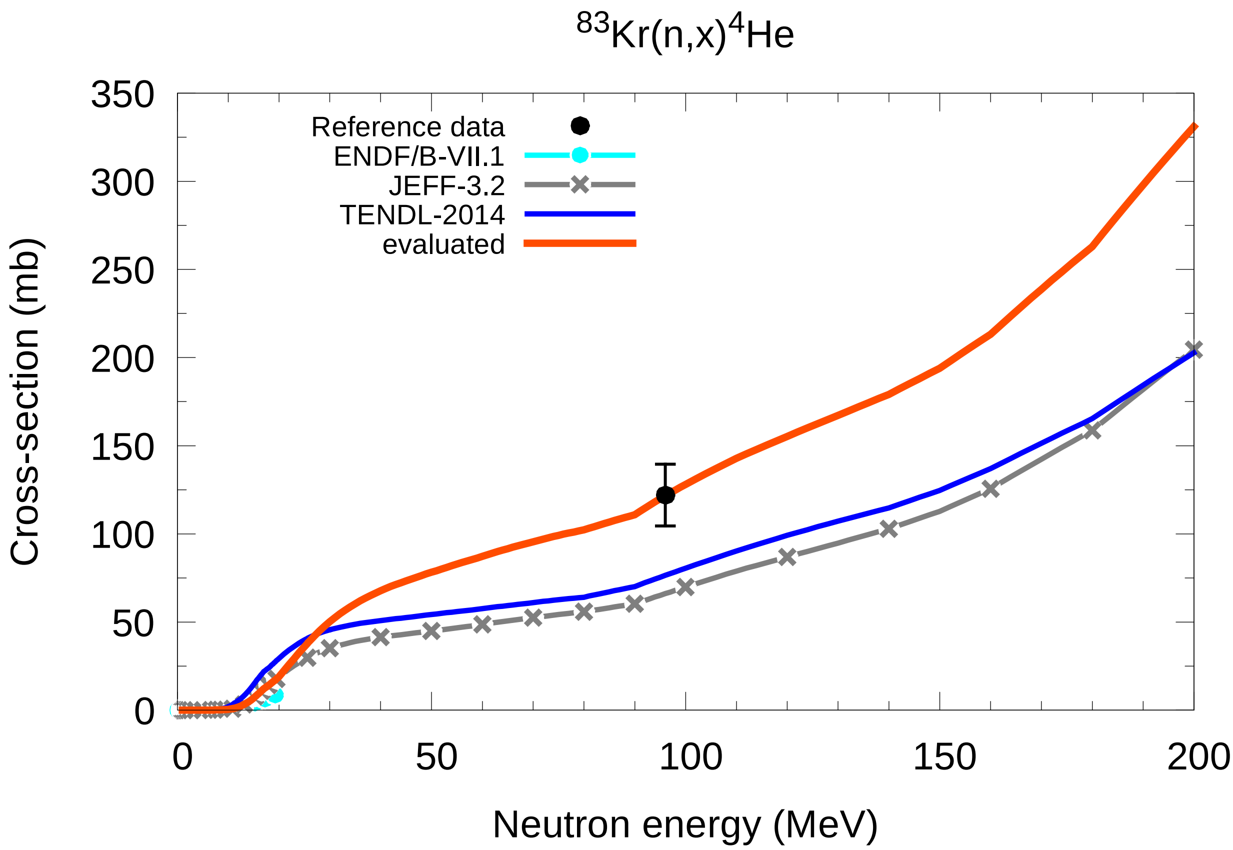
$^{78}Kr(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



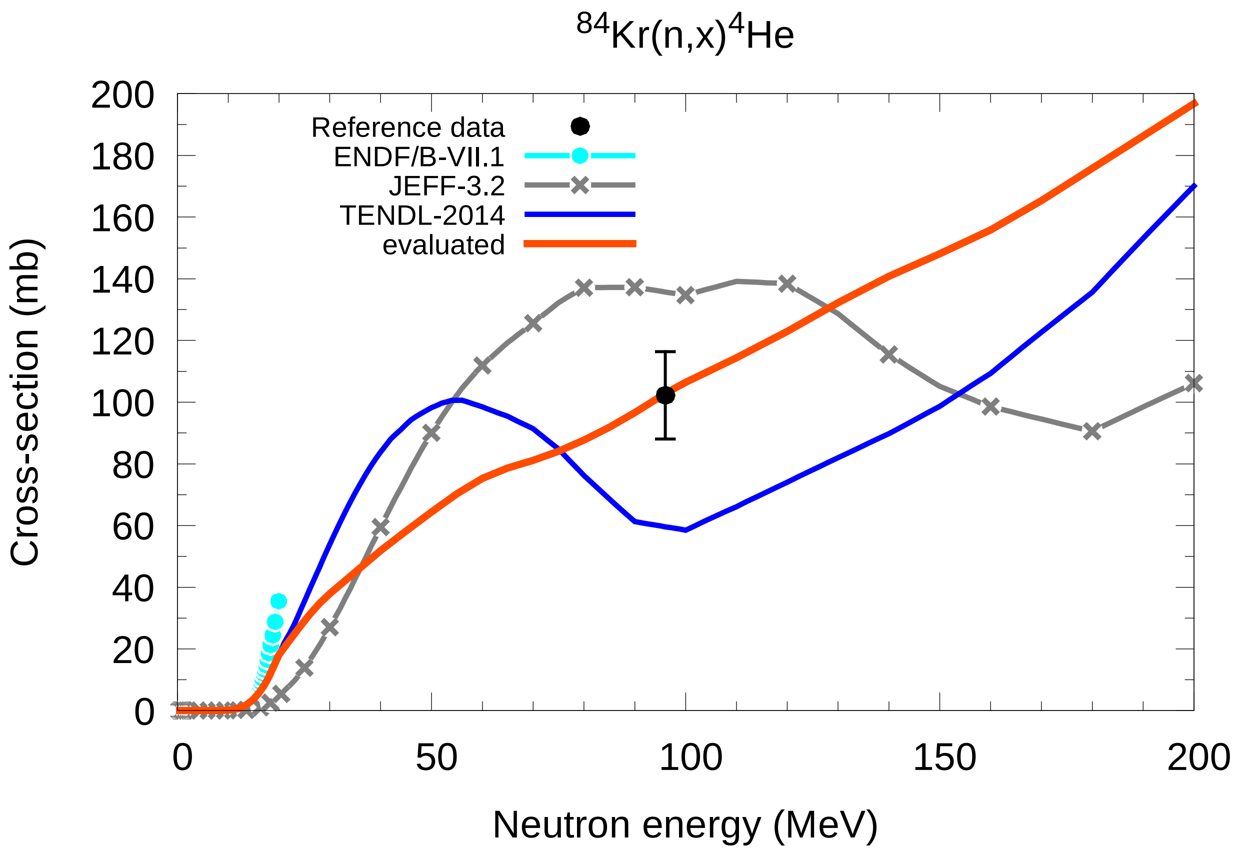
$^{80}Kr(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



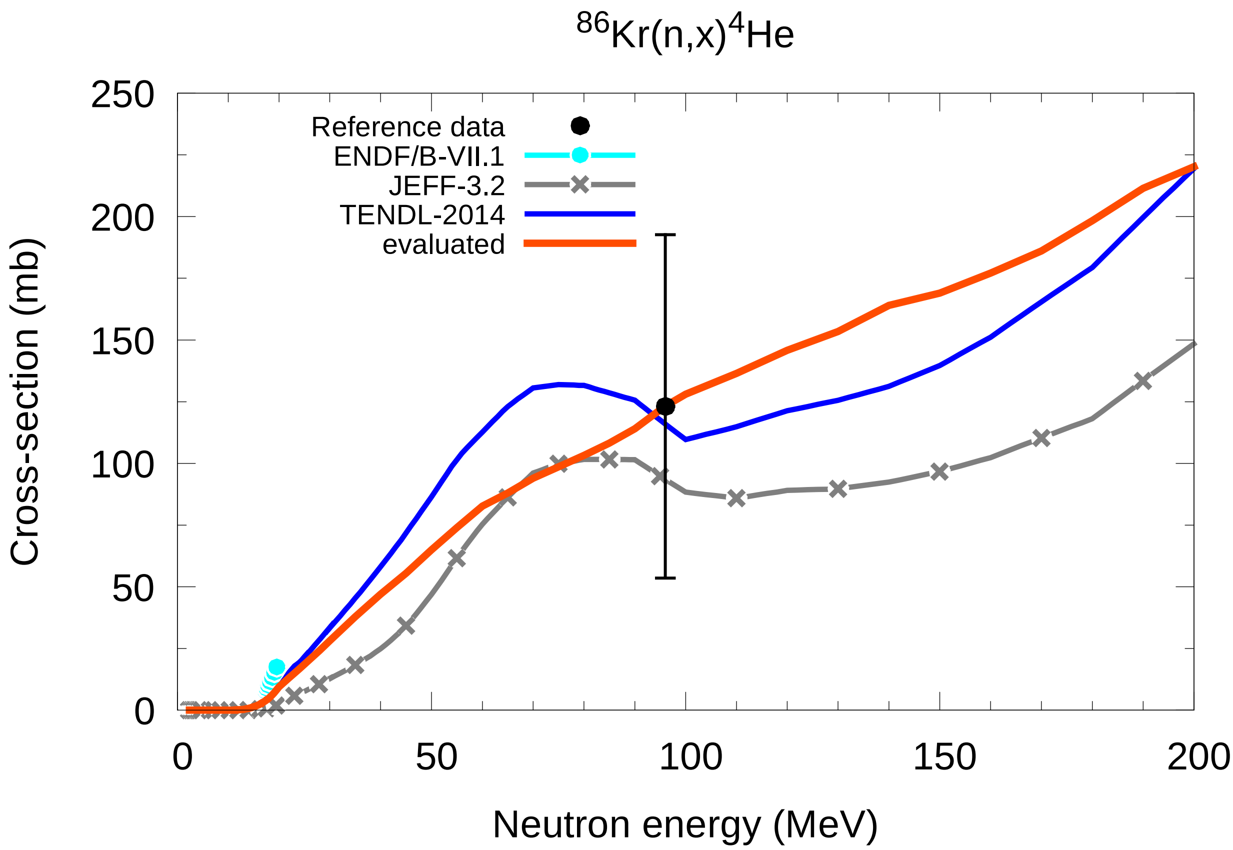
82Kr(n,x)4He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



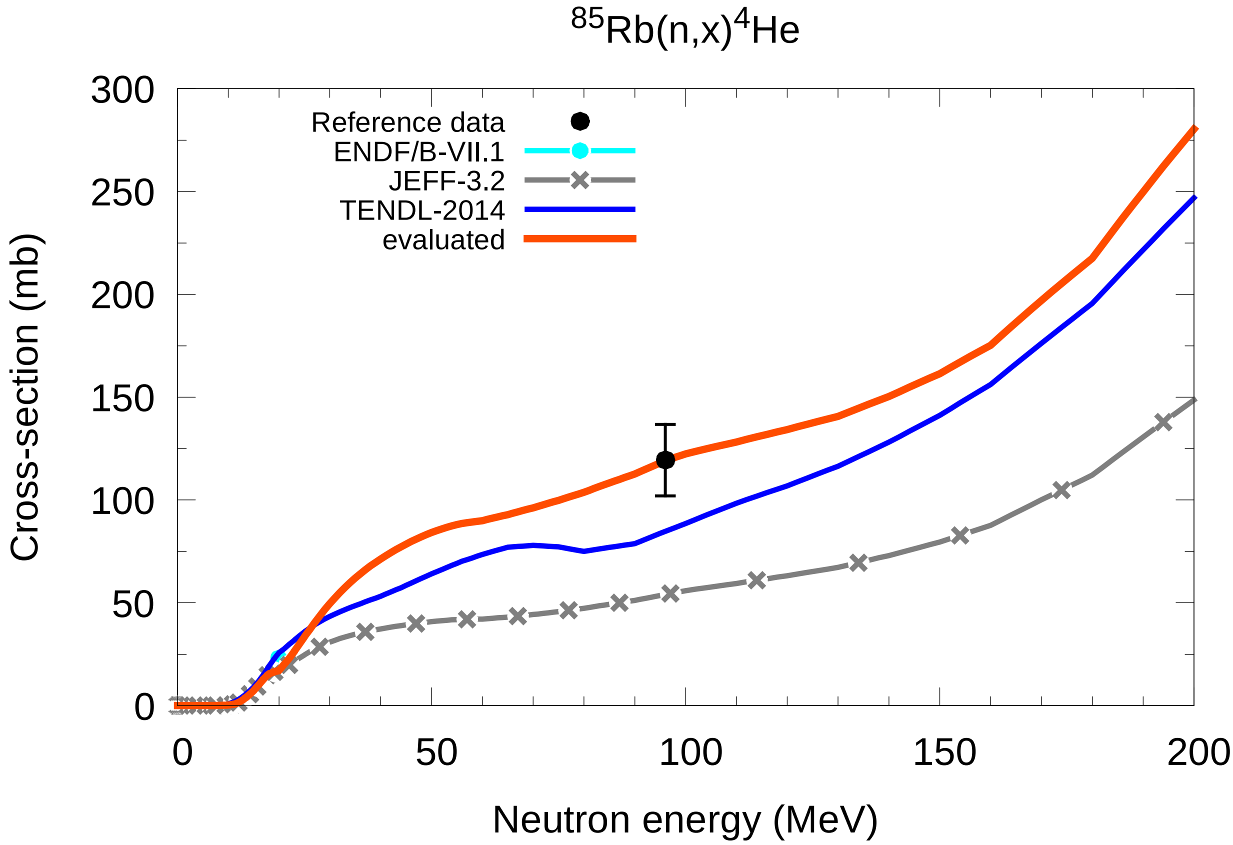
83Kr(n,x)4He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



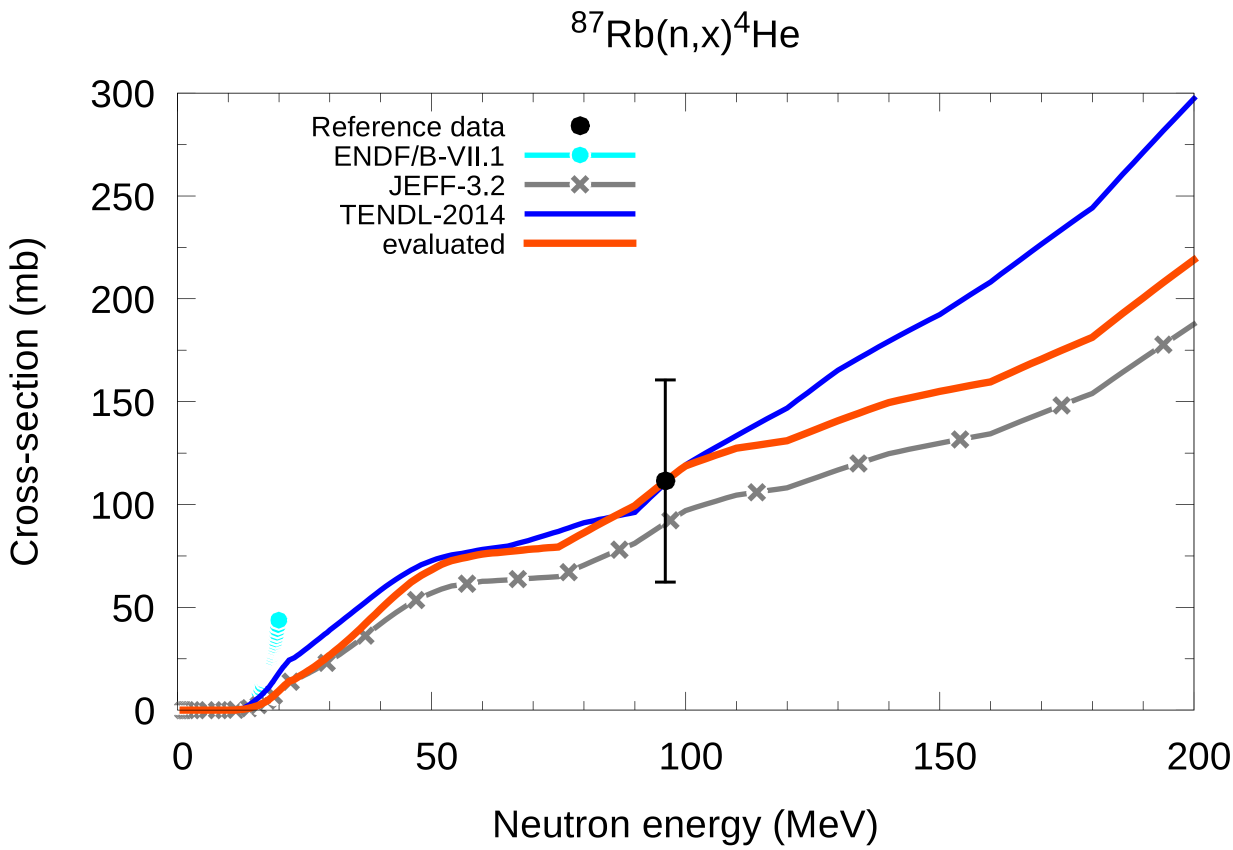
84Kr(n,x)4He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200



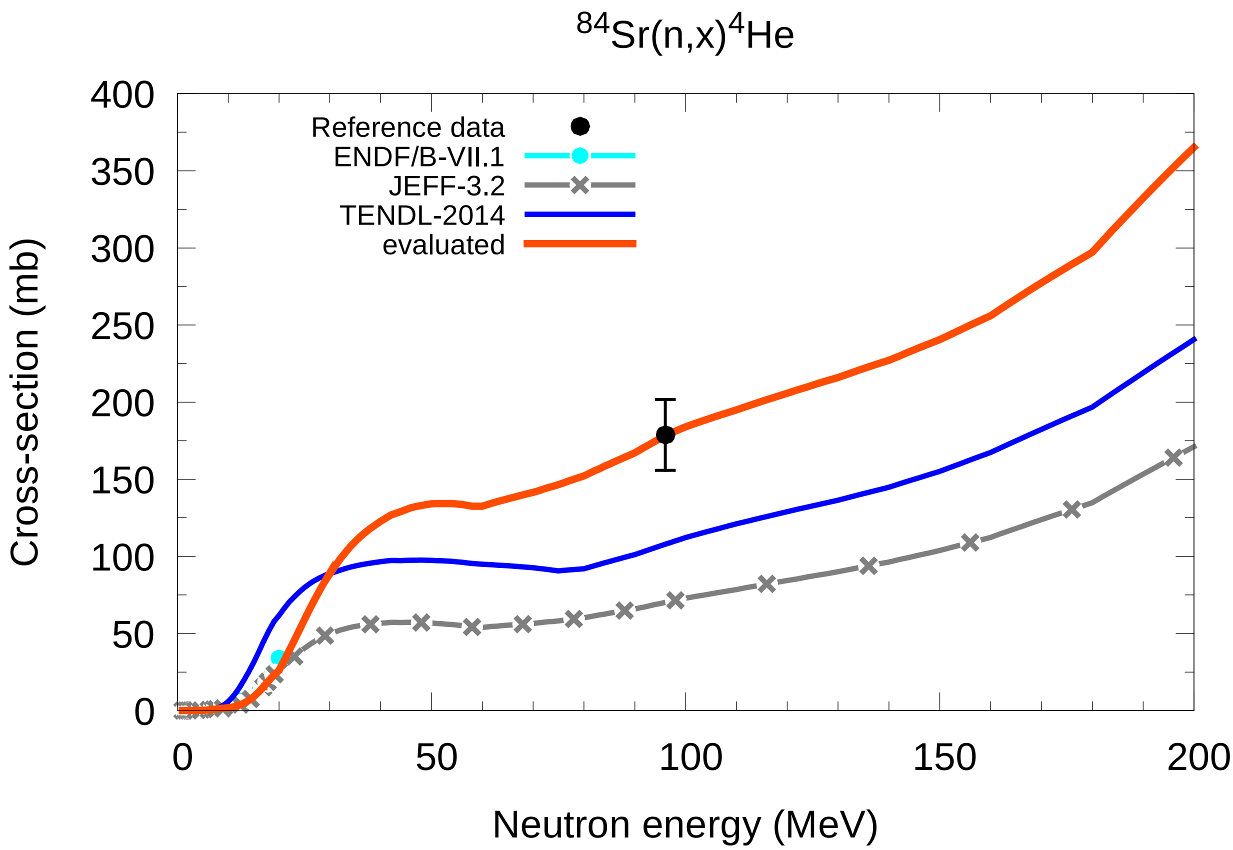
86Kr(n,x)4He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
0
50
100
150
200



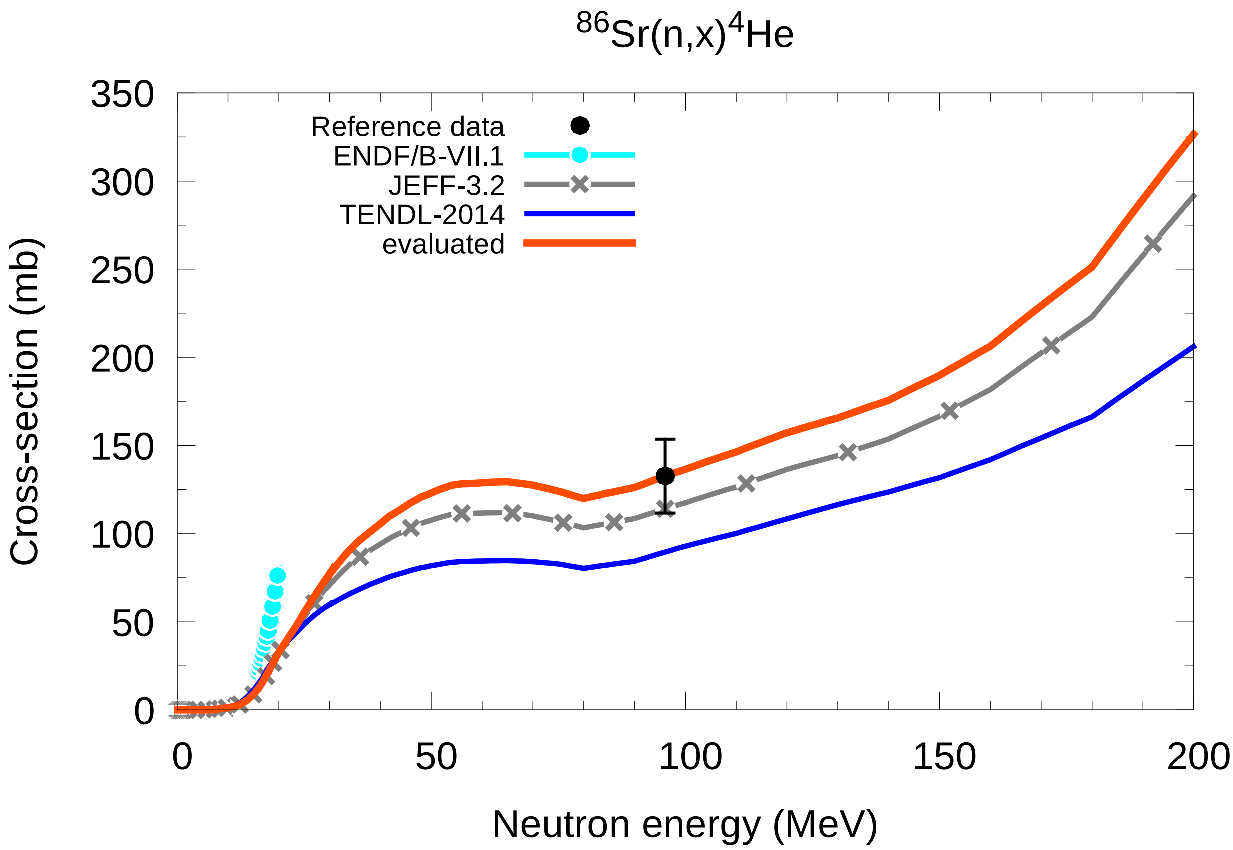
$^{85}Rb(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



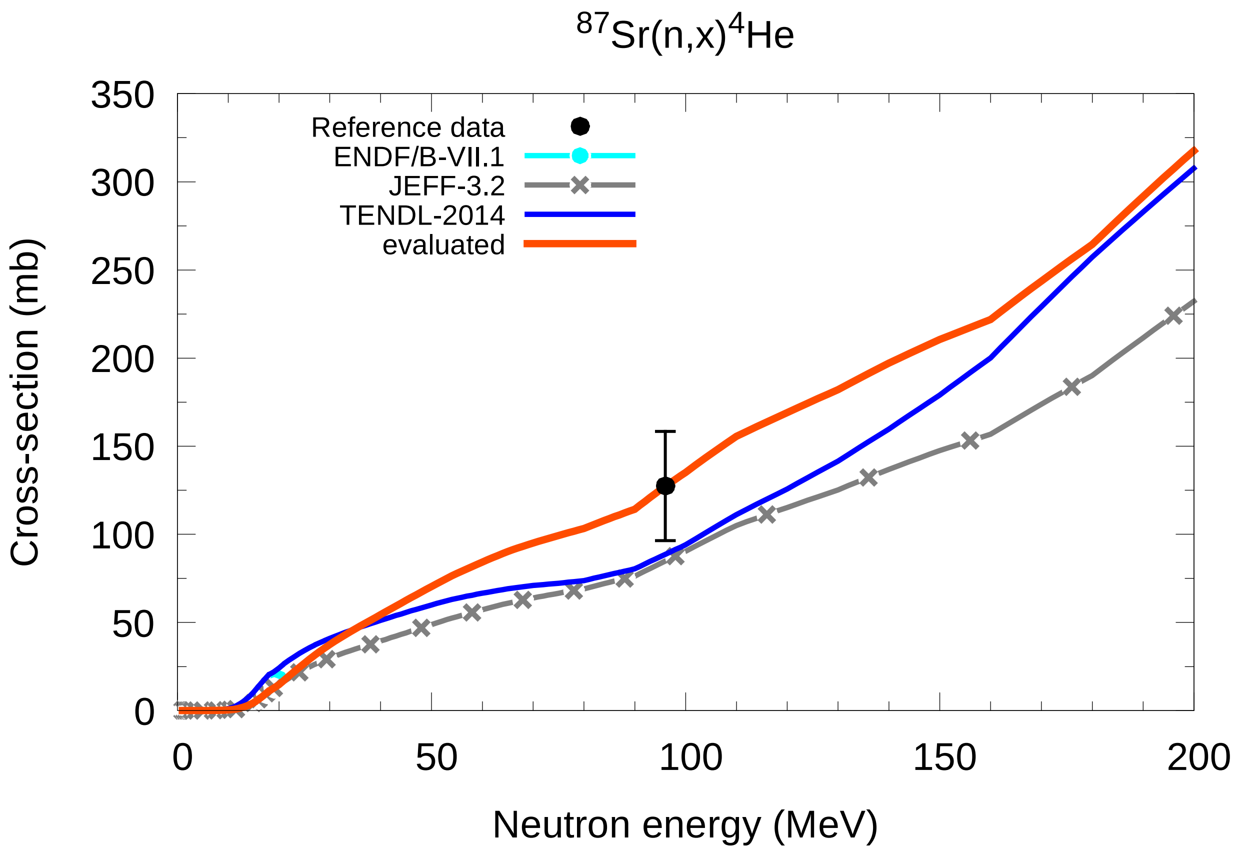
$^{87}Rb(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



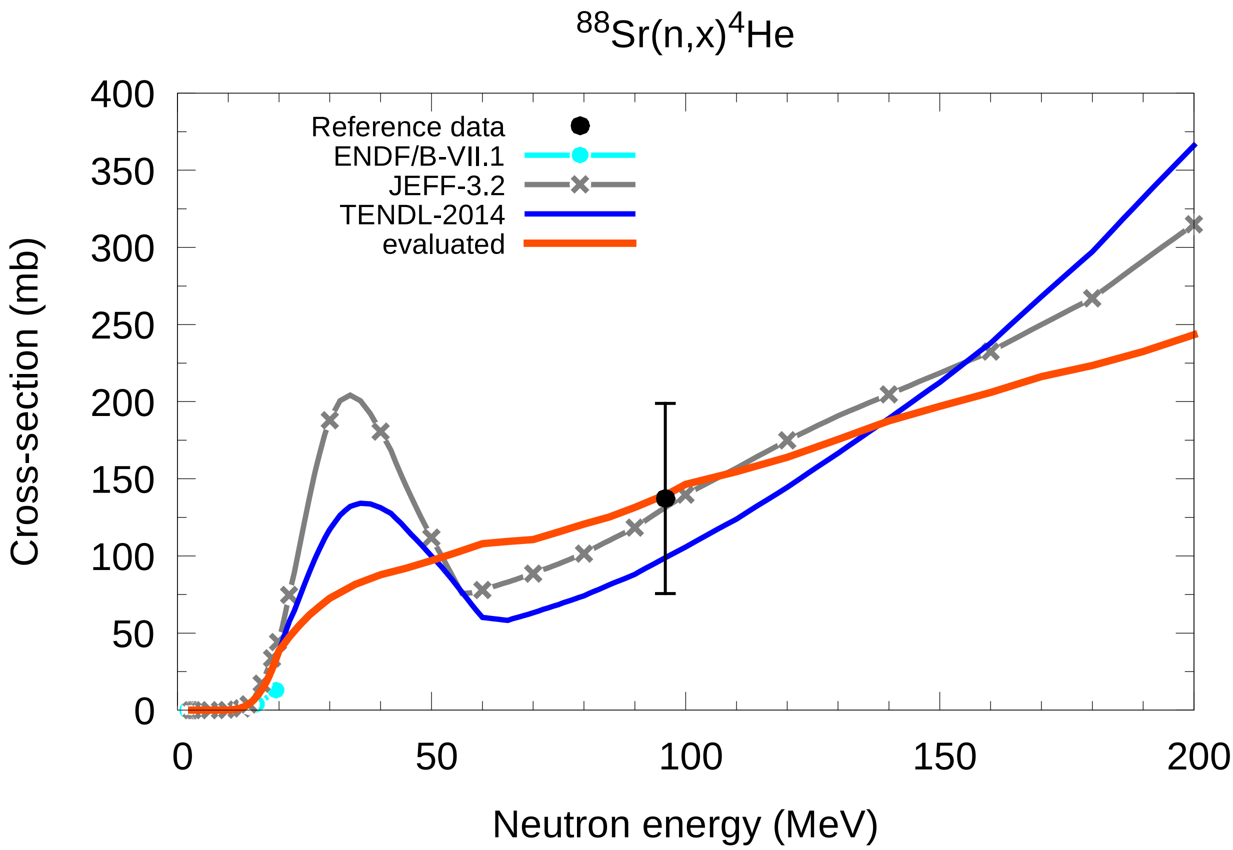
$^{84}Sr(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



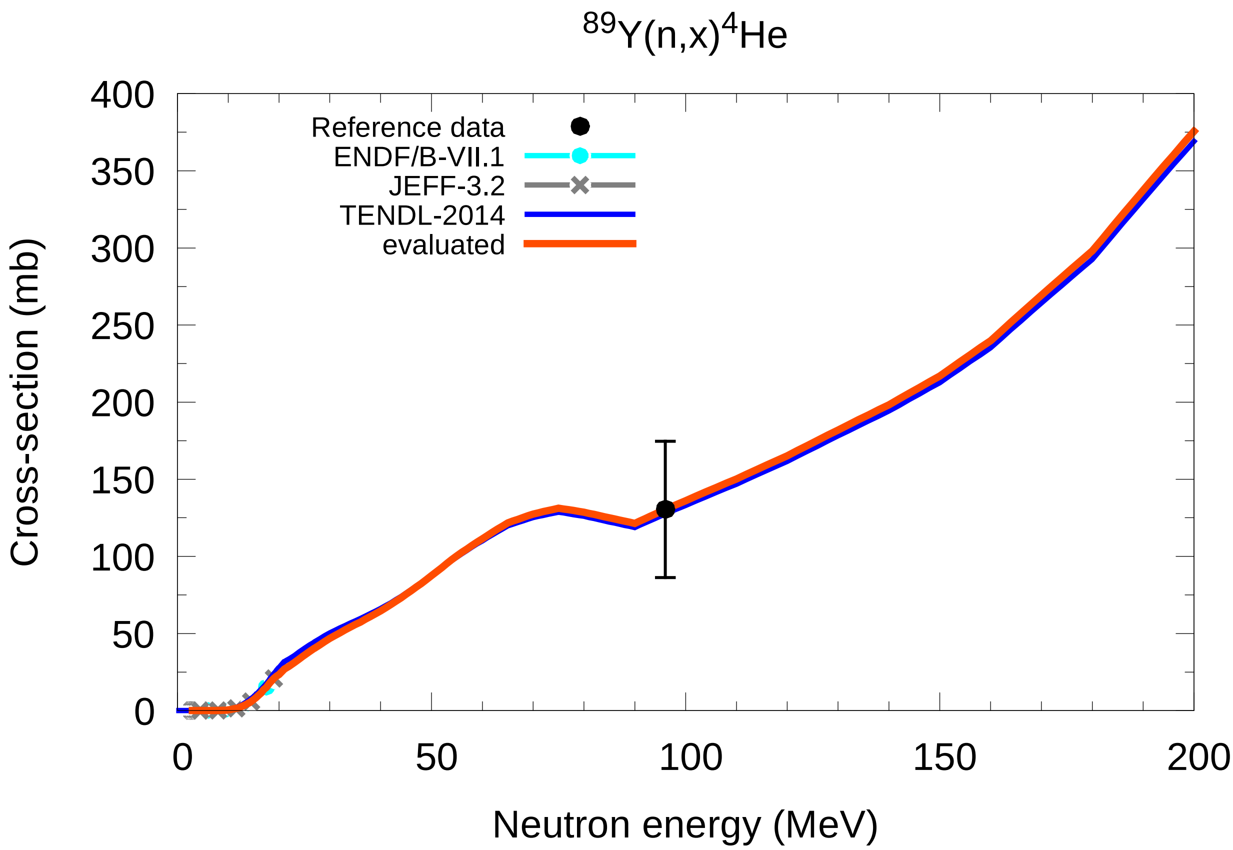
$^{86}Sr(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



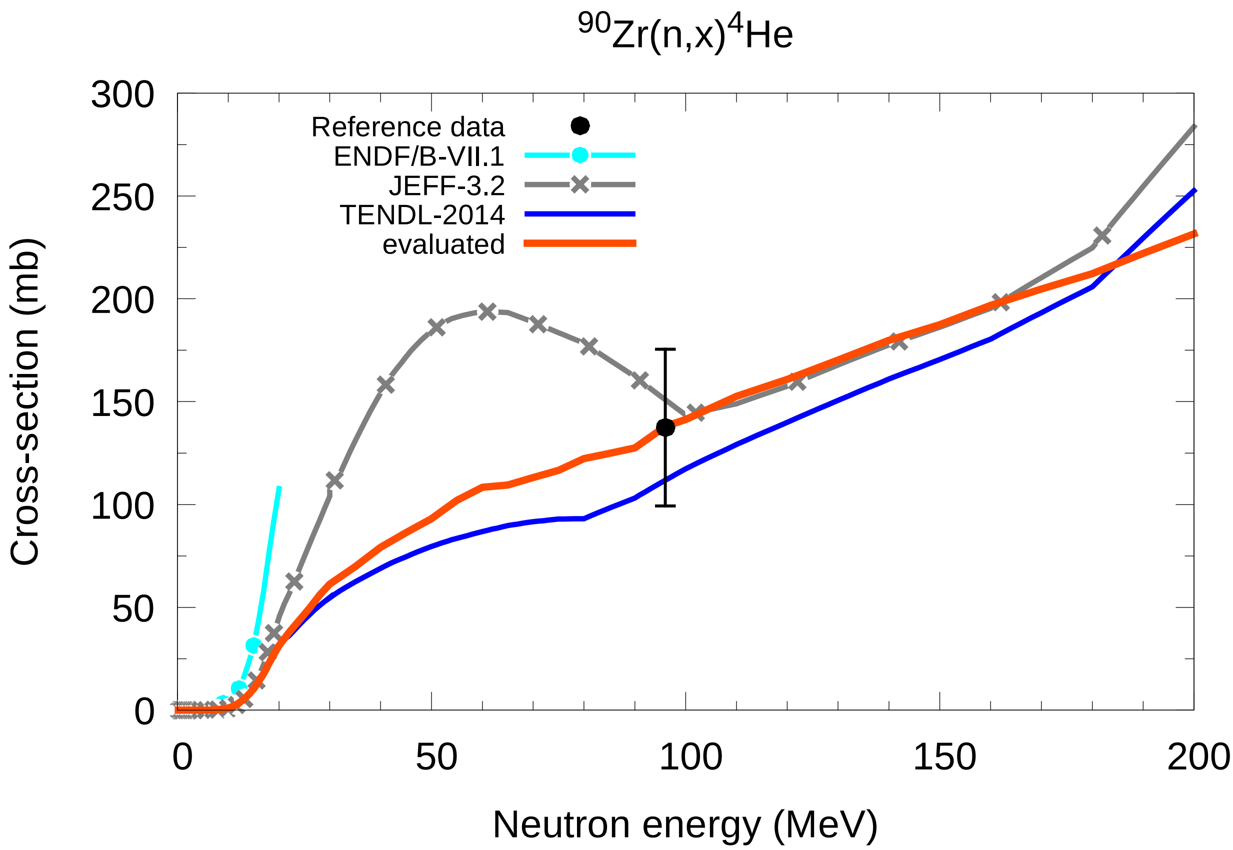
$^{87}Sr(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



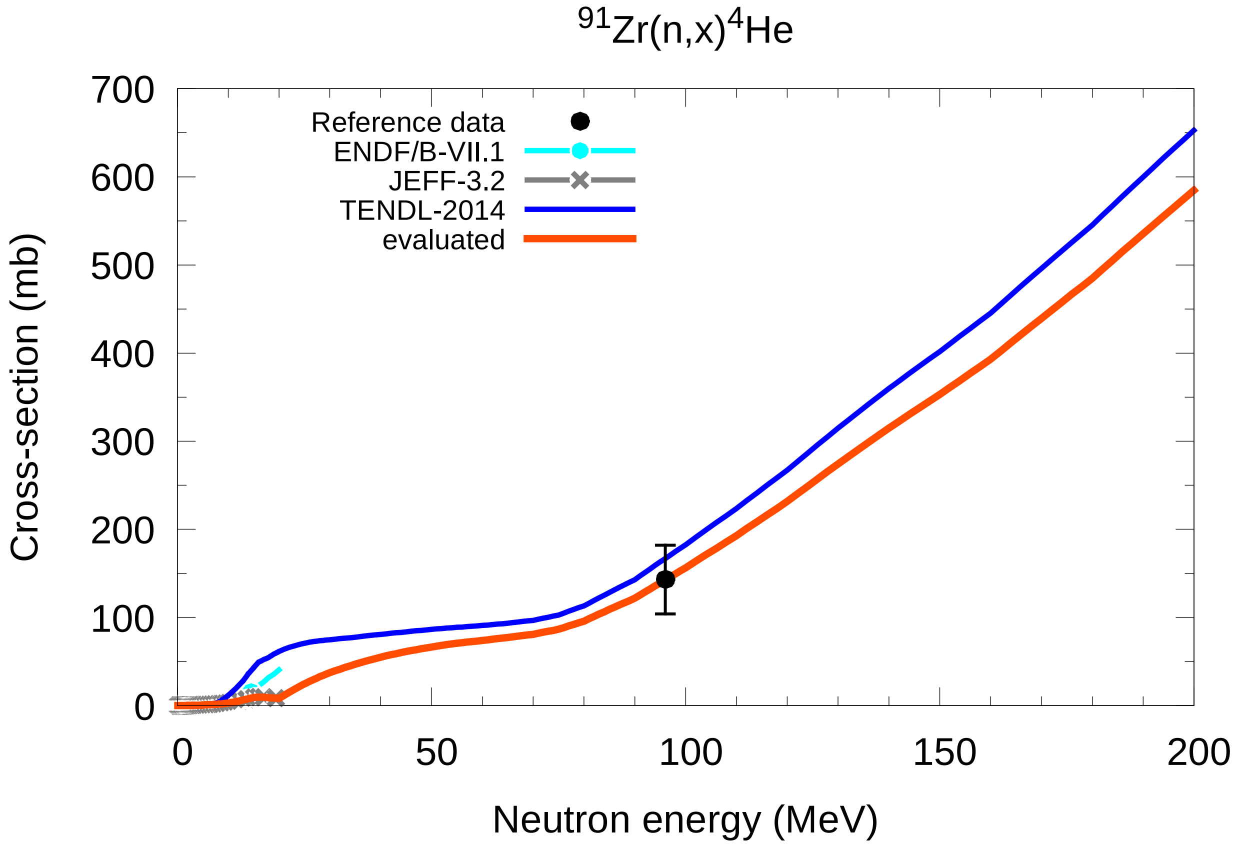
$^{88}Sr(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



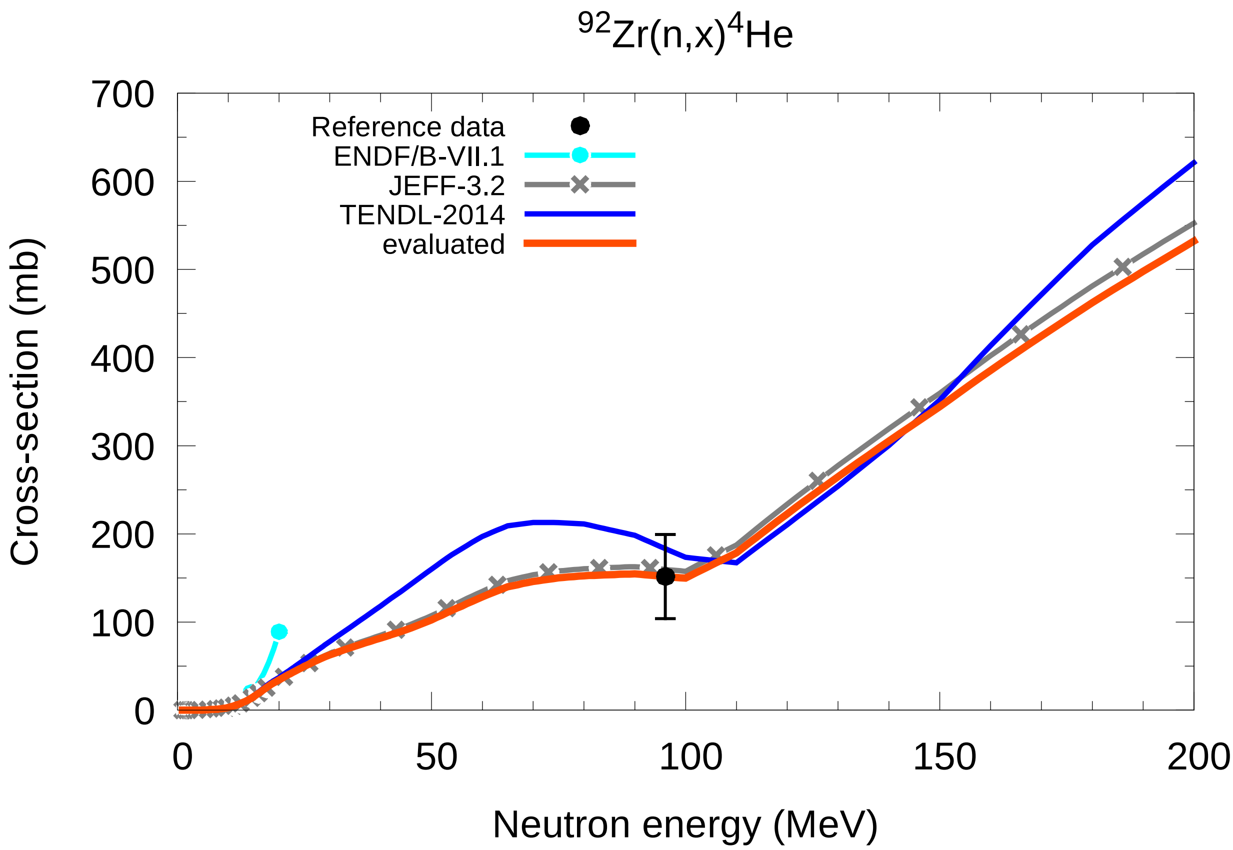
$^{89}Y(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



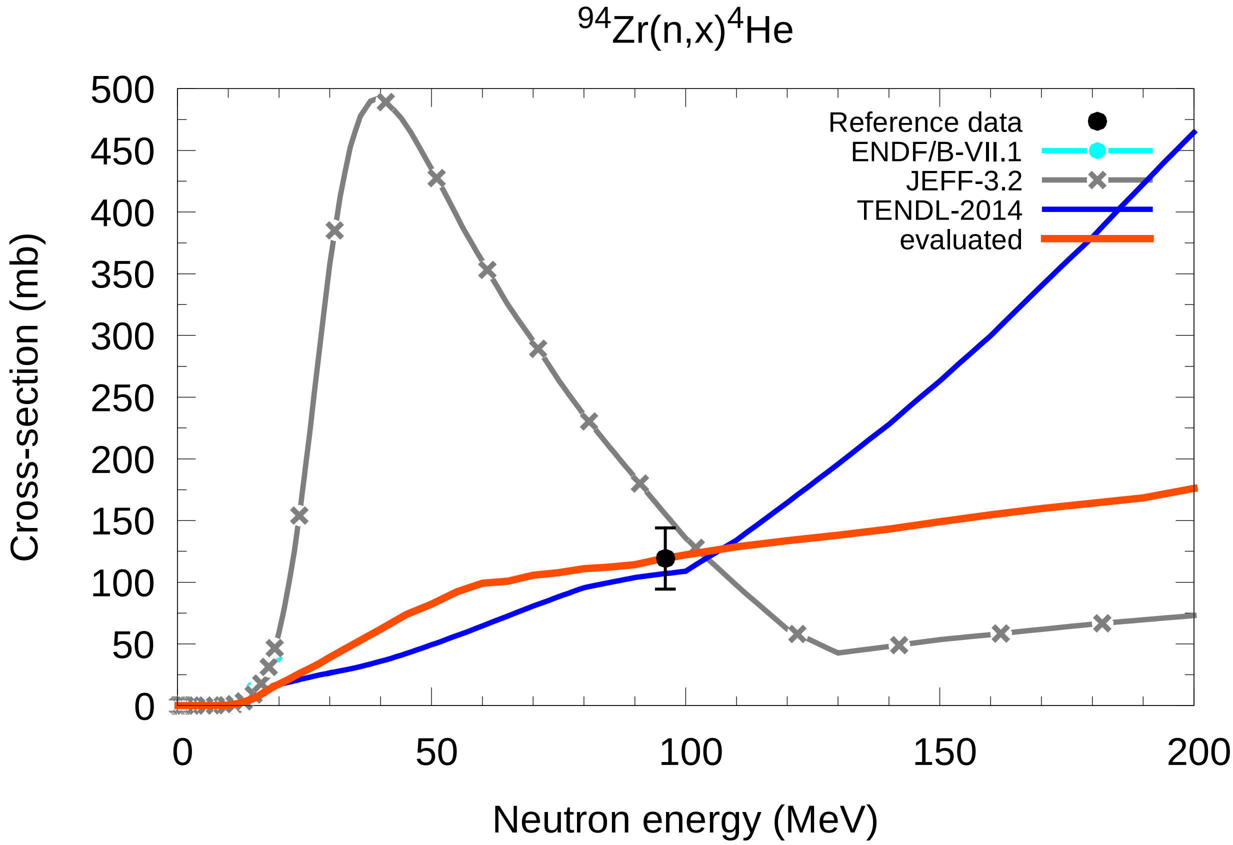
$^{90}Zr(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



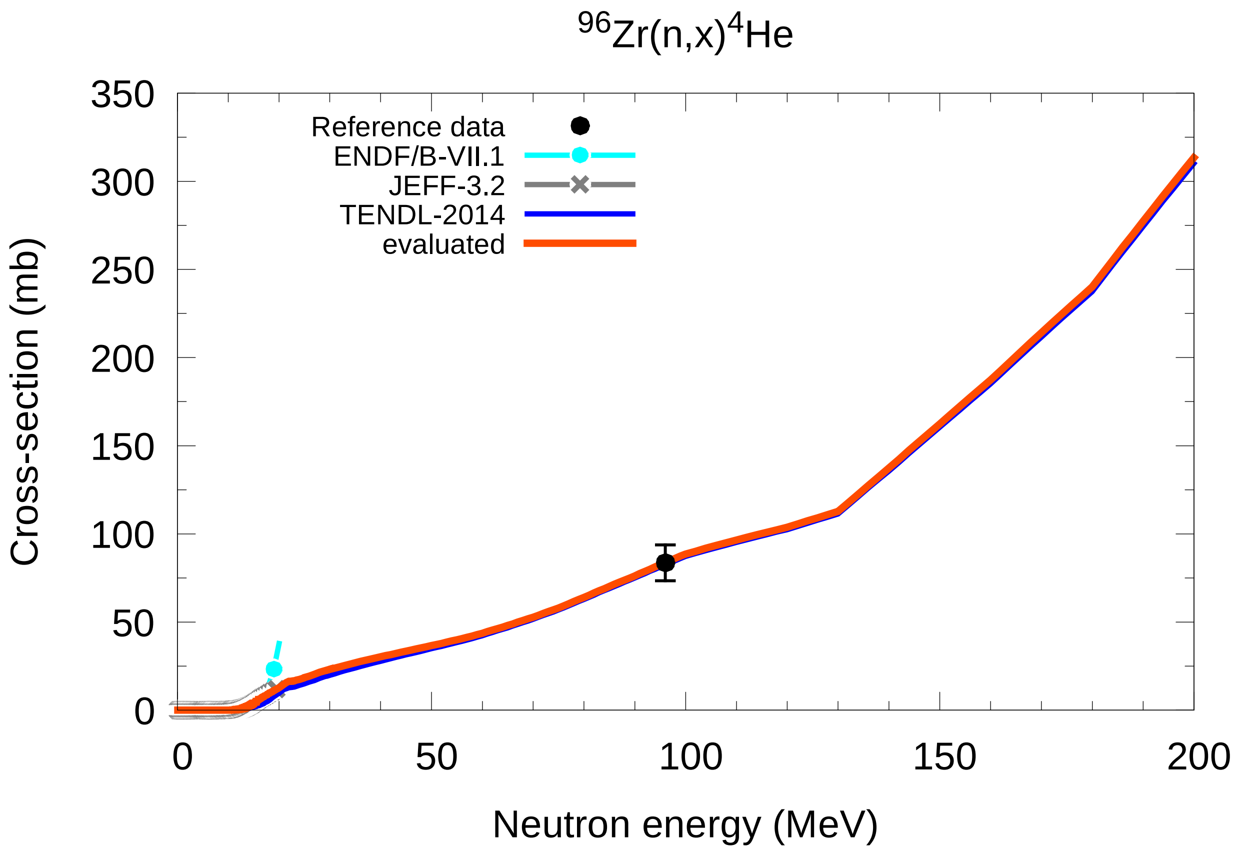
$^{91}Zr(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200



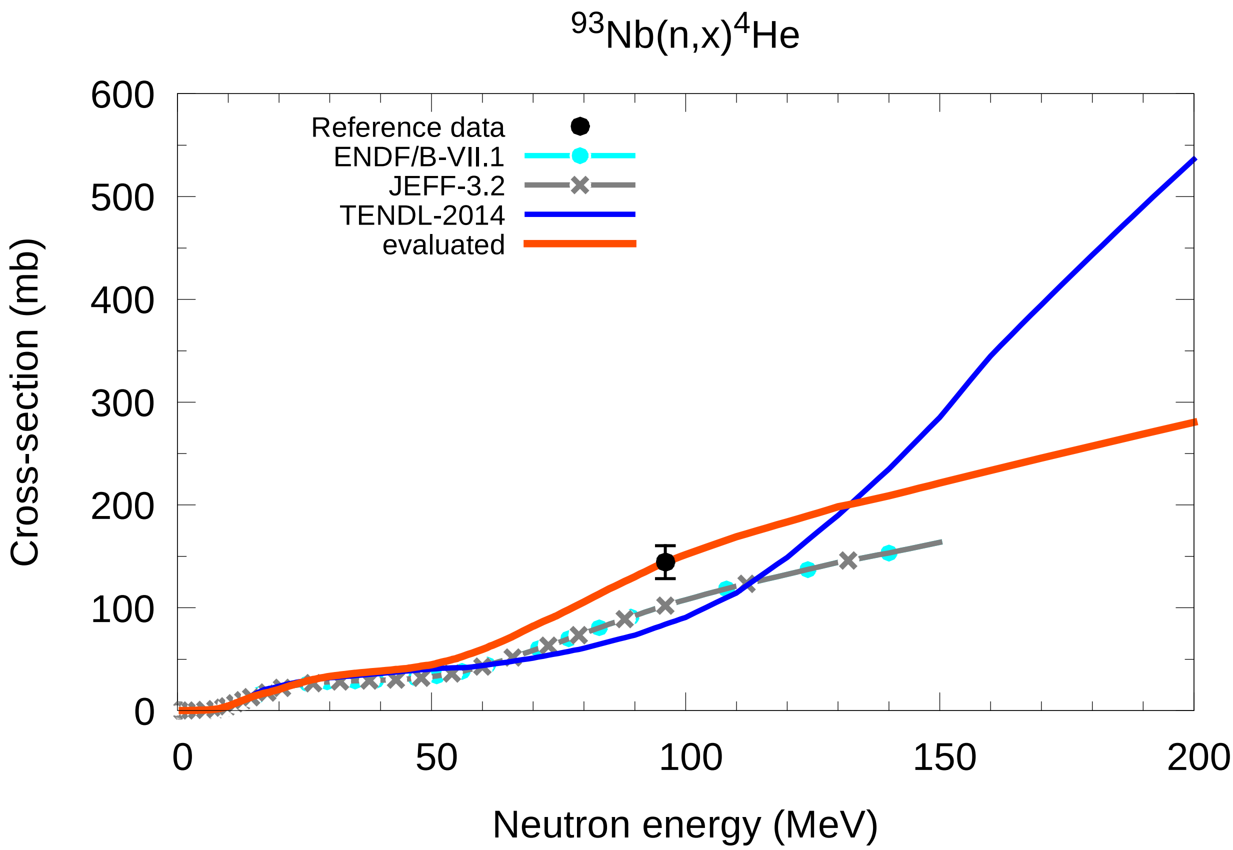
$^{92}Zr(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200



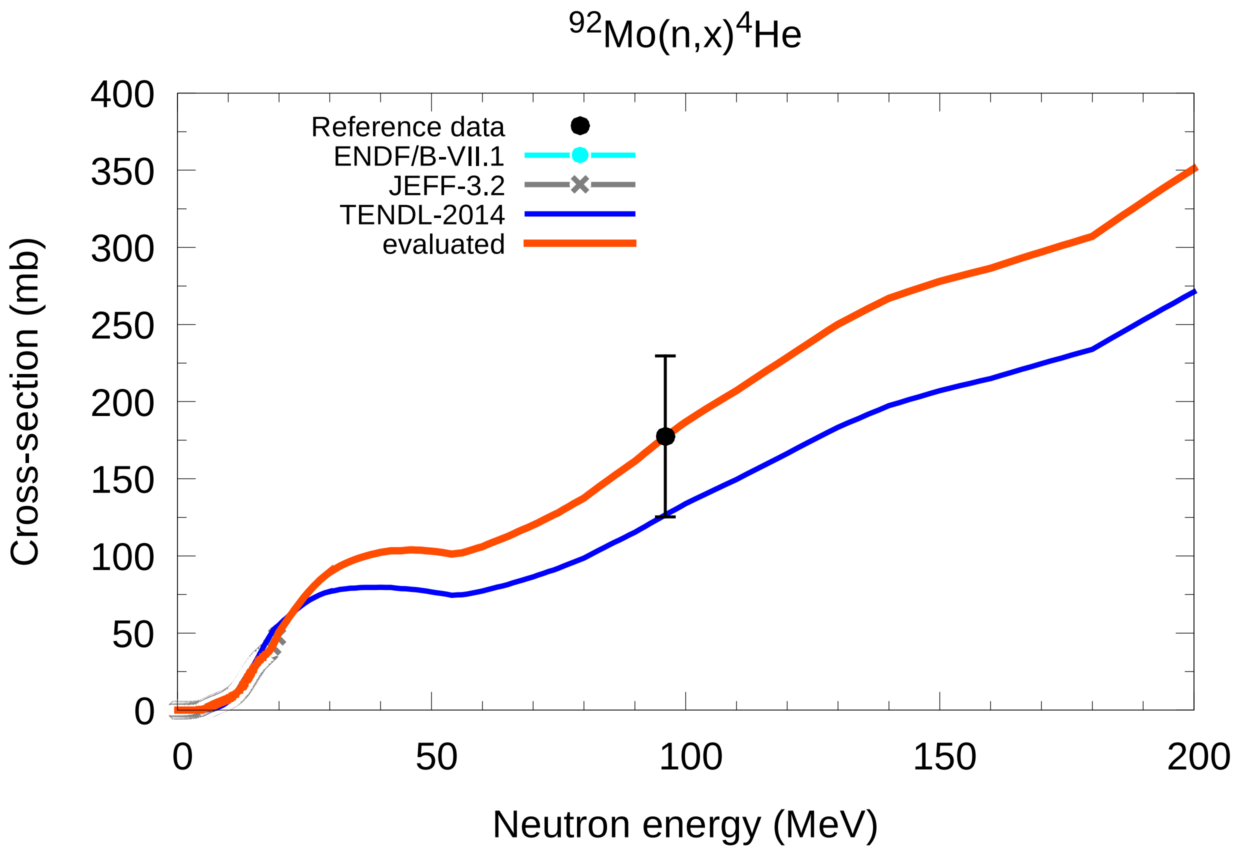
$^{94}Zr(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



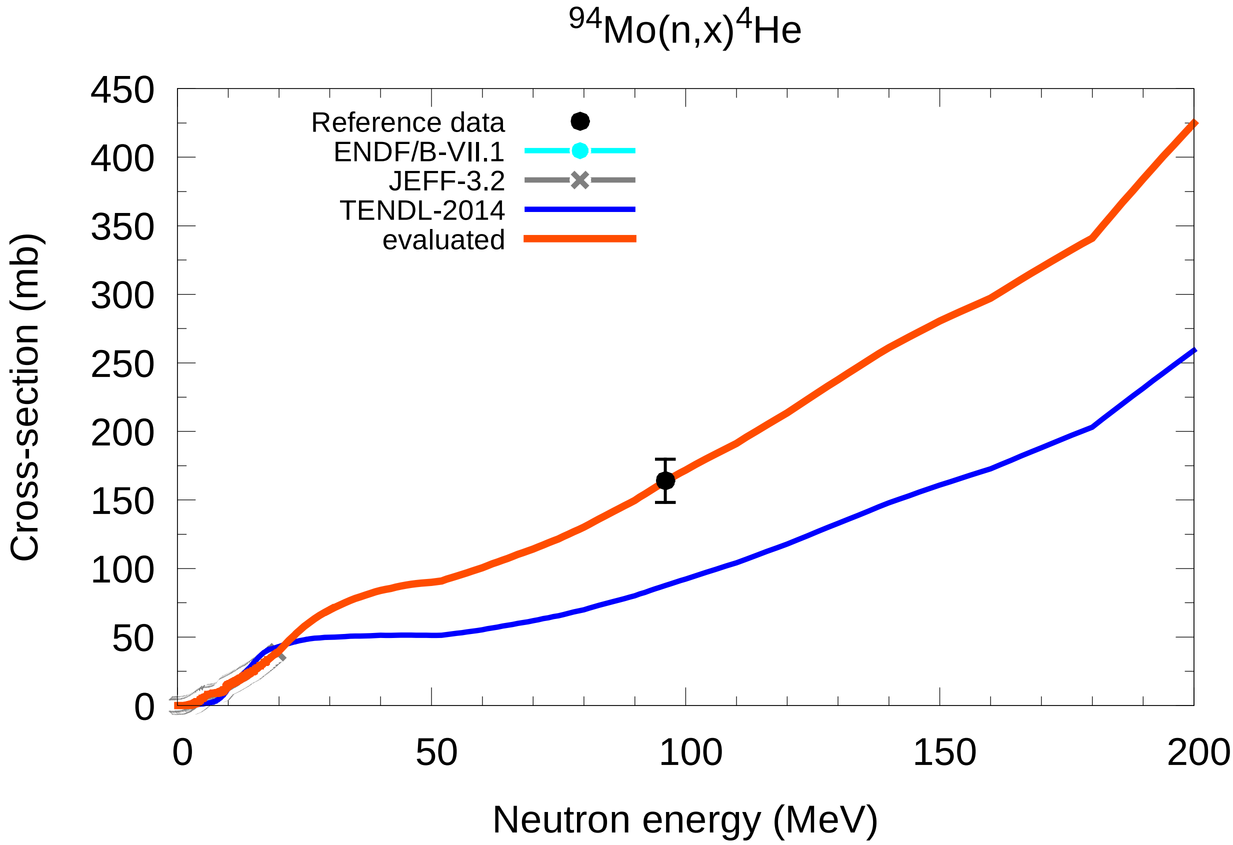
$^{96}Zr(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



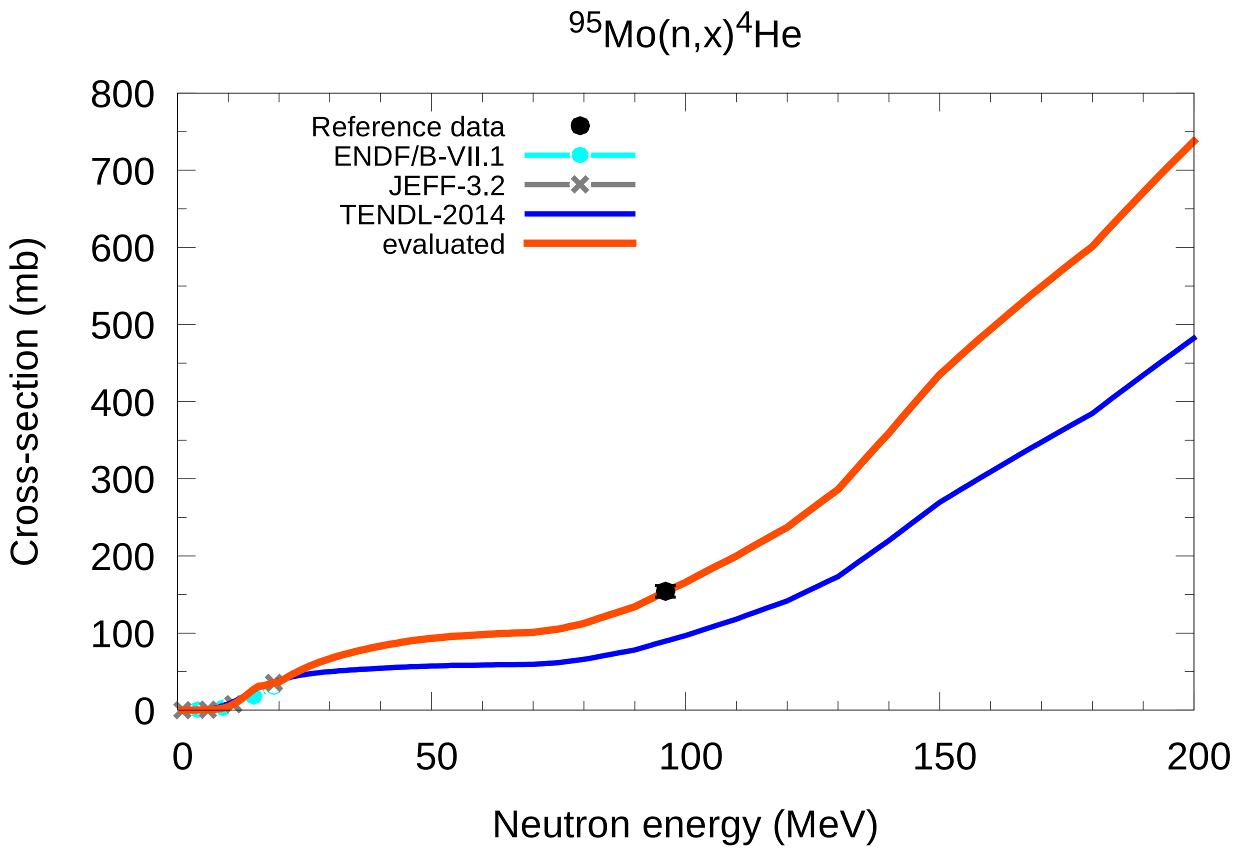
$^{93}Nb(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



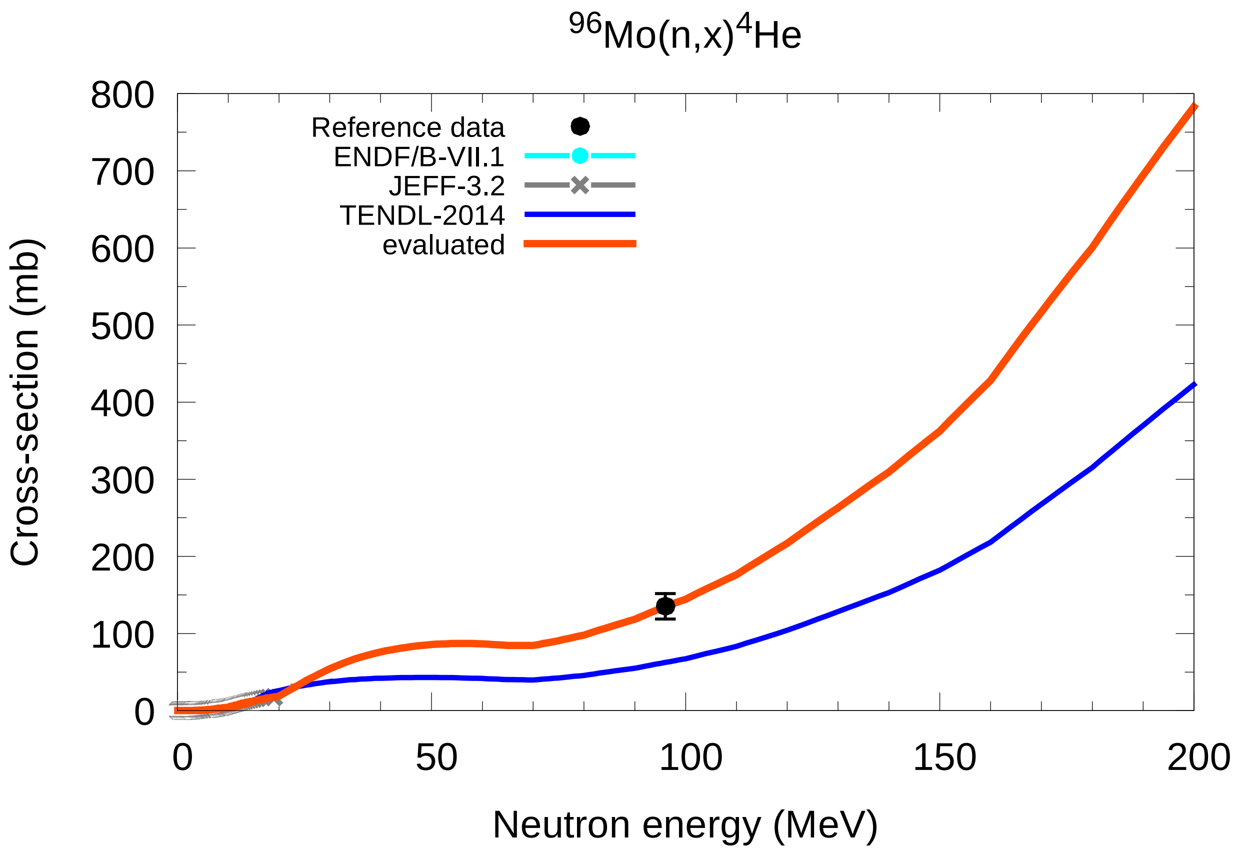
$^{92}Mo(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
0
50
100
150
200

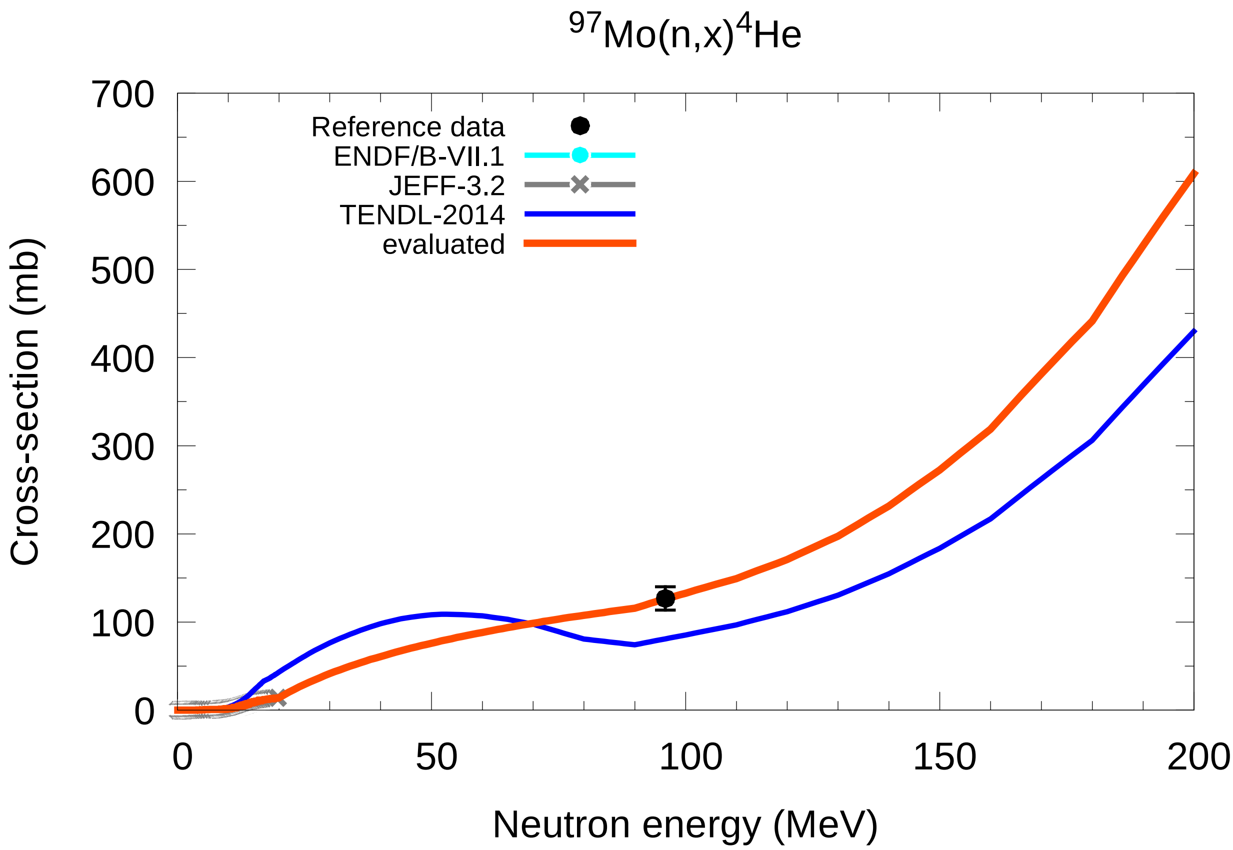


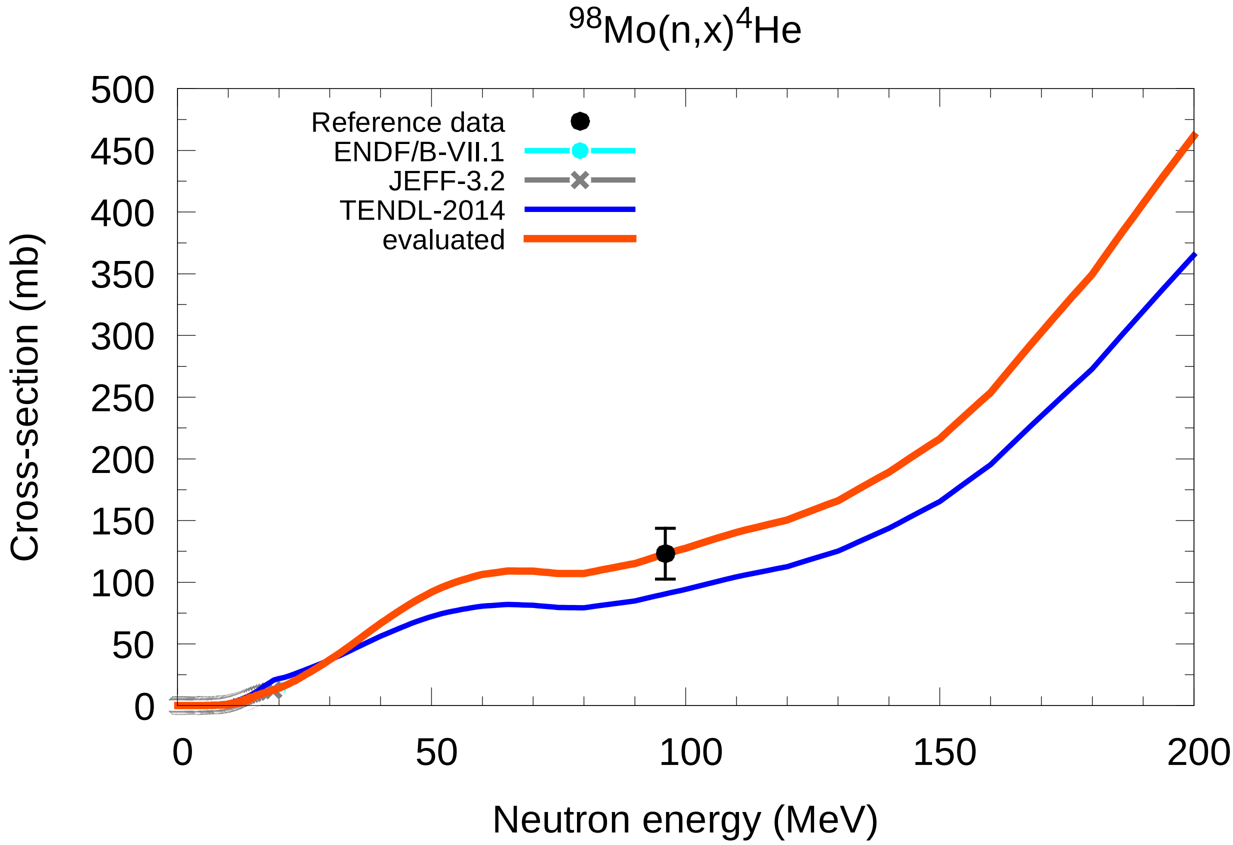
$^{94}Mo(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



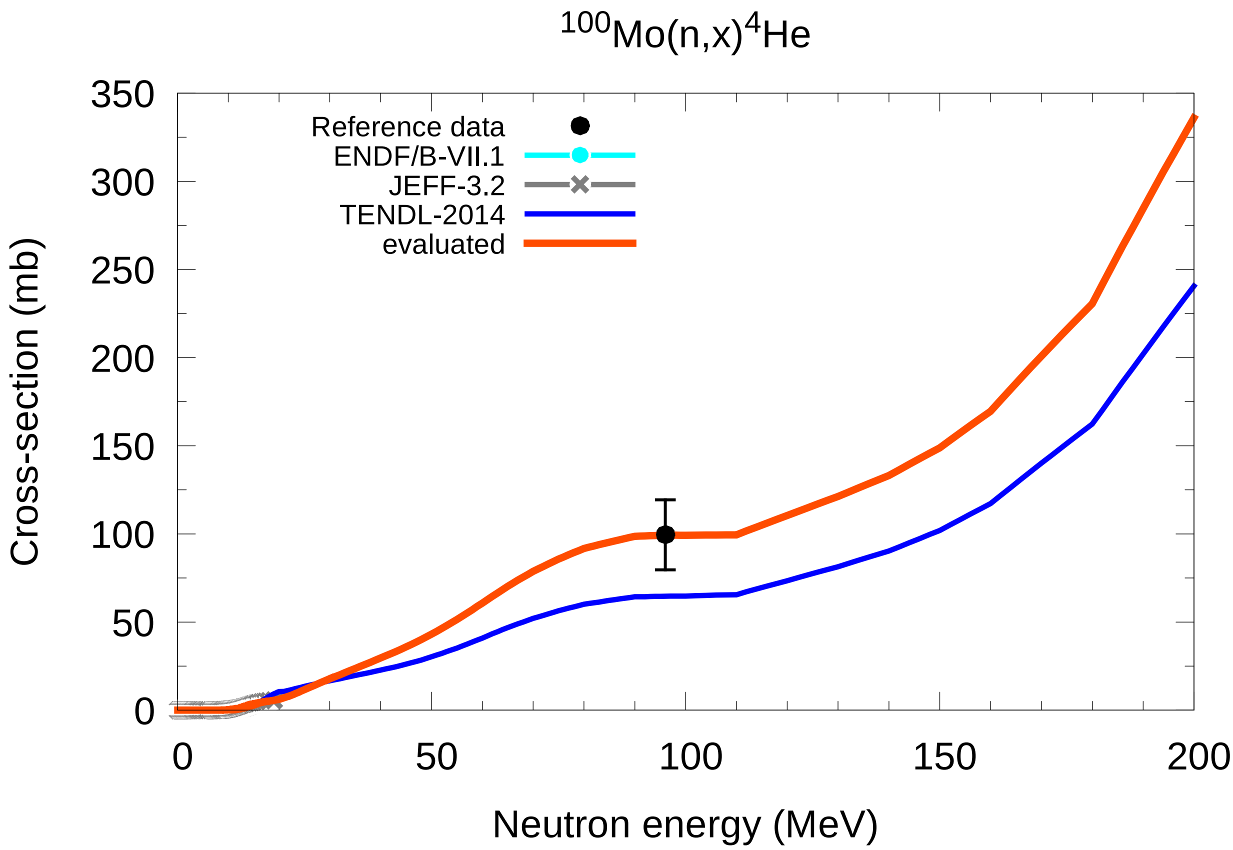
$^{95}Mo(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800


$^{96}Mo(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
0
50
100
150
200

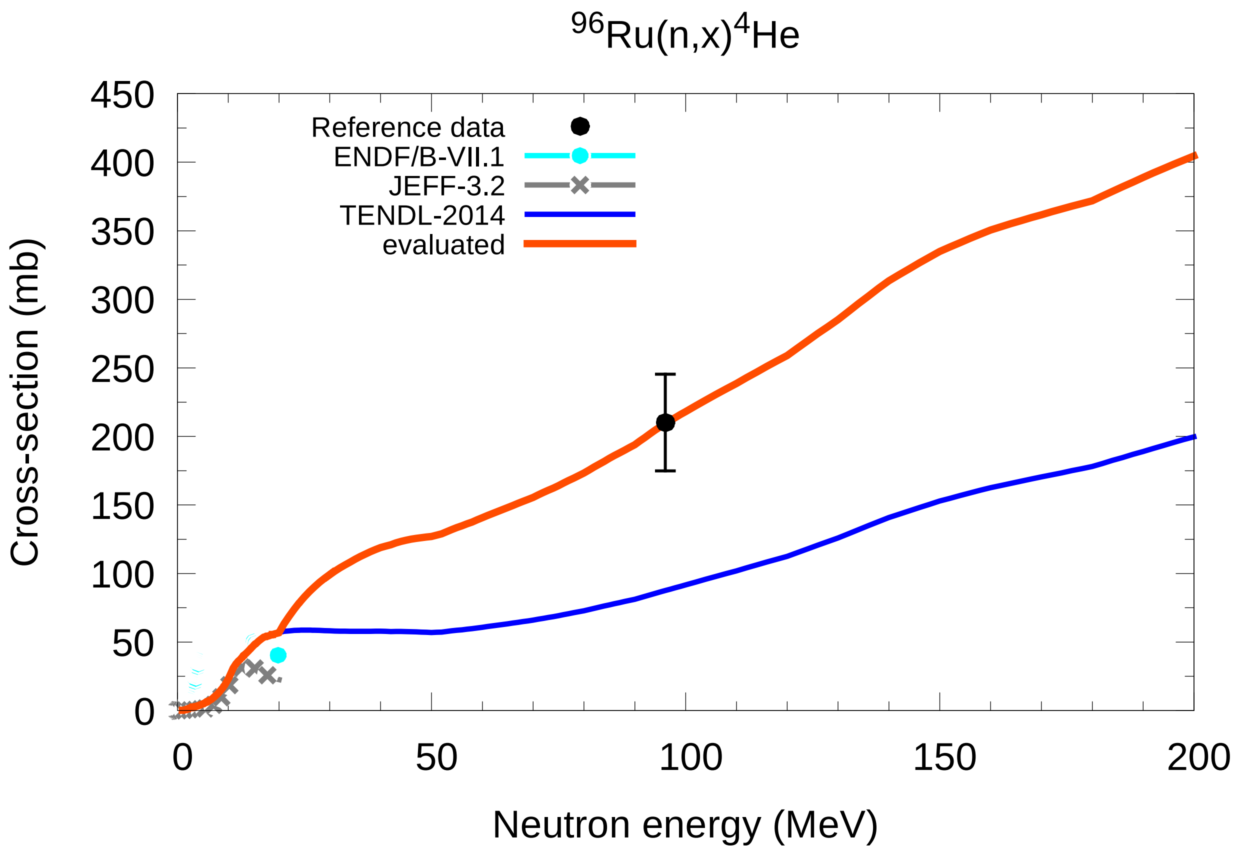

$^{97}Mo(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200



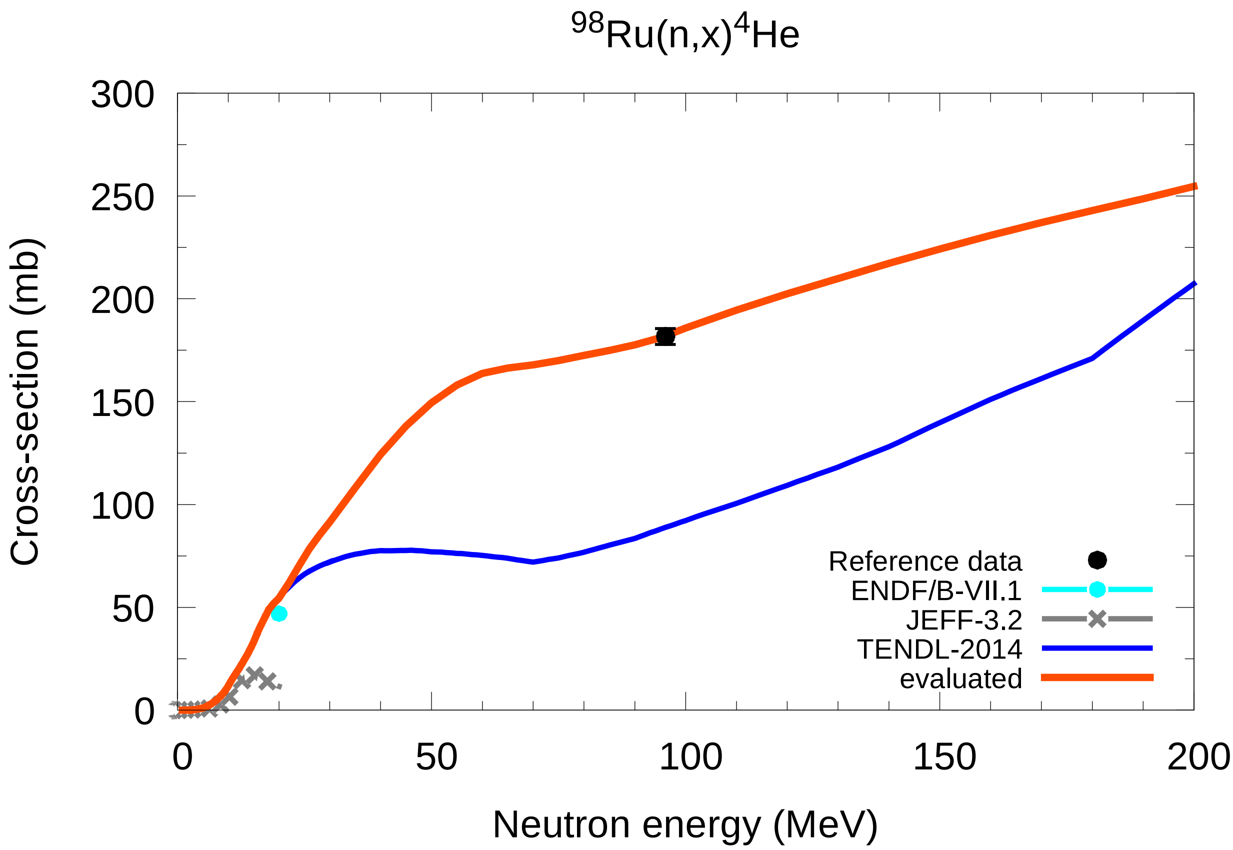
$^{98}Mo(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
0
50
100
150
200
250
300
350
400
450
500
0
50
100
150
200
Neutron energy (MeV)



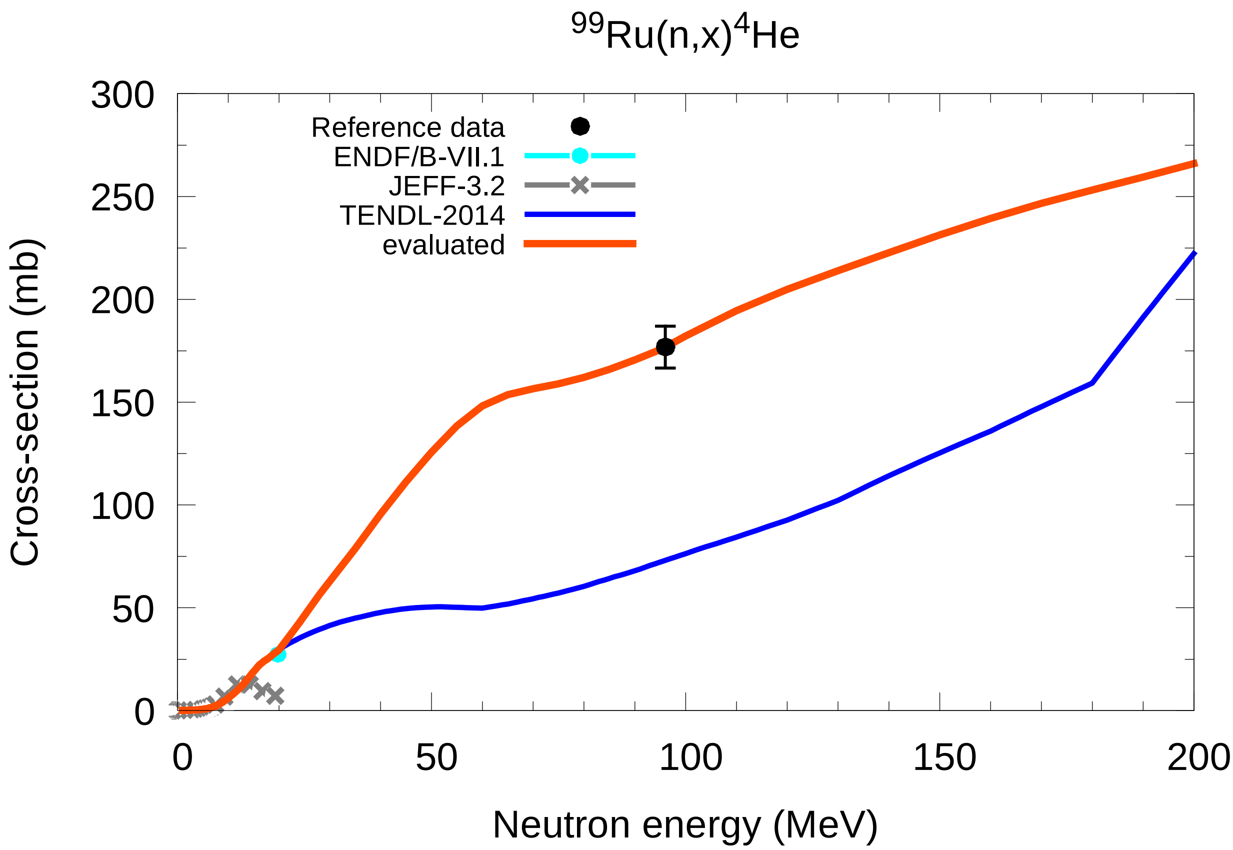
$^{100}Mo(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
0
50
100
150
200
250
300
350
0
50
100
150
200
Neutron energy (MeV)



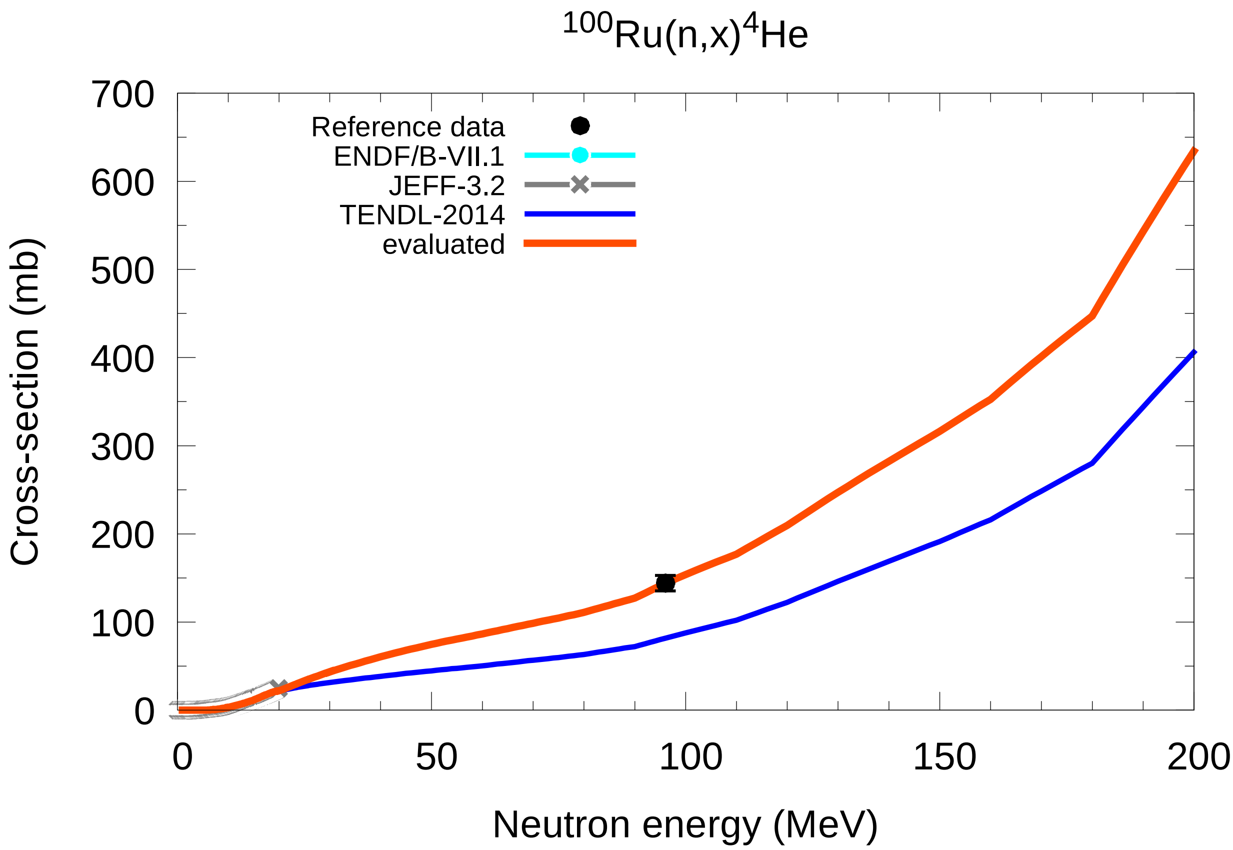
$^{96}Ru(n,x)^4He$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300
350
400
450



$^{98}Ru(n,x)^4He$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300

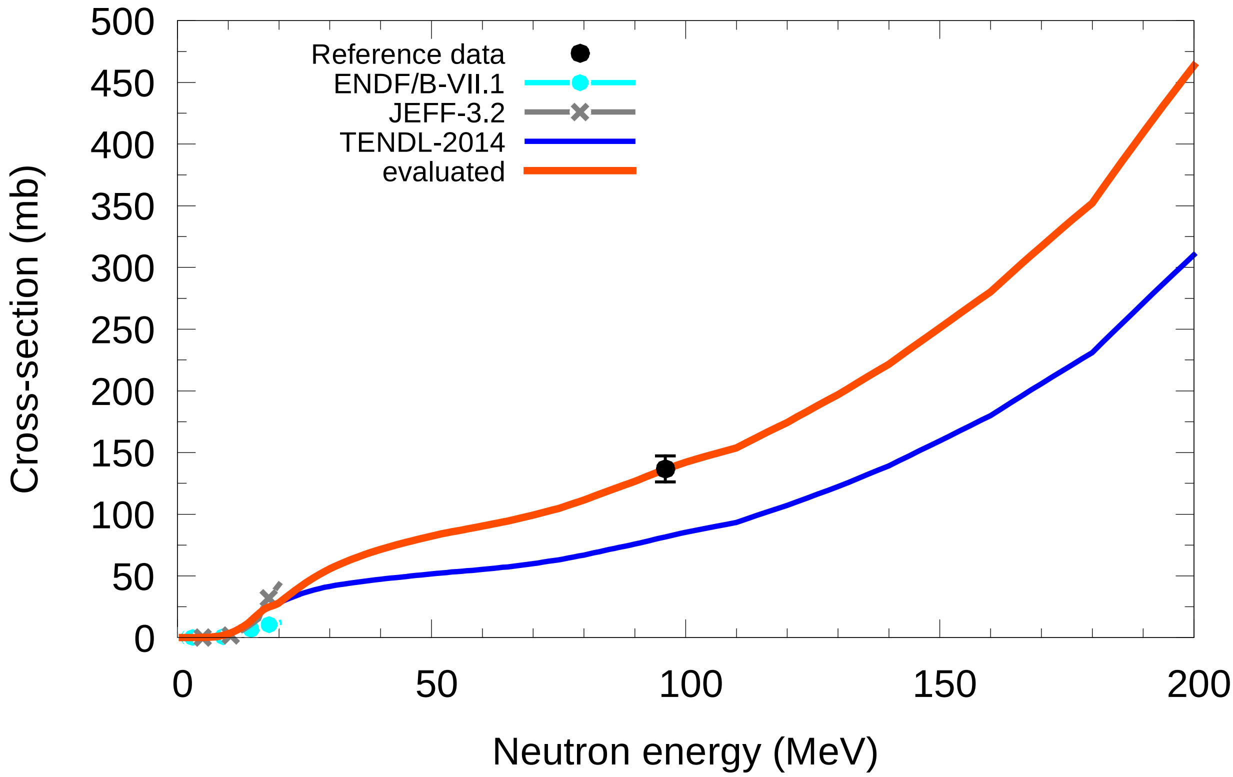


$^{99}Ru(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300

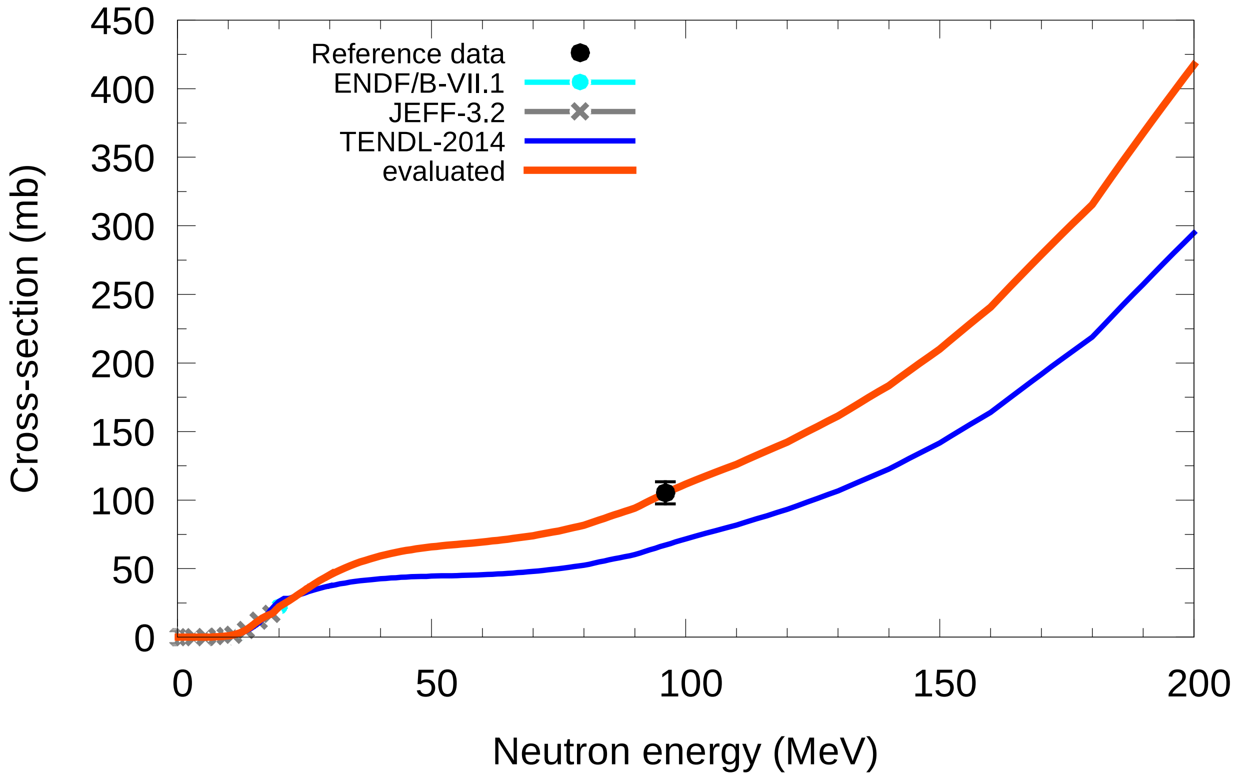


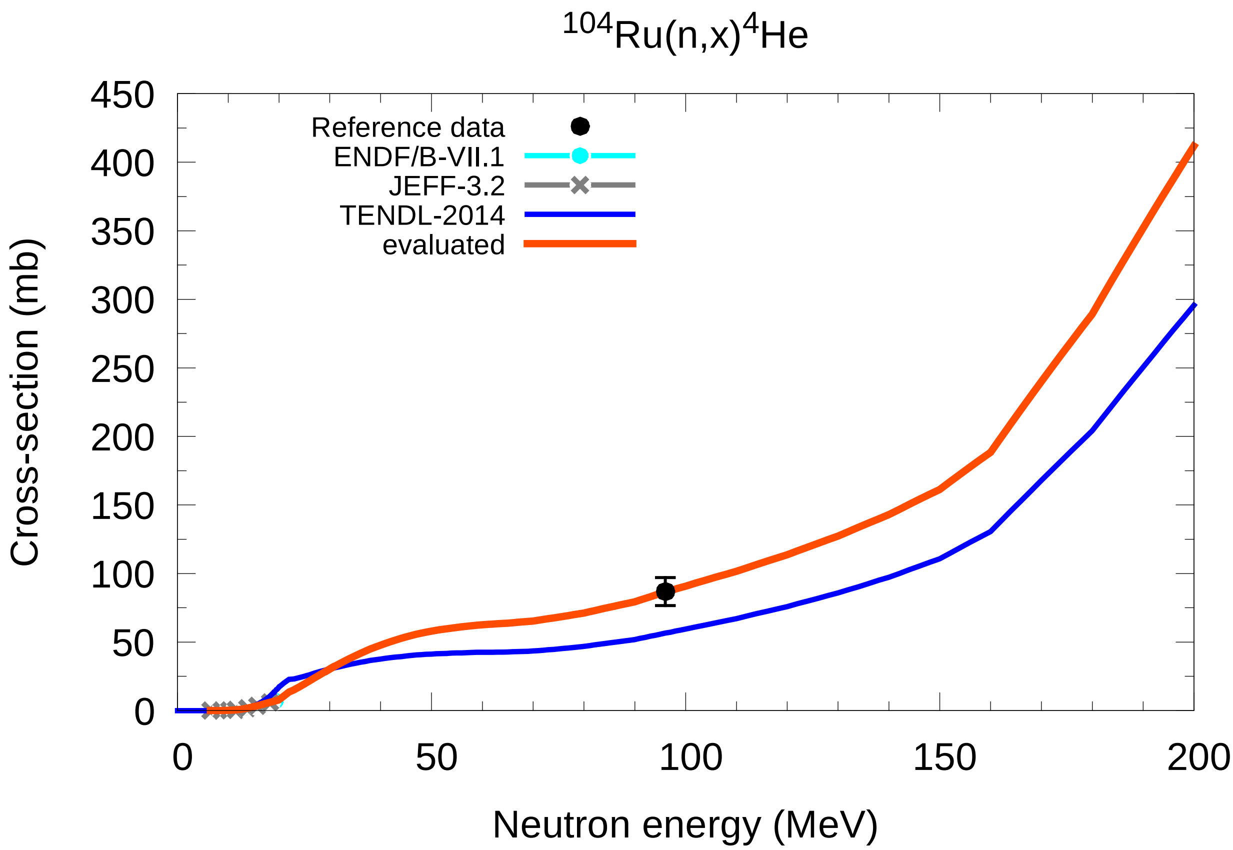
$^{100}Ru(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
300
400
500
600
700

$^{101}Ru(n,x)^4He$

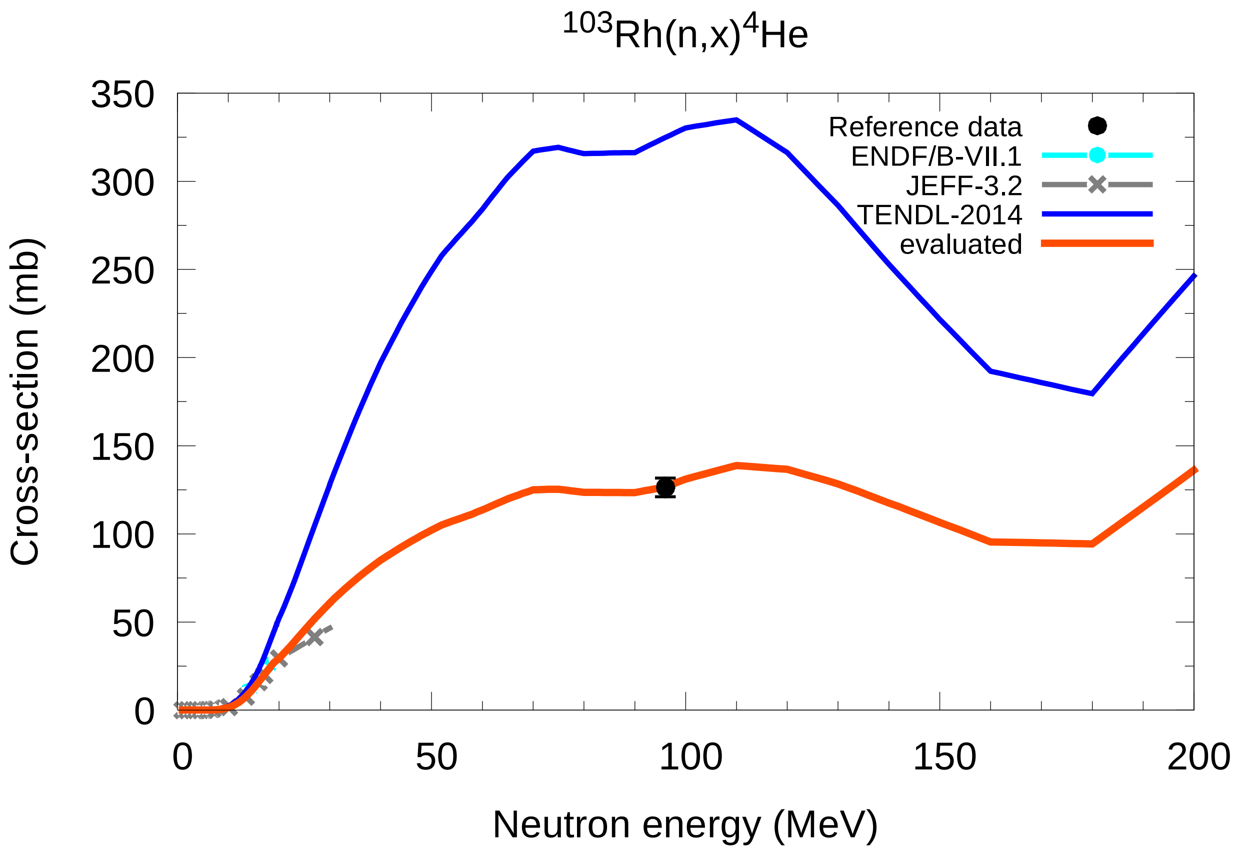


$^{102}Ru(n,x)^4He$

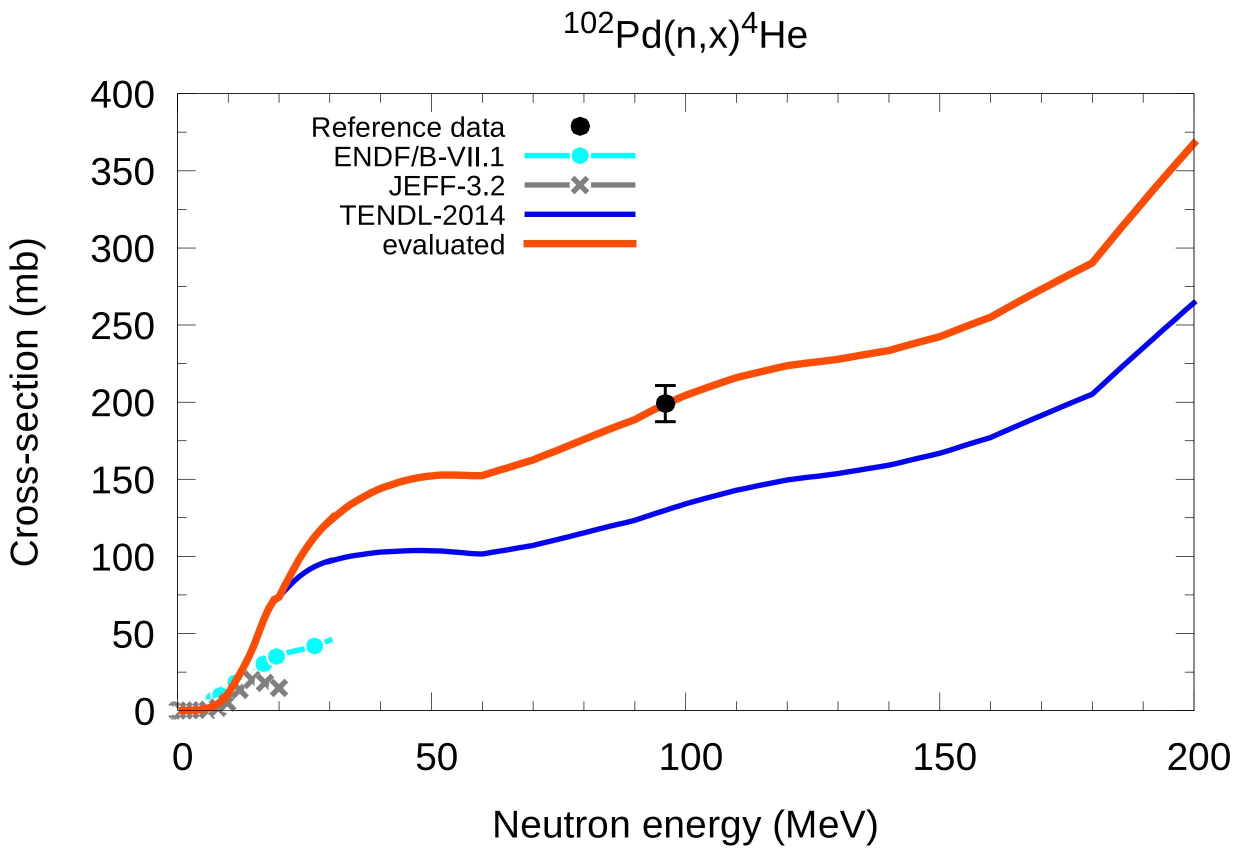




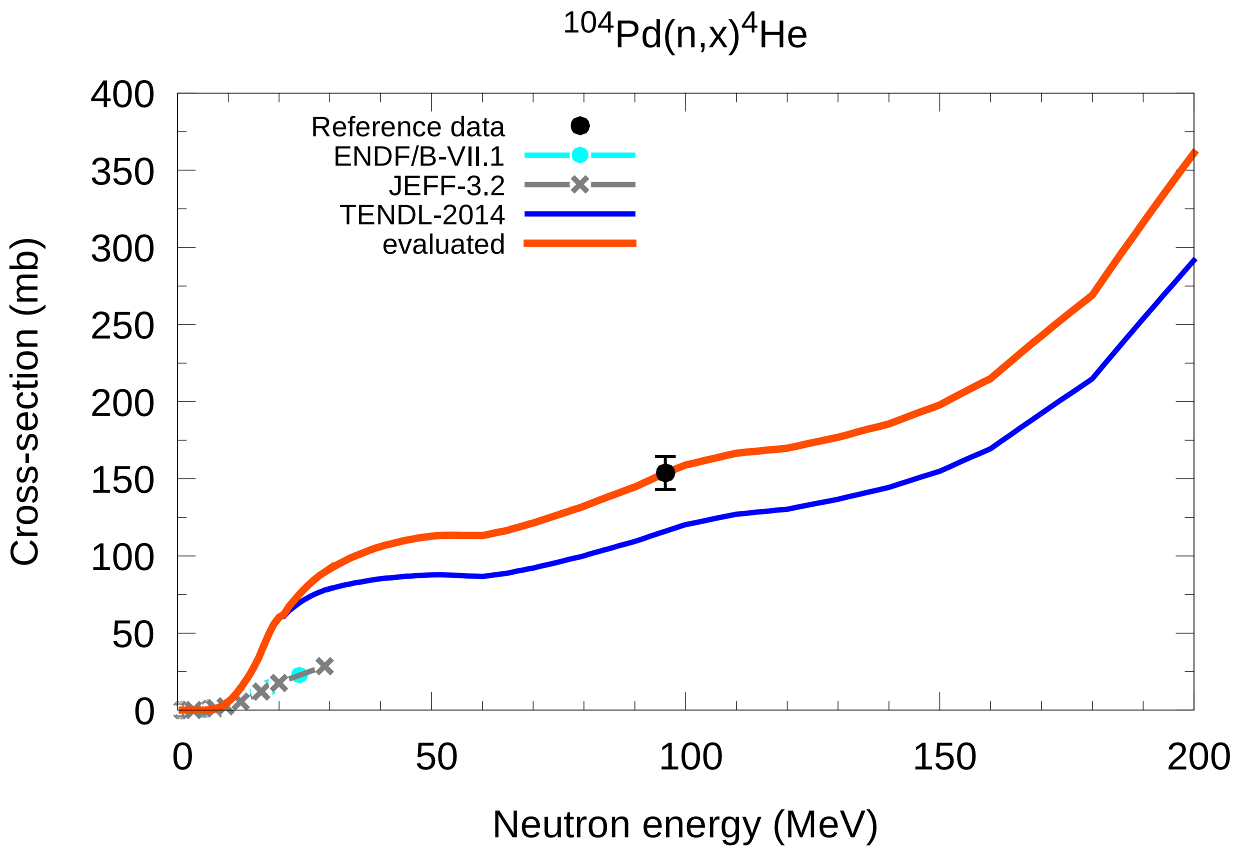
$^{104}Ru(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)



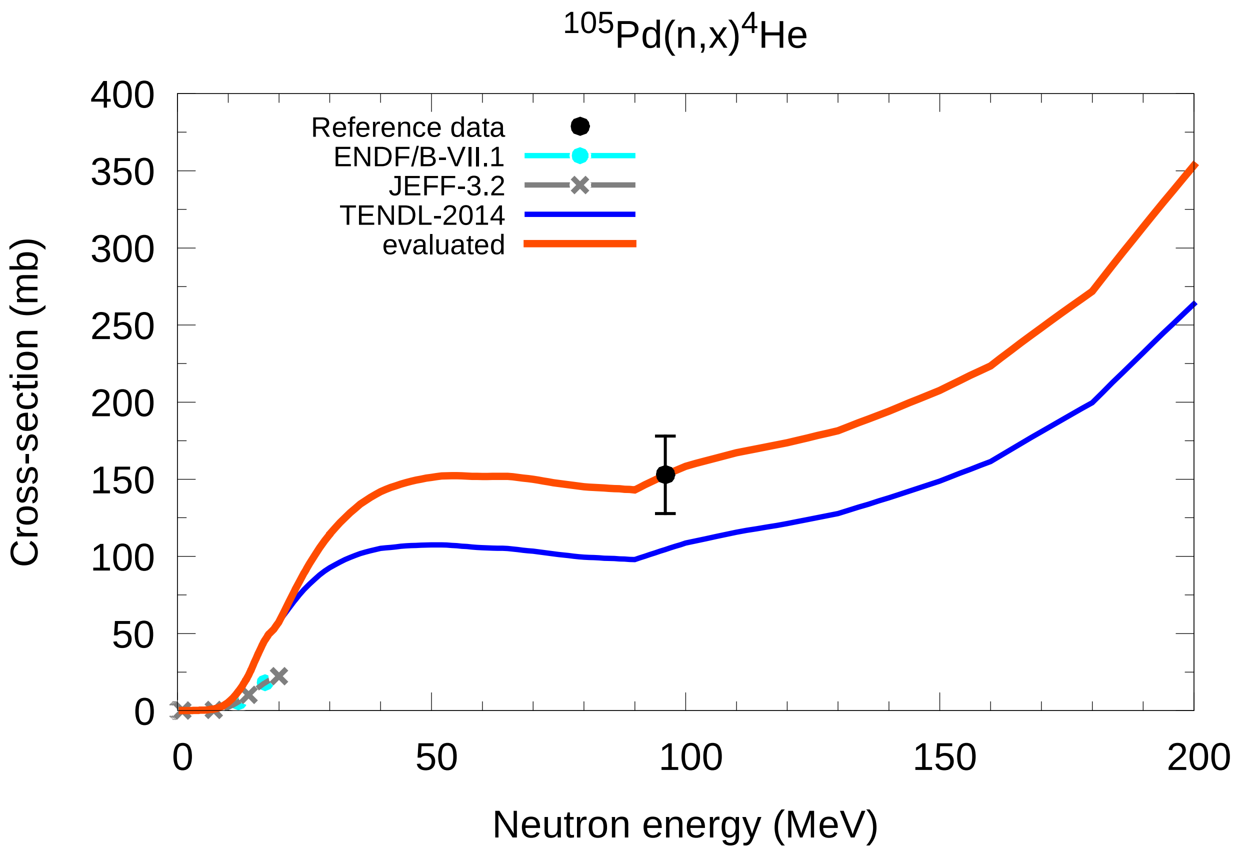
$^{103}Rh(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)



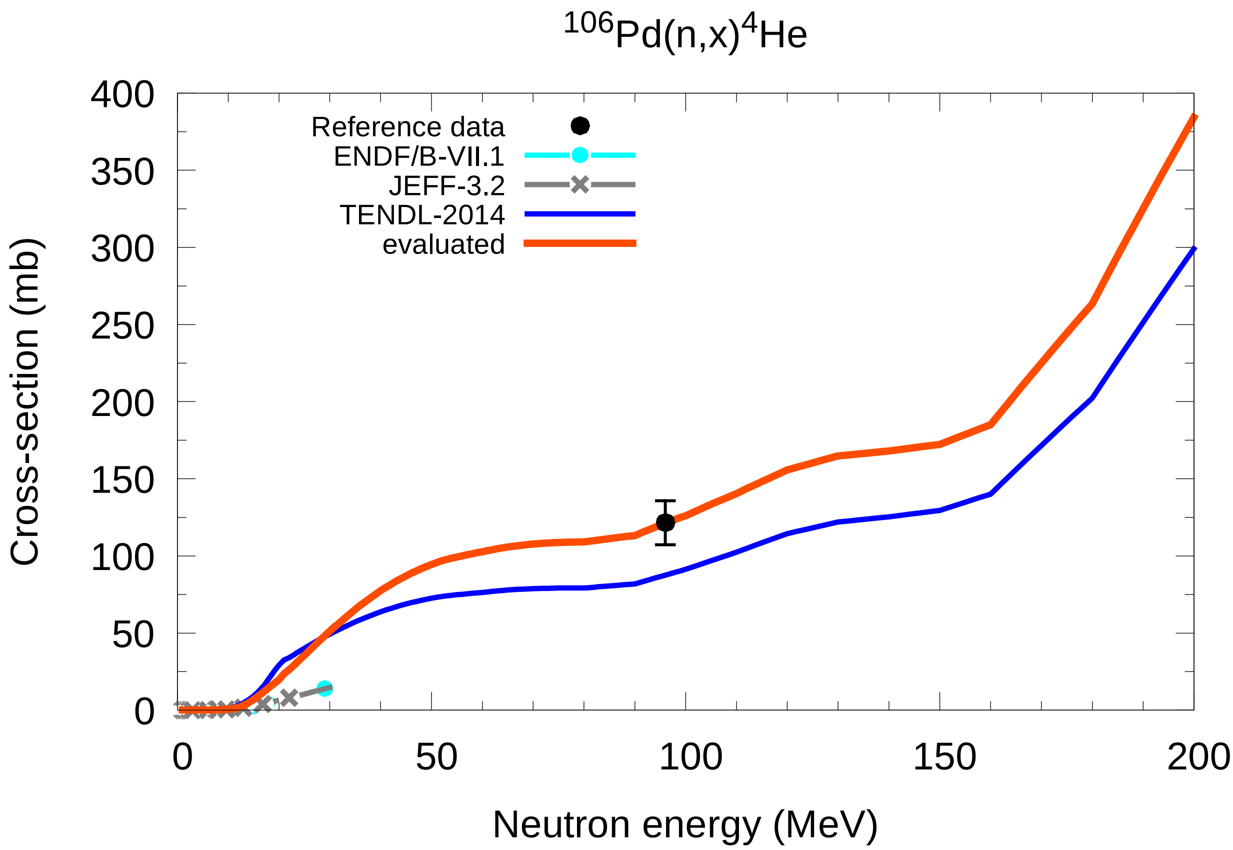
$^{102}Pd(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



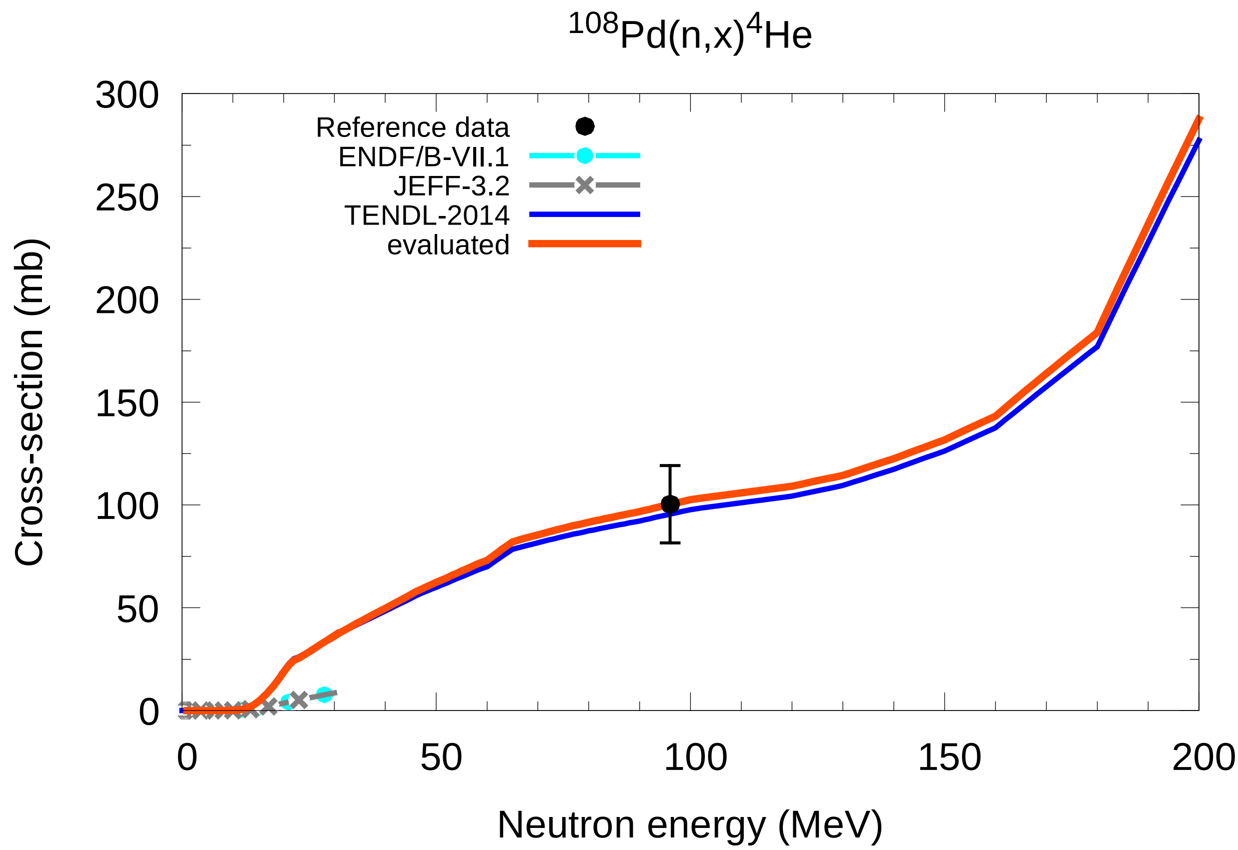
$^{104}Pd(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



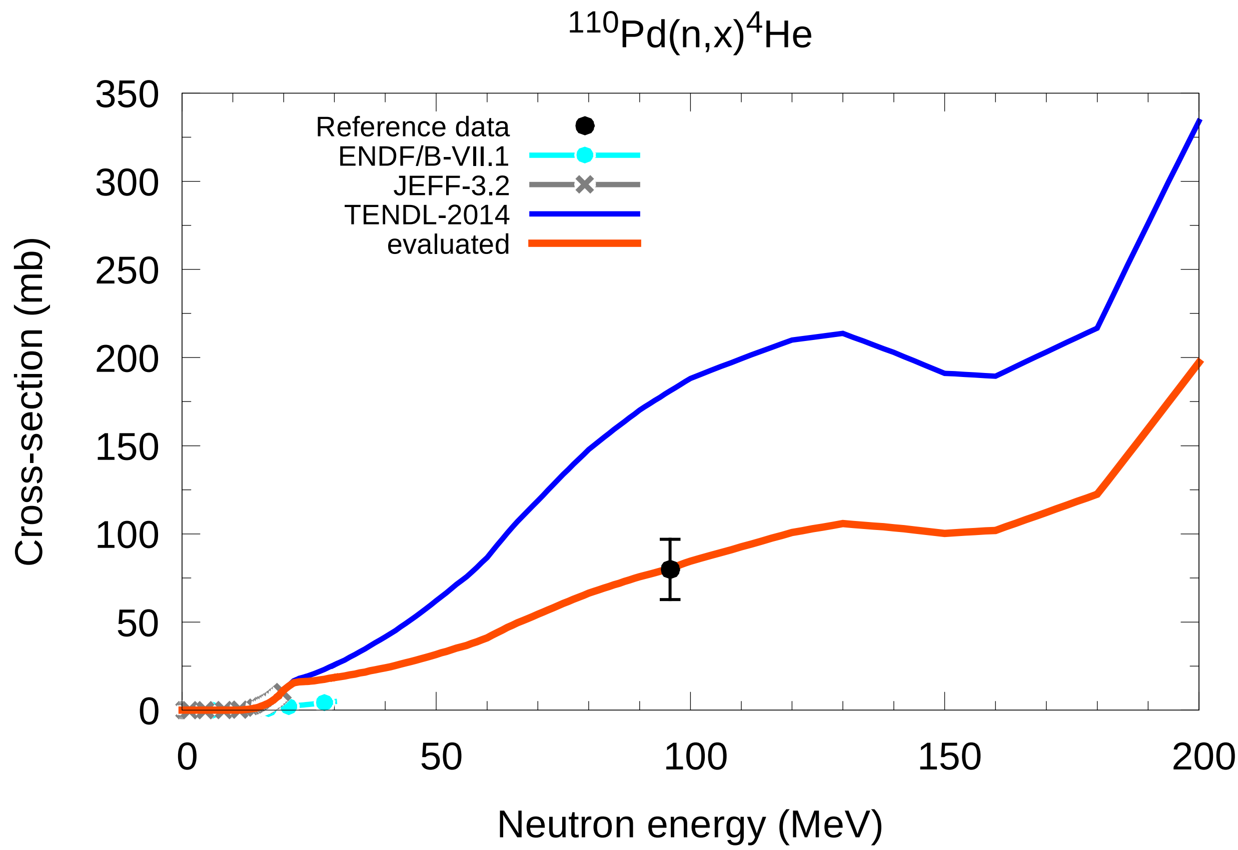
$^{105}Pd(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



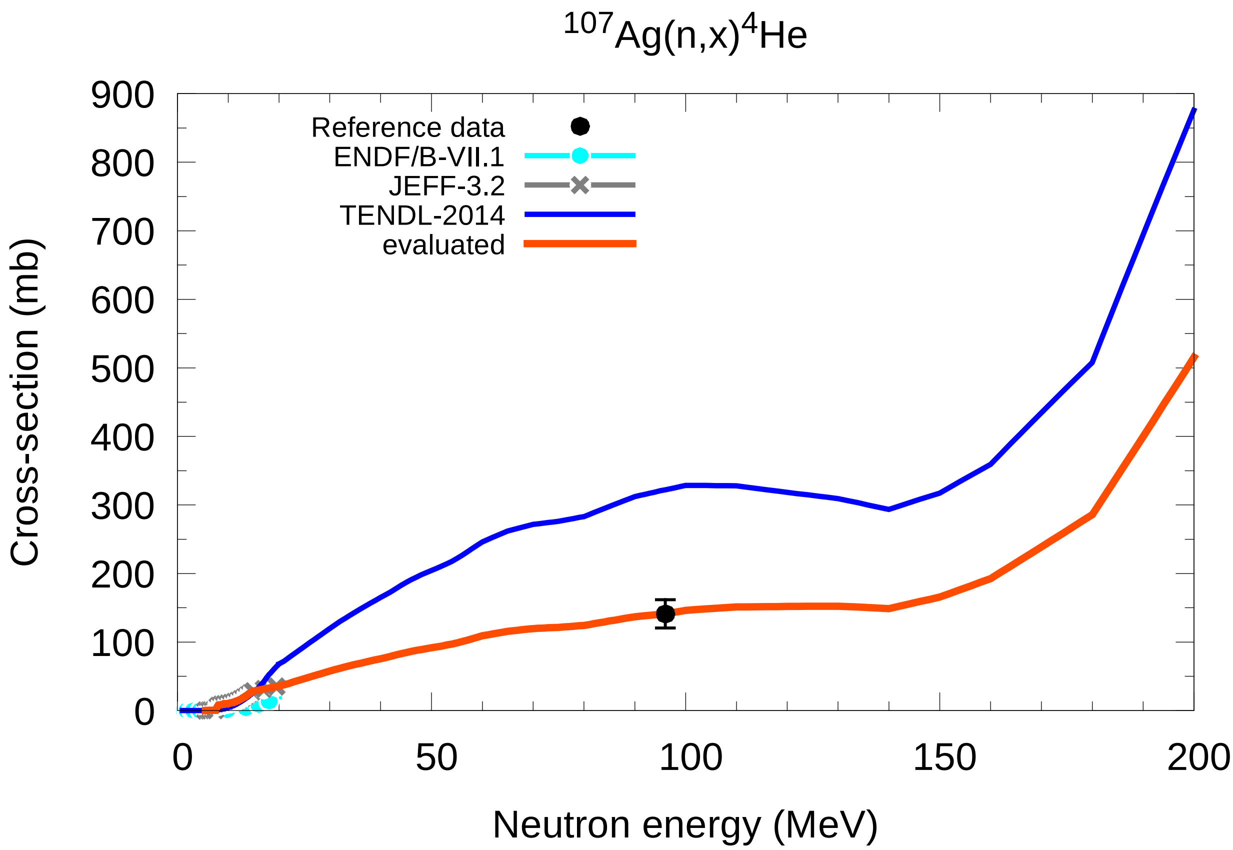
$^{106}Pd(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



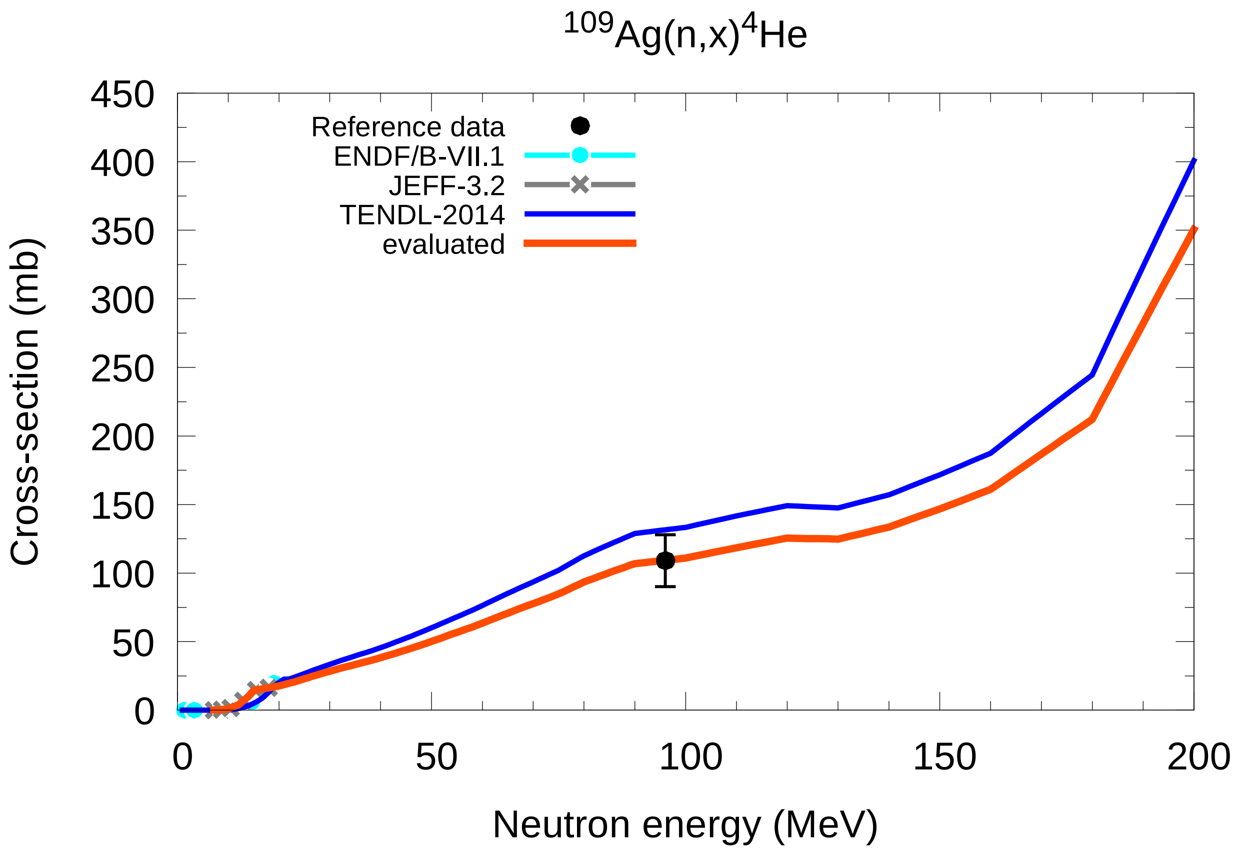
$^{108}Pd(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



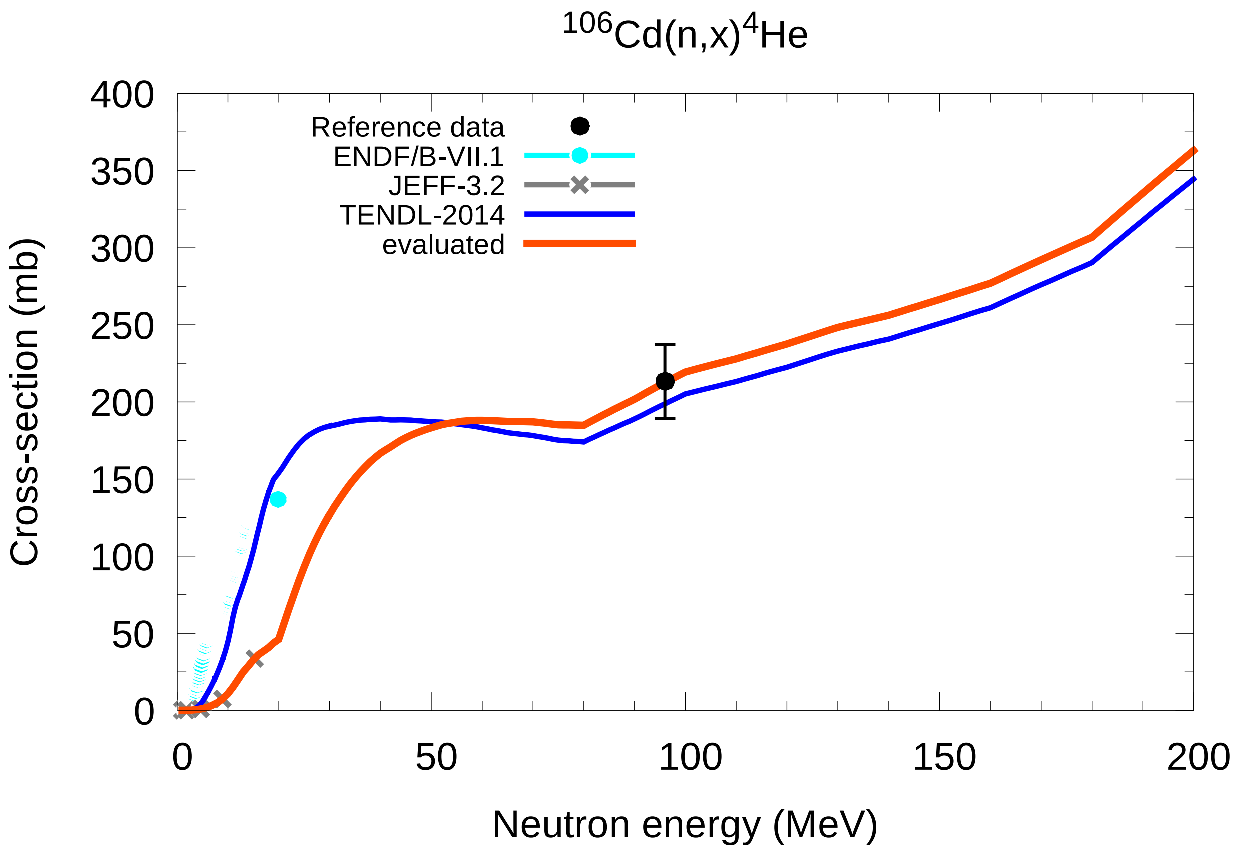
$^{110}Pd(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



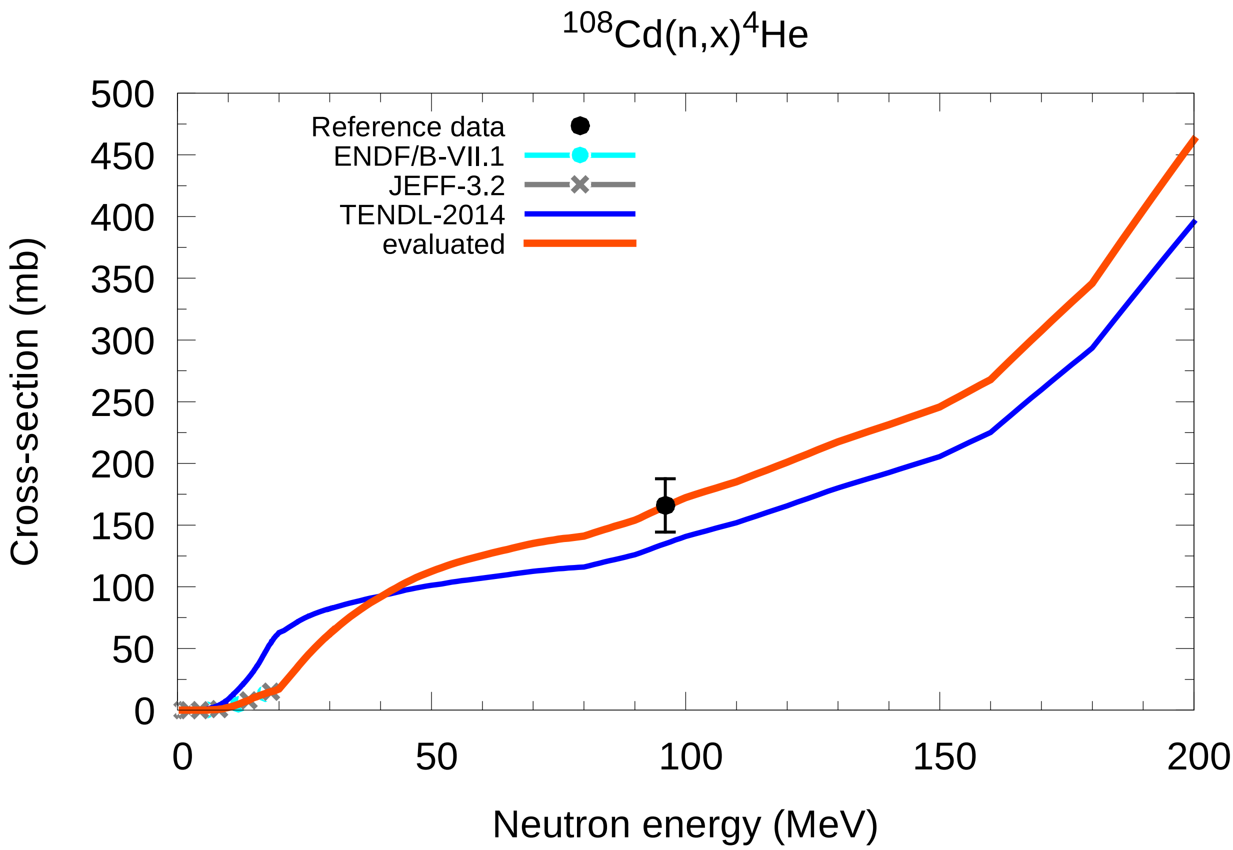
$^{107}Ag(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
0
50
100
150
200



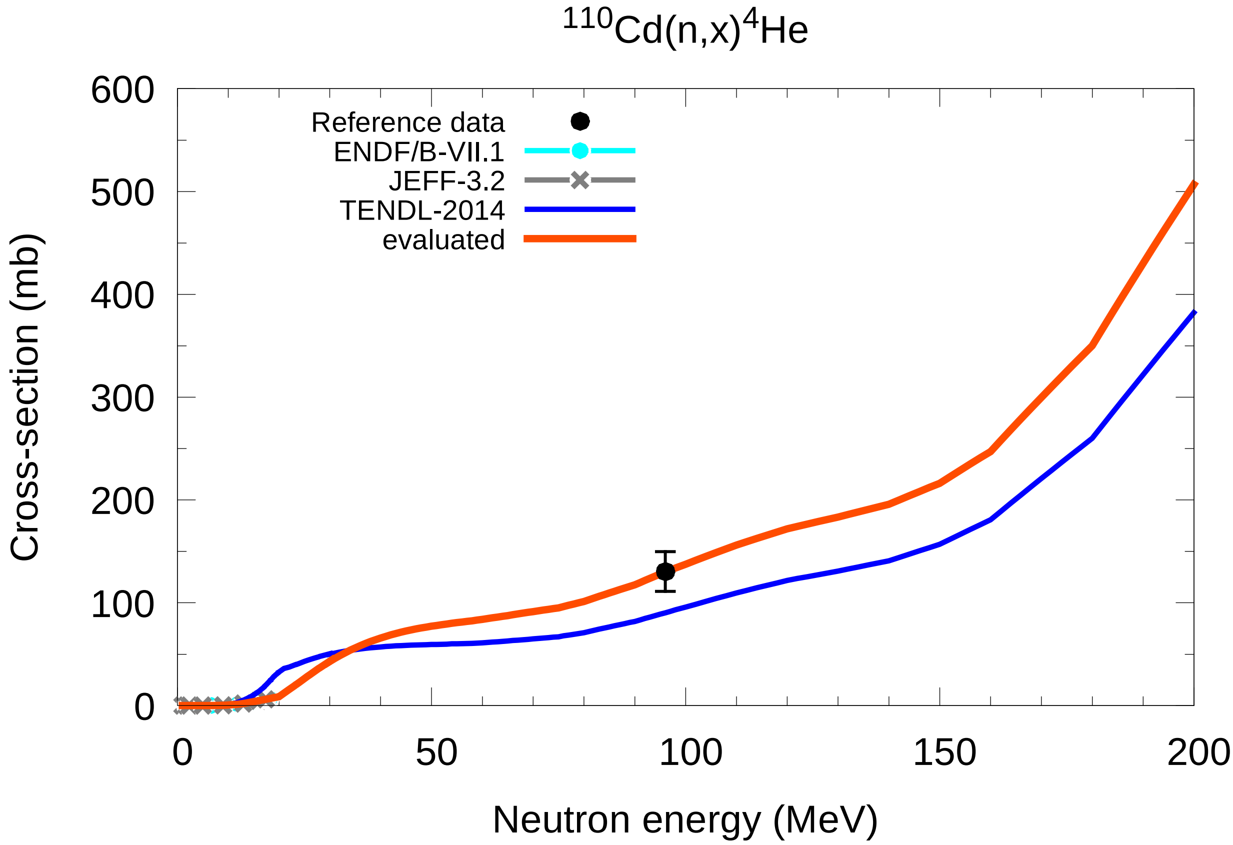
$^{109}Ag(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
0
50
100
150
200

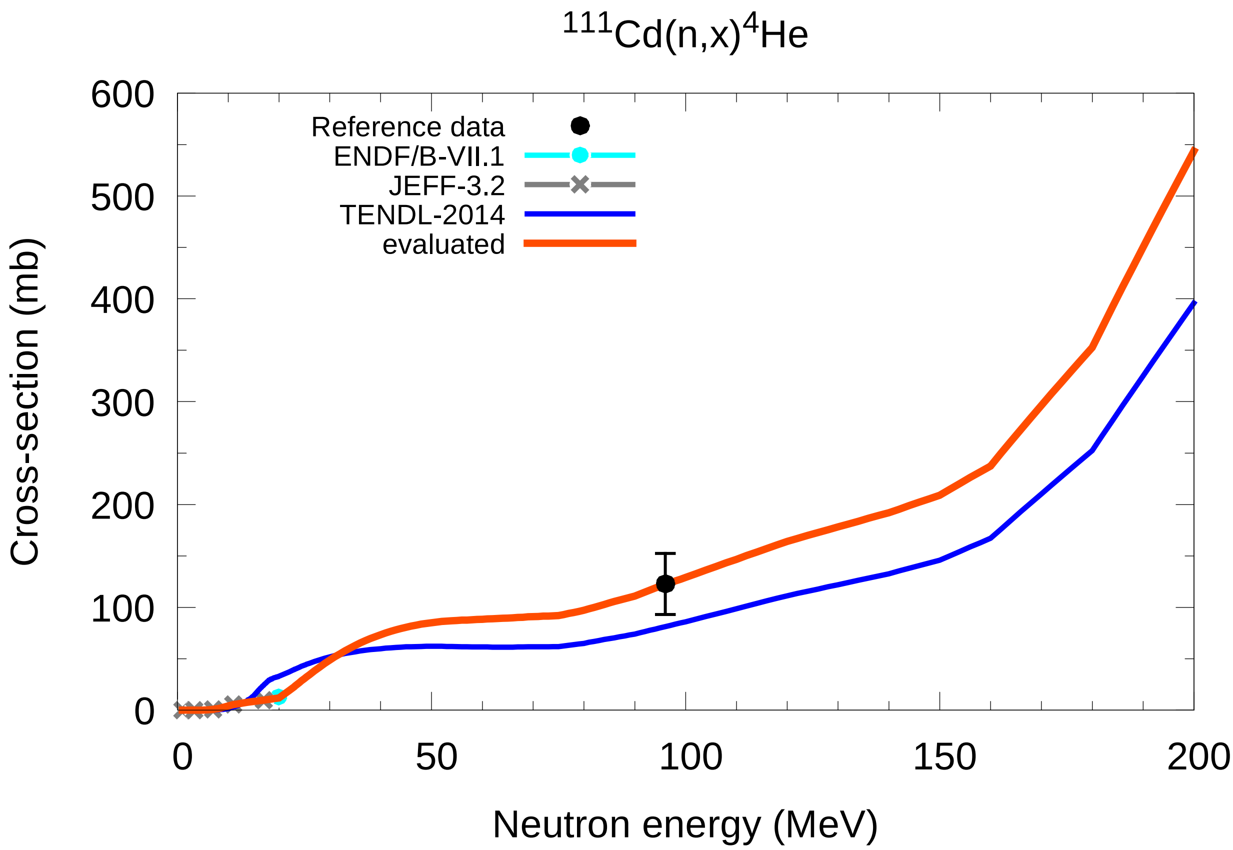


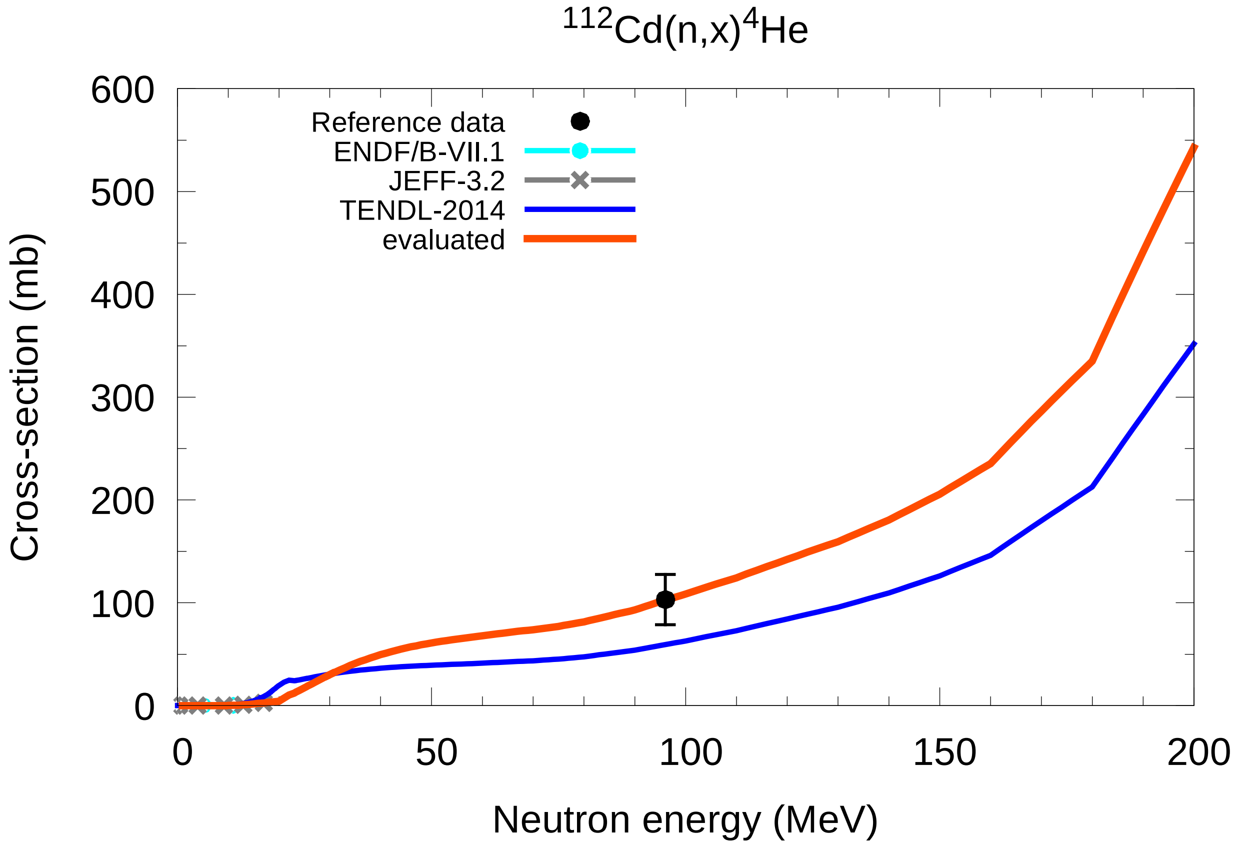
$^{106}Cd(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
0
50
100
150
200



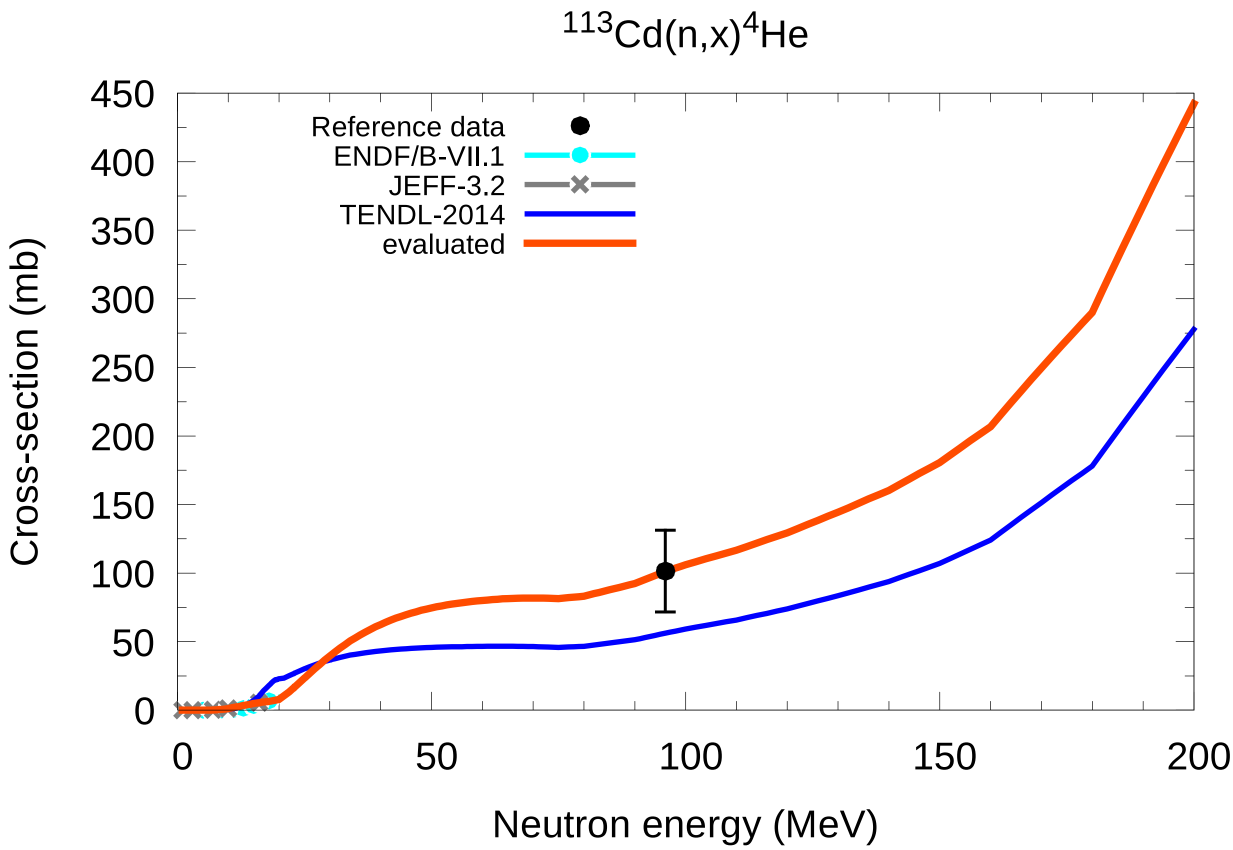
$^{108}Cd(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500
0
50
100
150
200


$^{110}Cd(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200


$^{111}Cd(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200

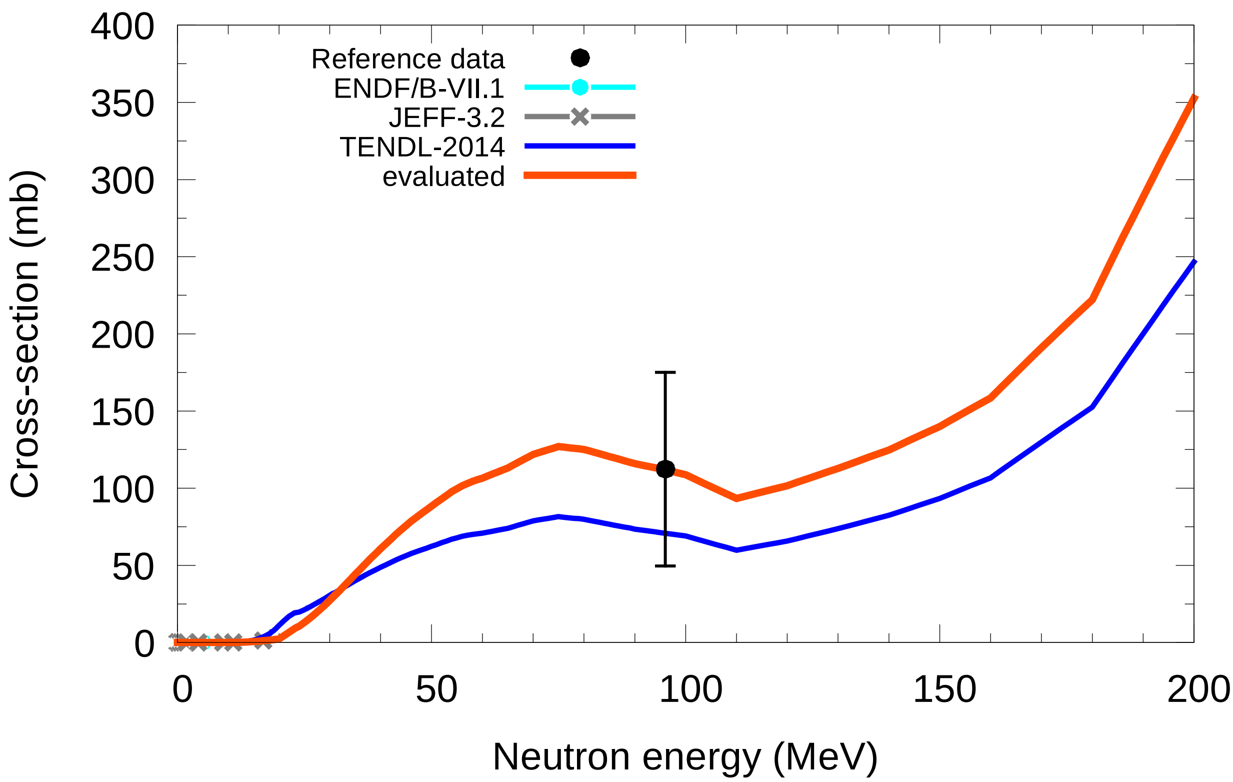


$^{112}Cd(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200

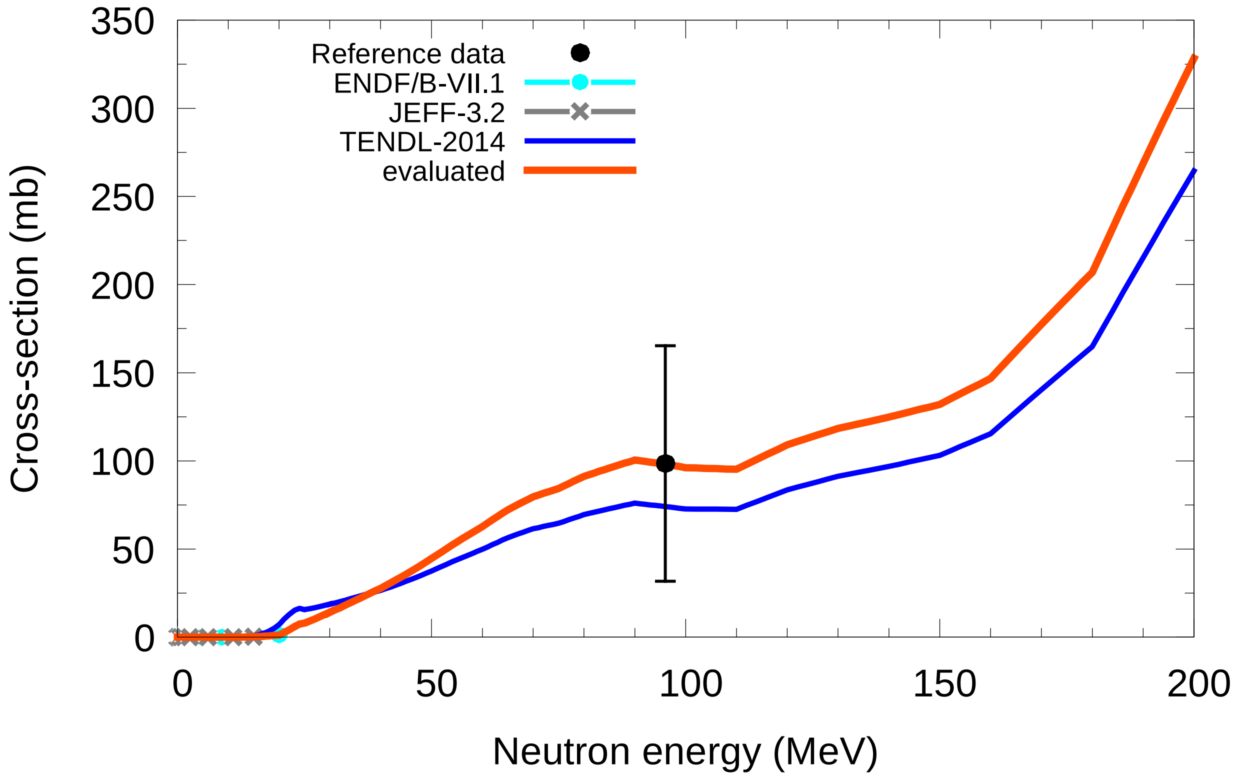


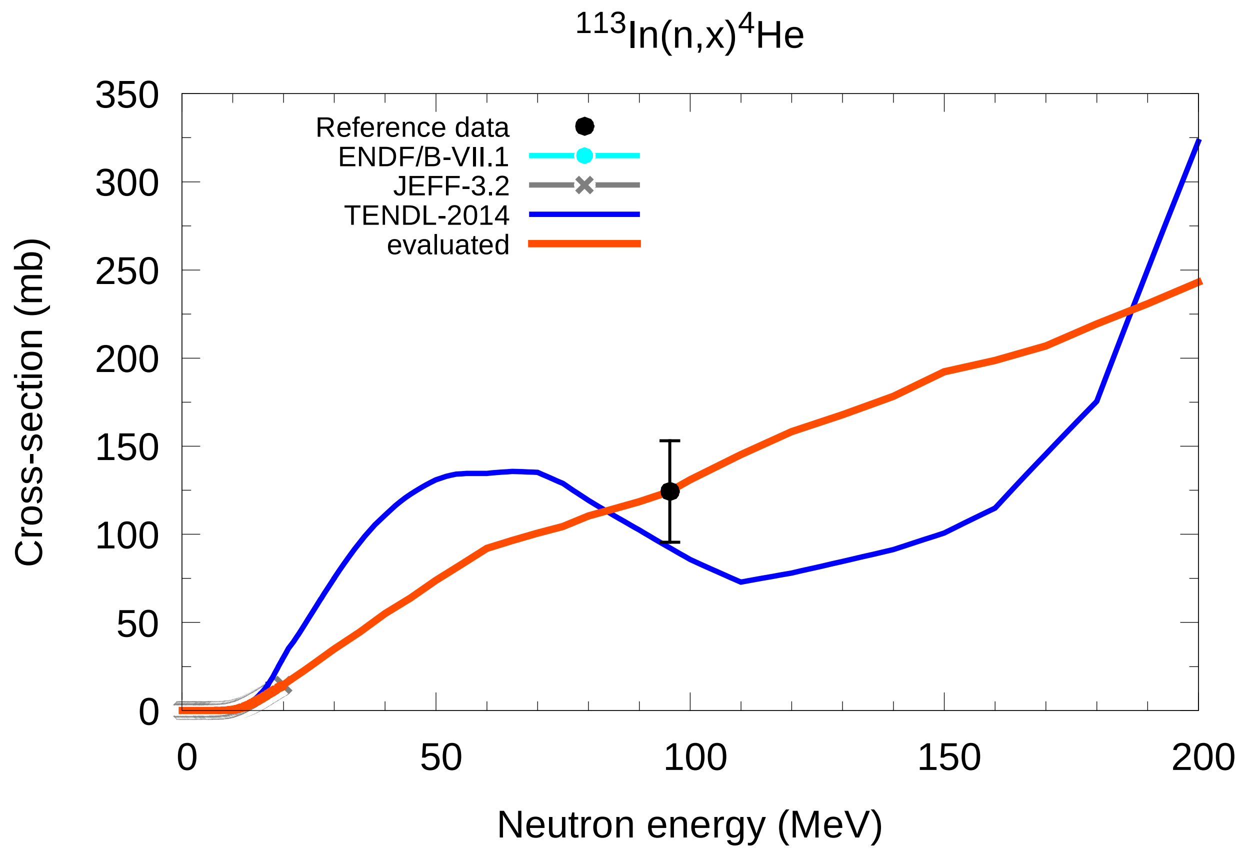
$^{113}Cd(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
0
50
100
150
200

$^{114}Cd(n,x)^4He$

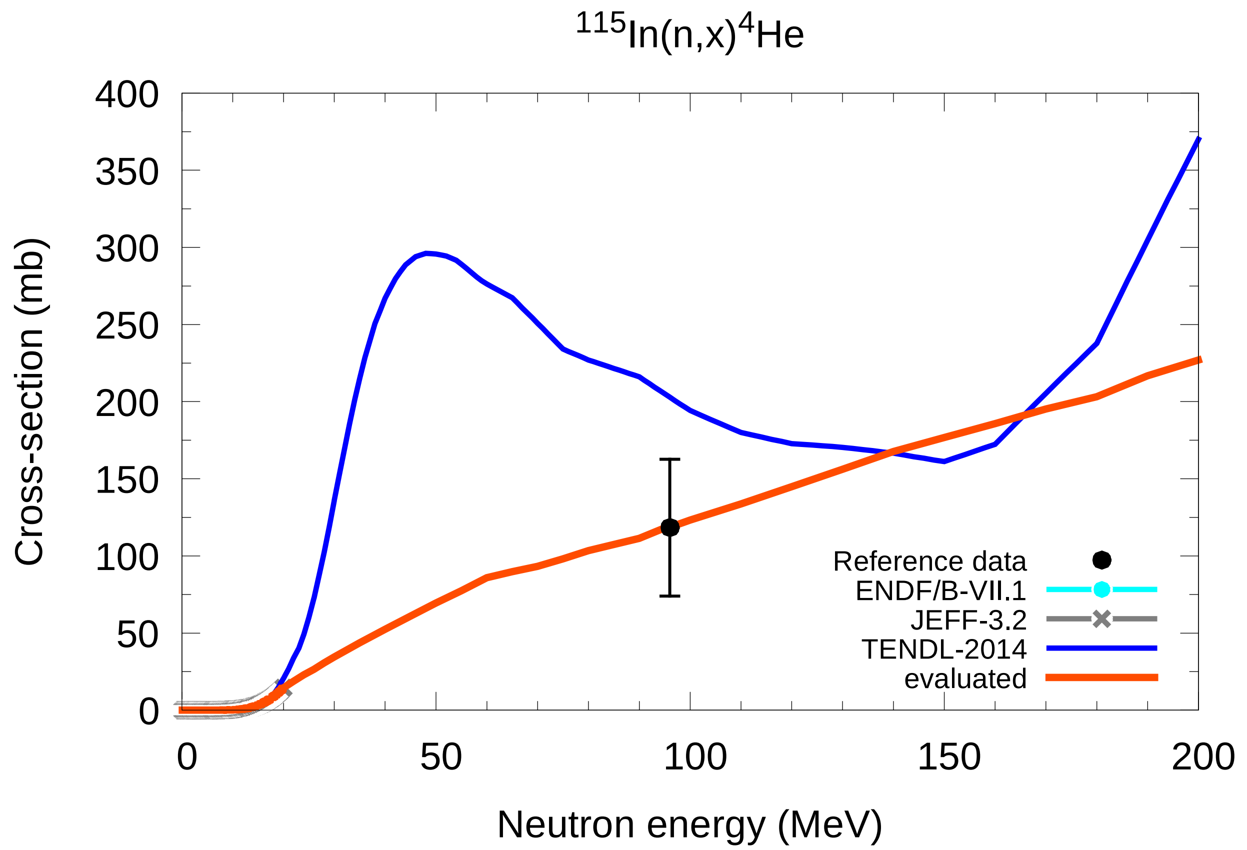


$^{116}Cd(n,x)^4He$

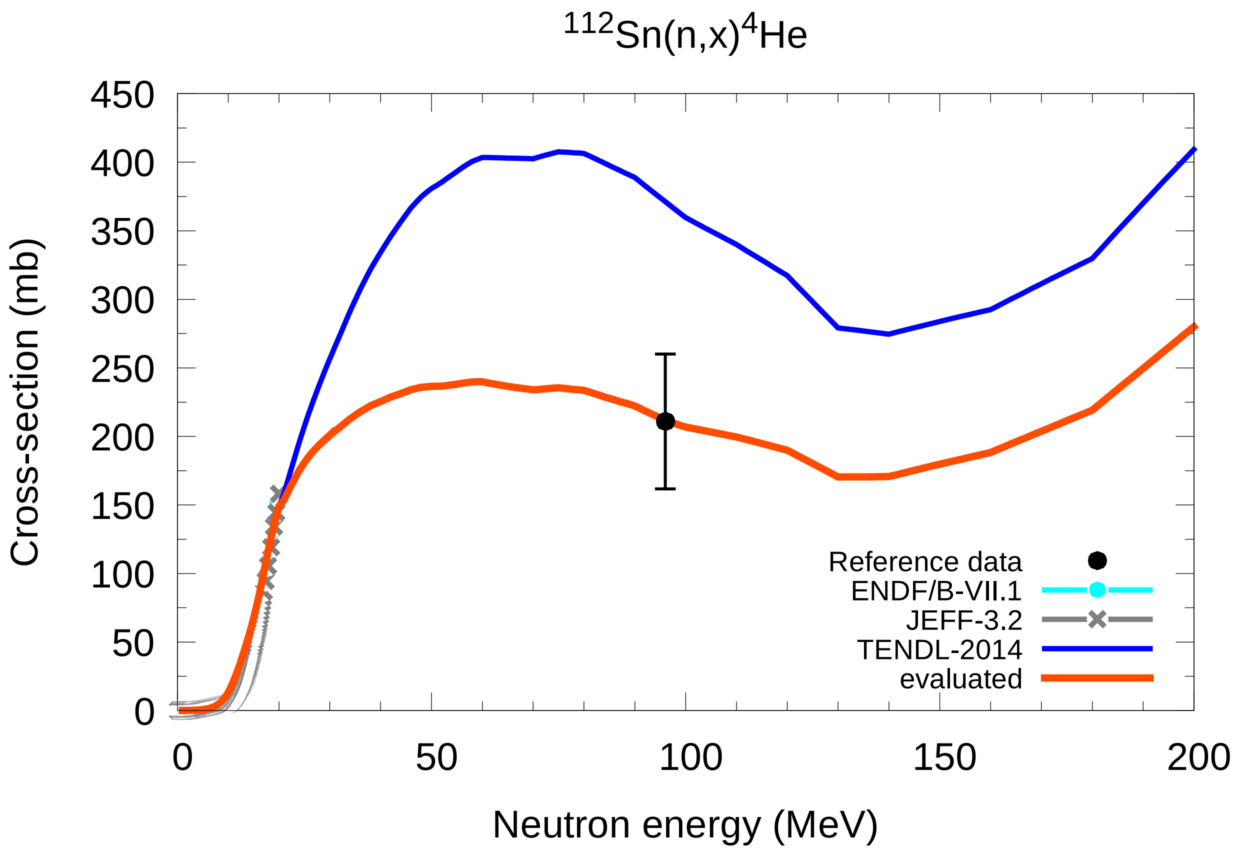




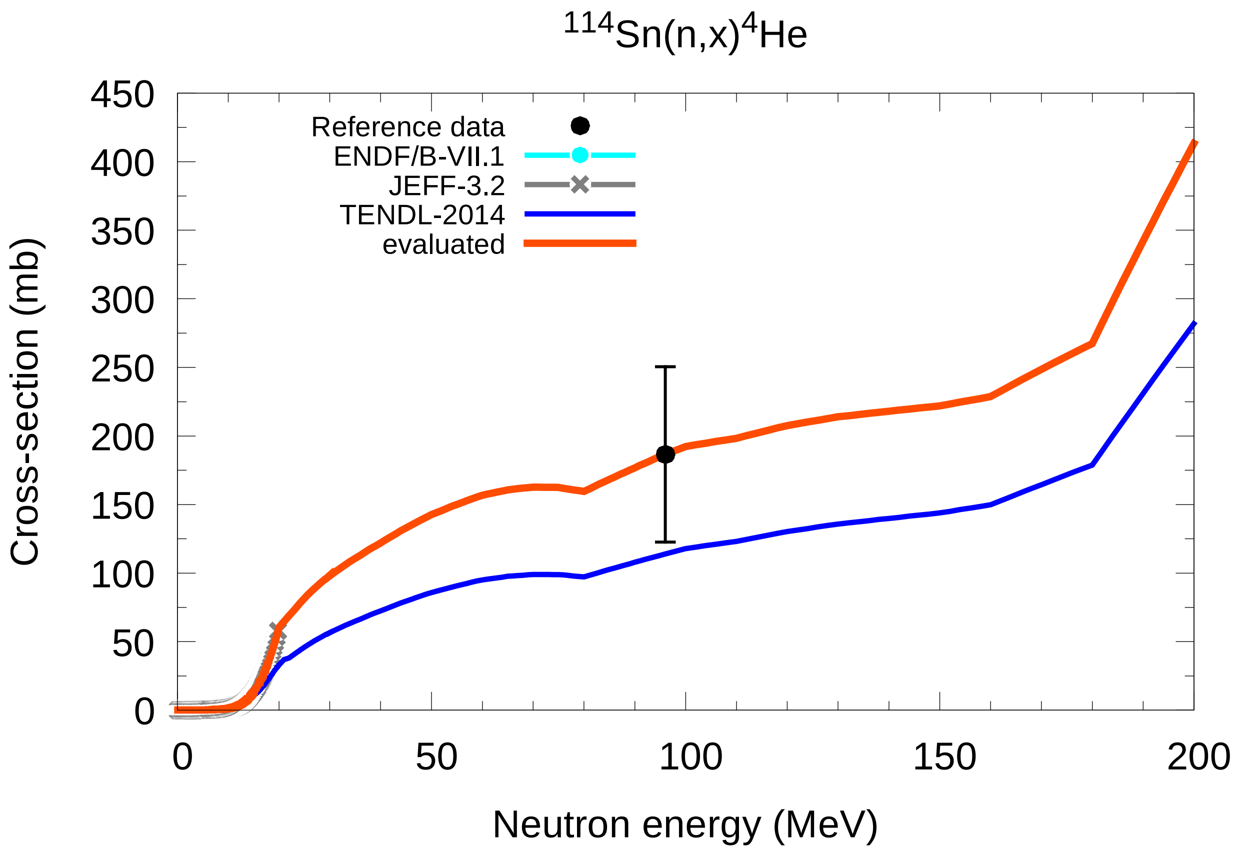
$^{113}In(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



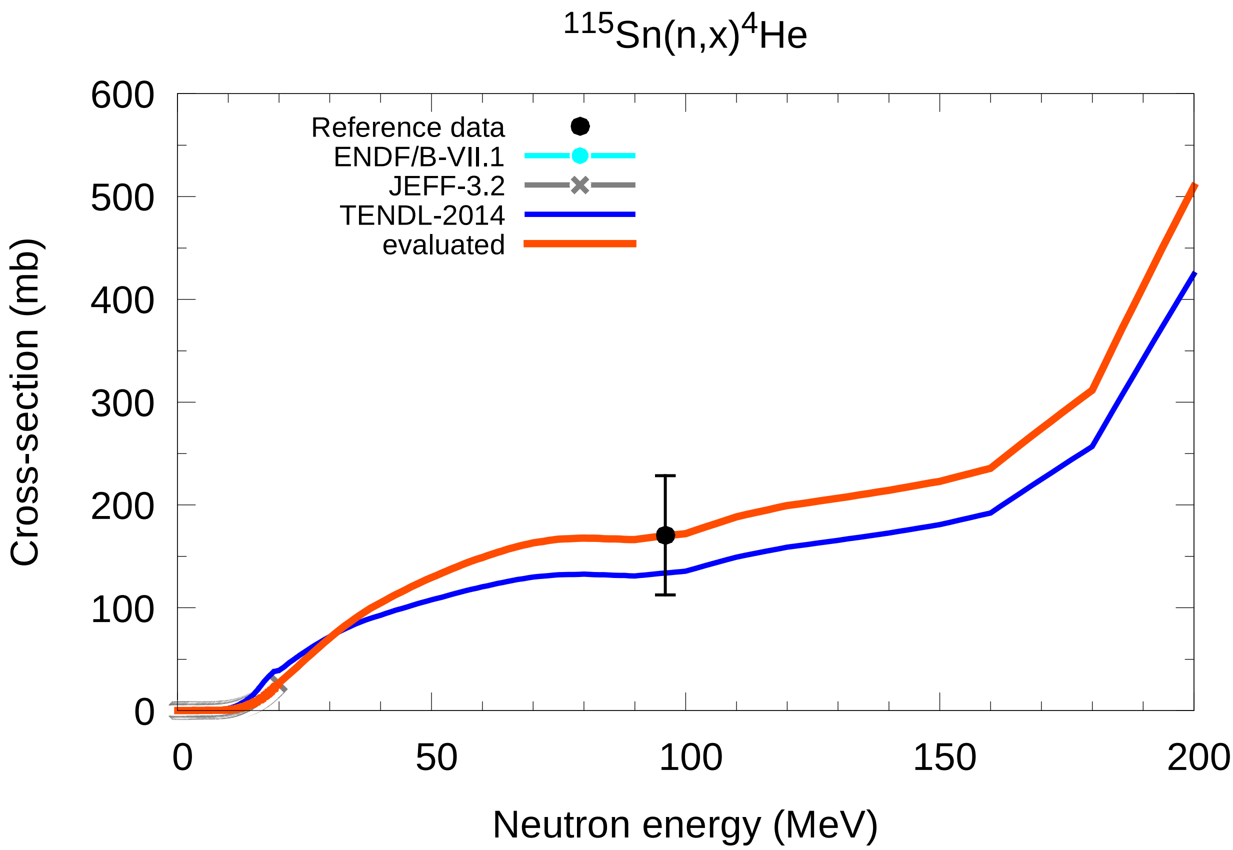
$^{115}In(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



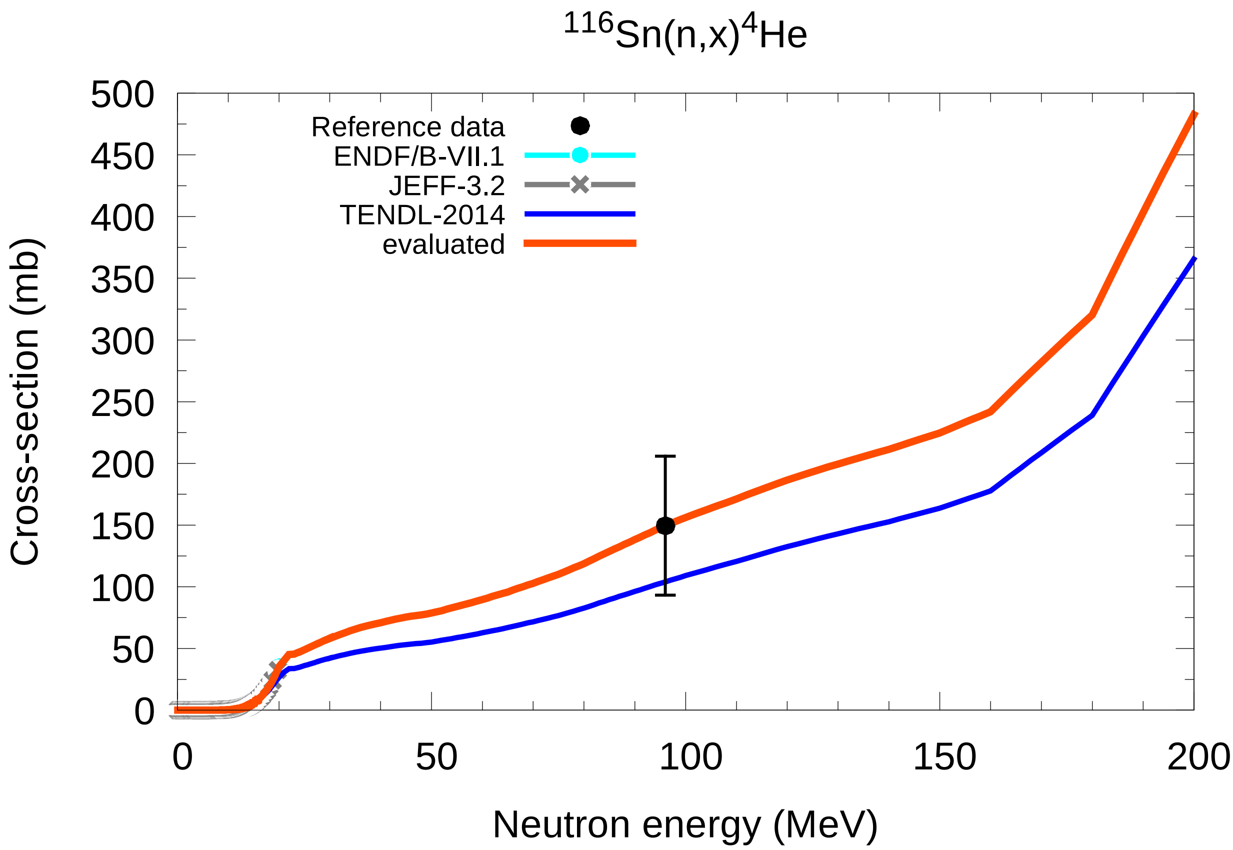
$^{112}Sn(n,x)^{4}He$
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



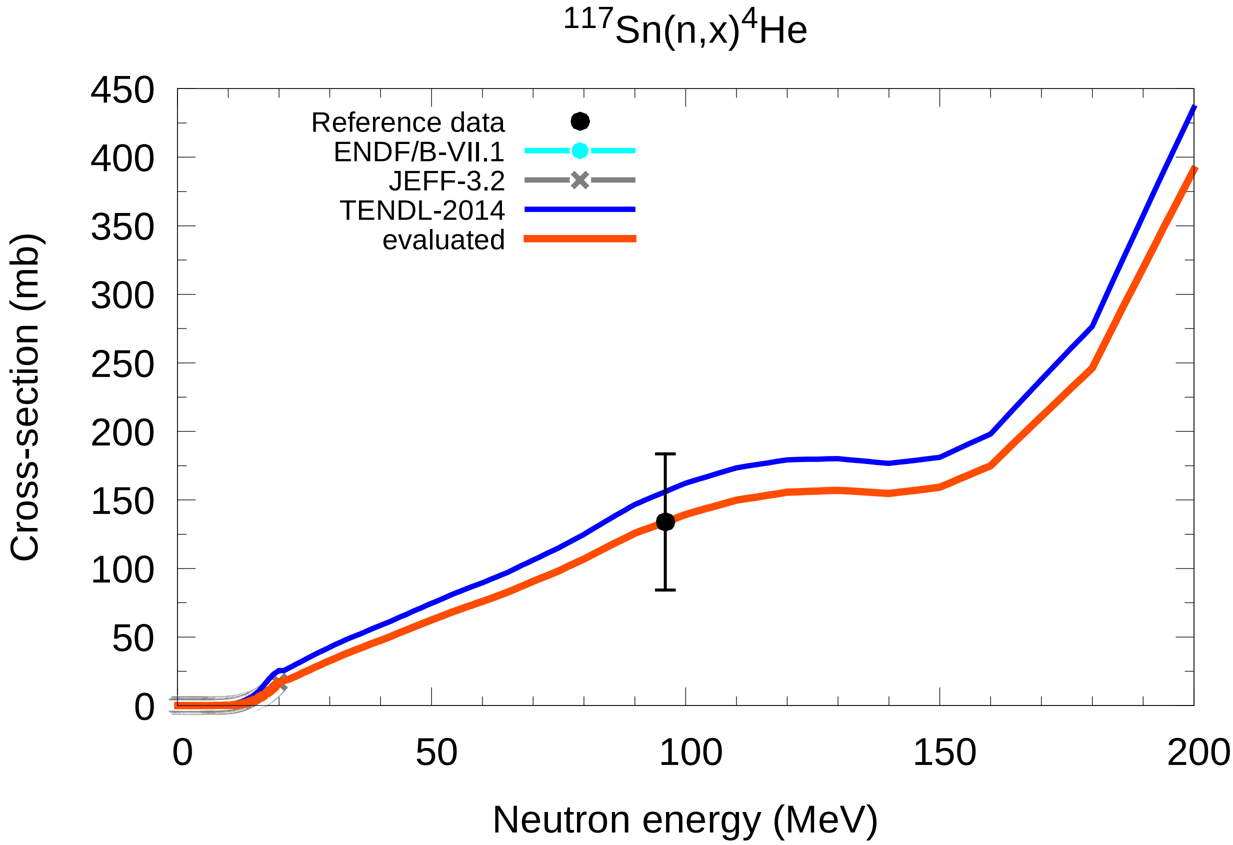
$^{114}Sn(n,x)^{4}He$
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



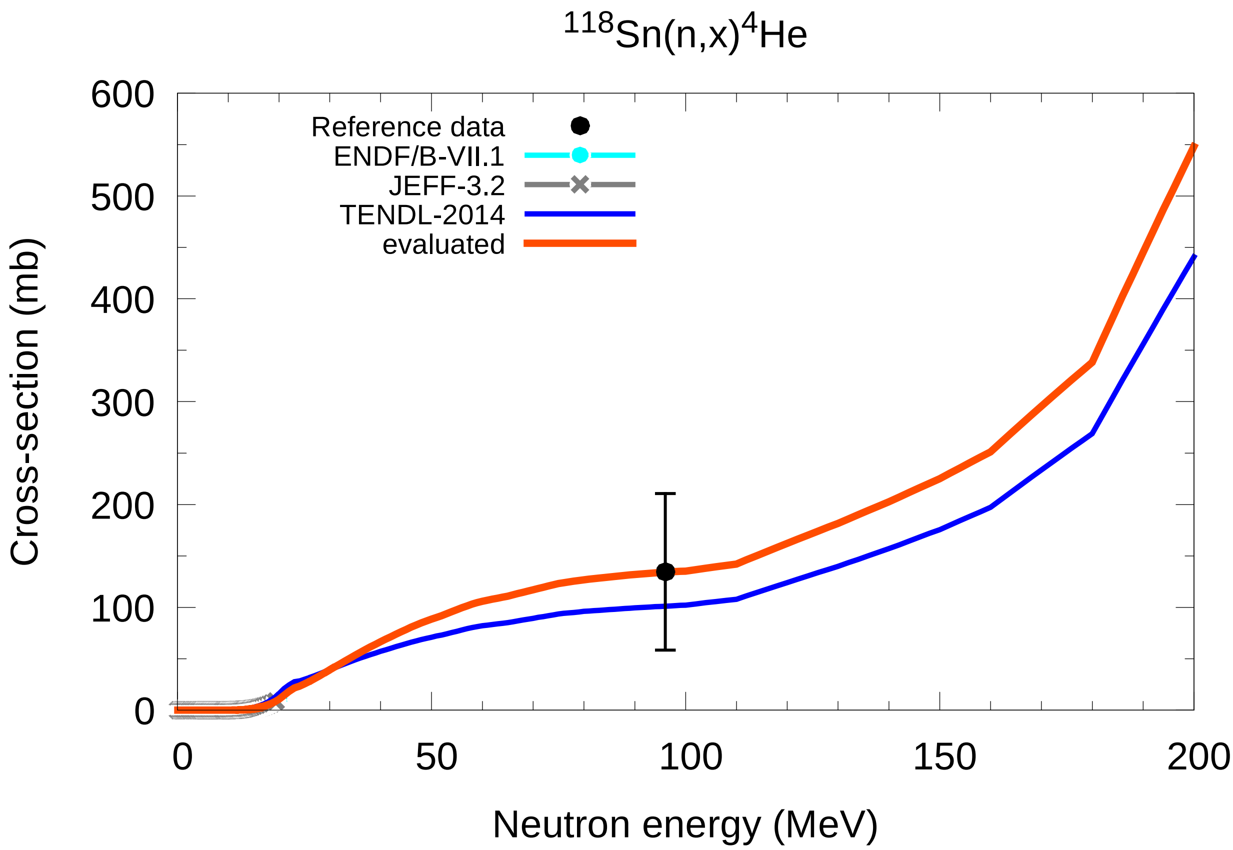
115Sn(n,x)4He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
600
500
400
300
200
100
0
0
50
100
150
200



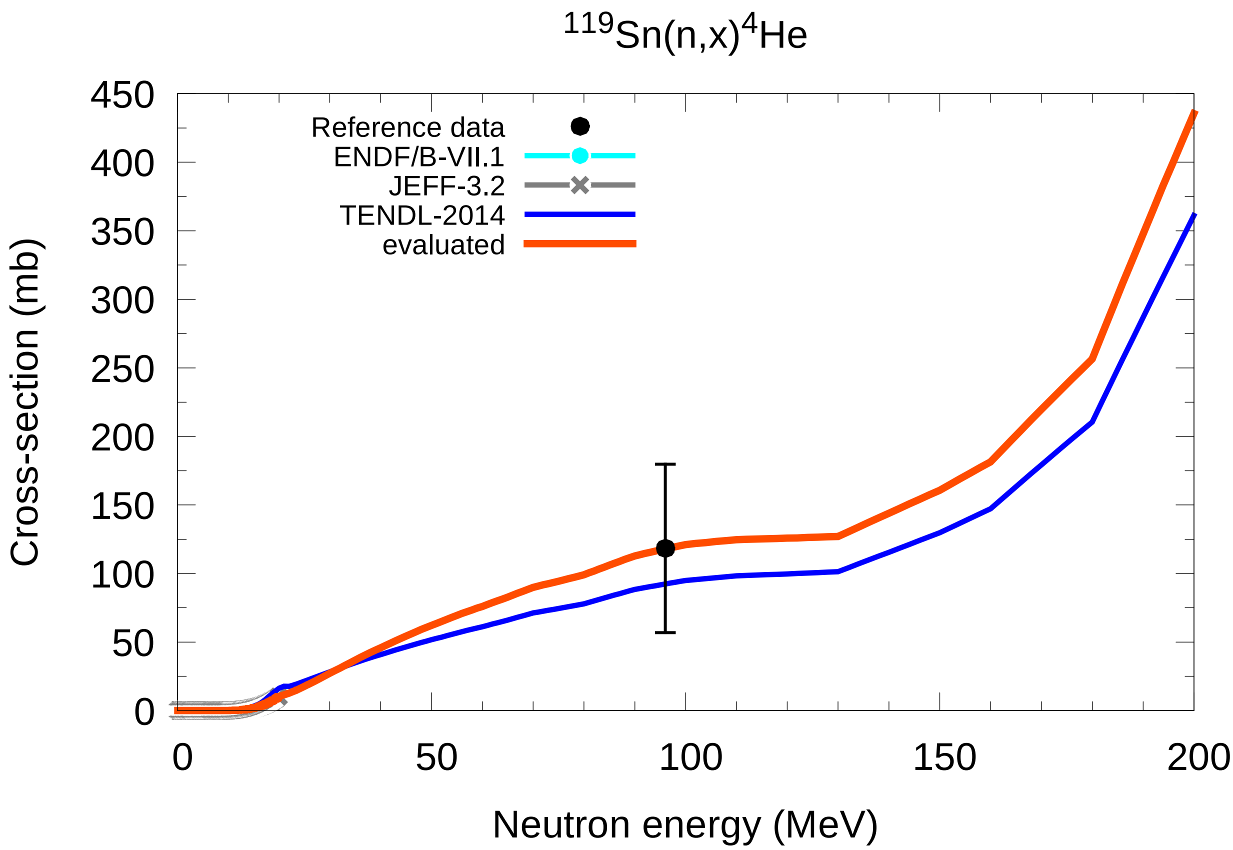
116Sn(n,x)4He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
500
450
400
350
300
250
200
150
100
50
0
0
50
100
150
200



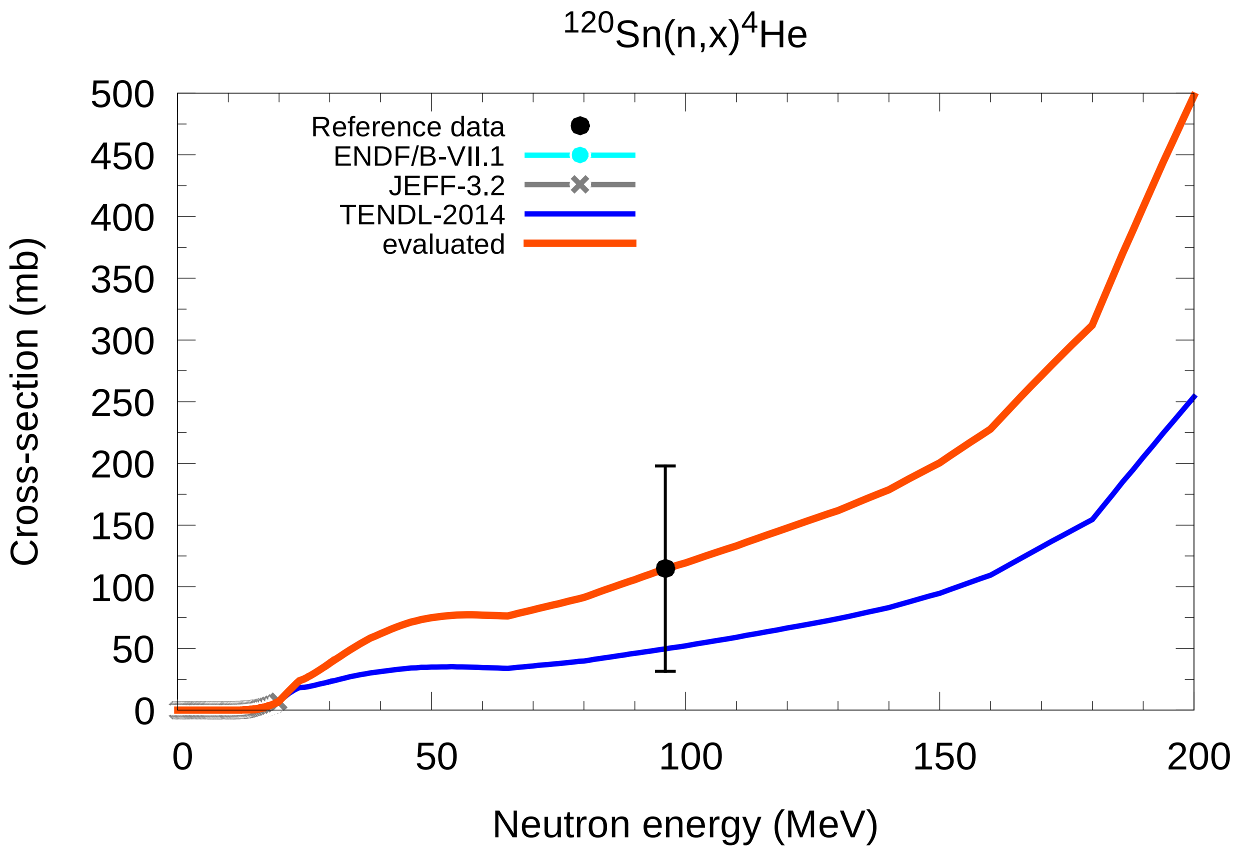
$^{117}Sn(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



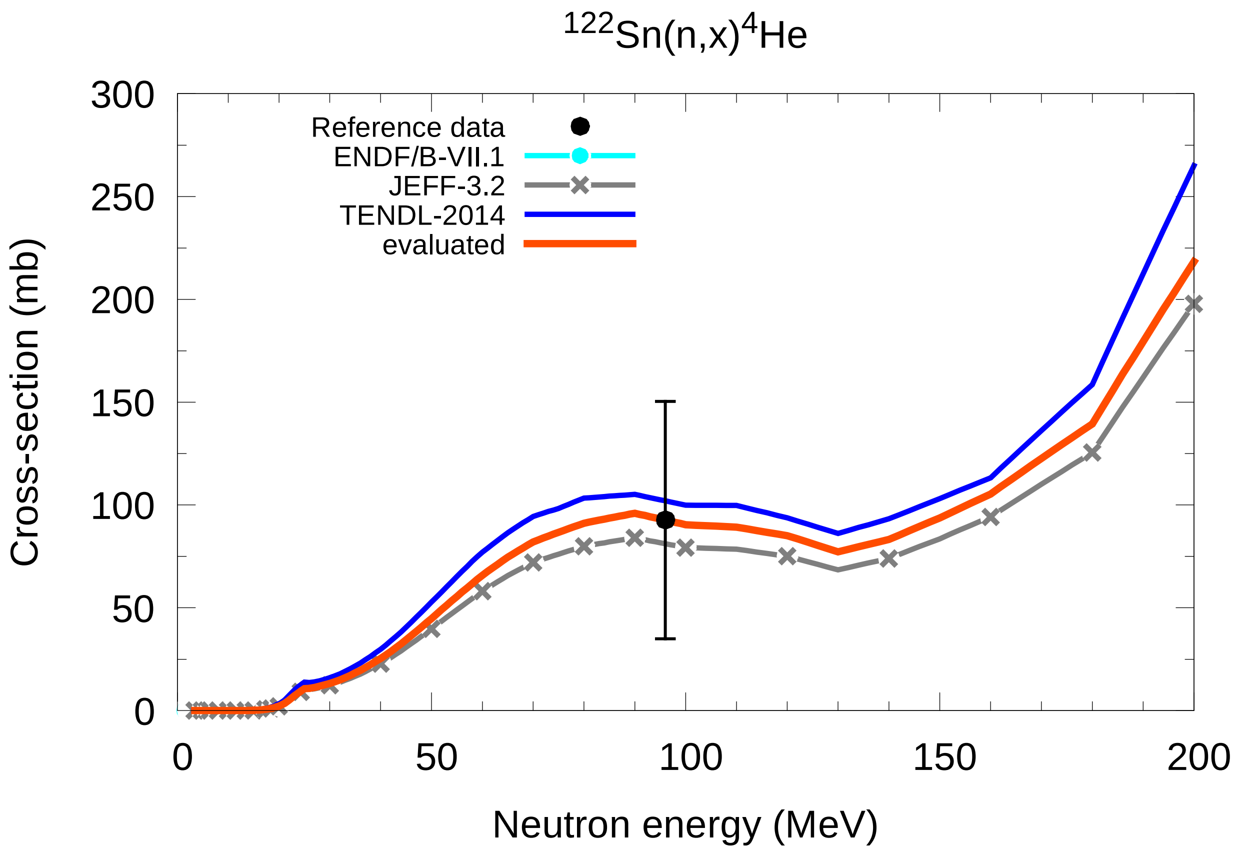
$^{118}Sn(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600



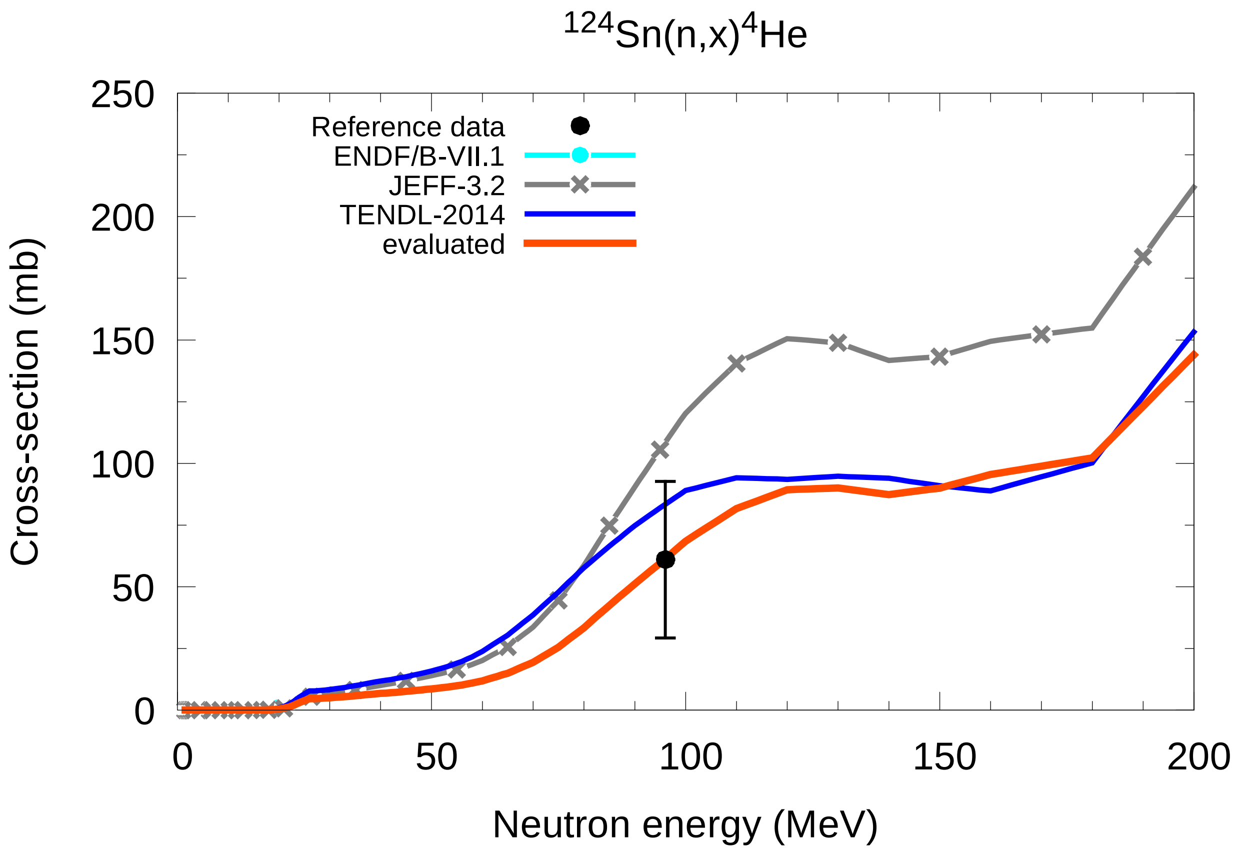
$^{119}Sn(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



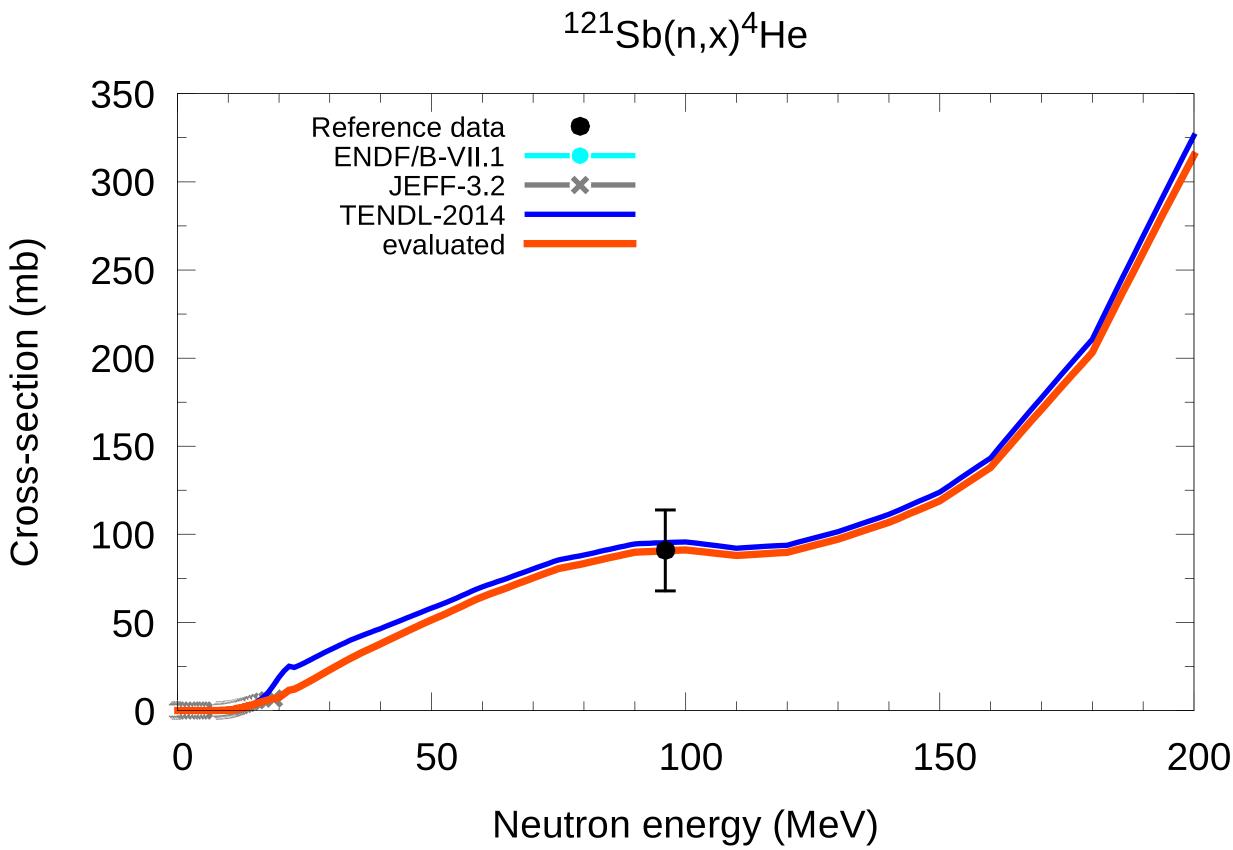
$^{120}Sn(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



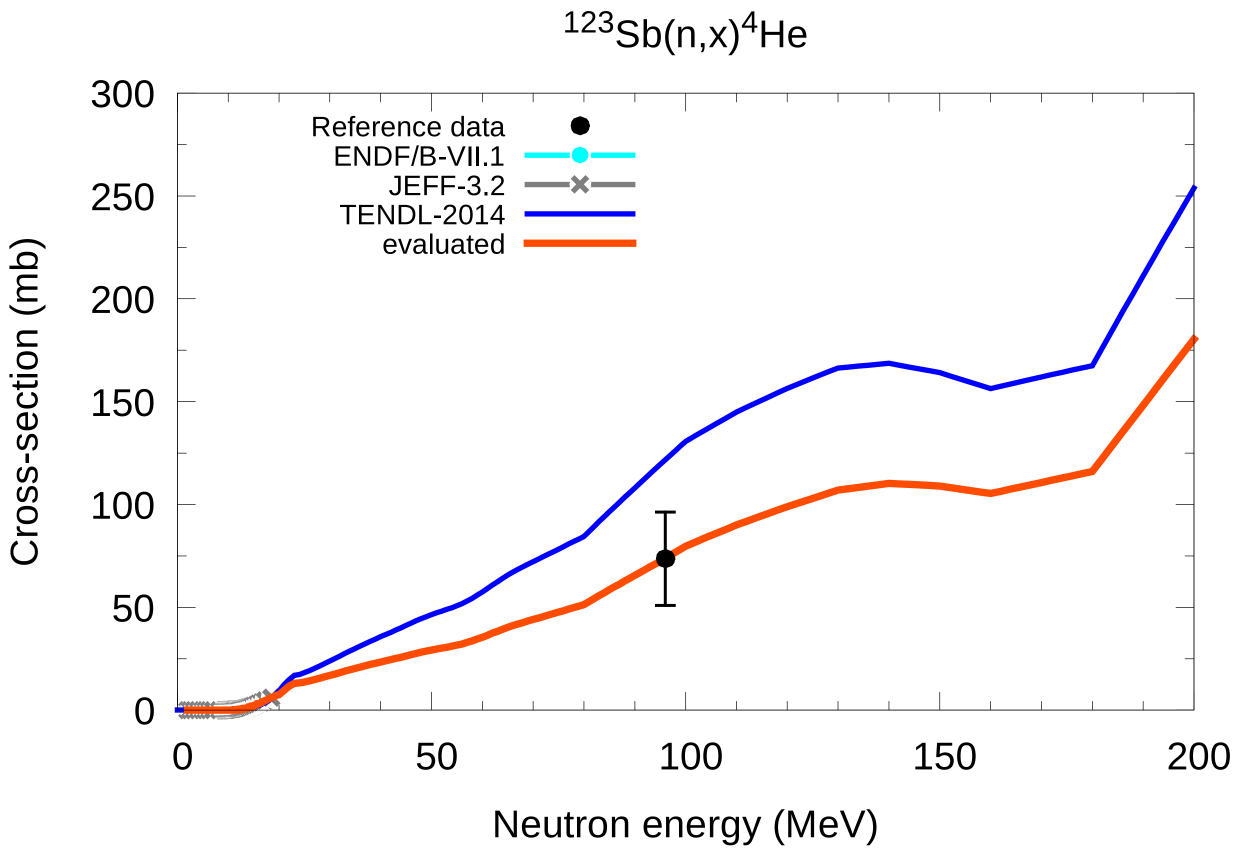
$^{122}Sn(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



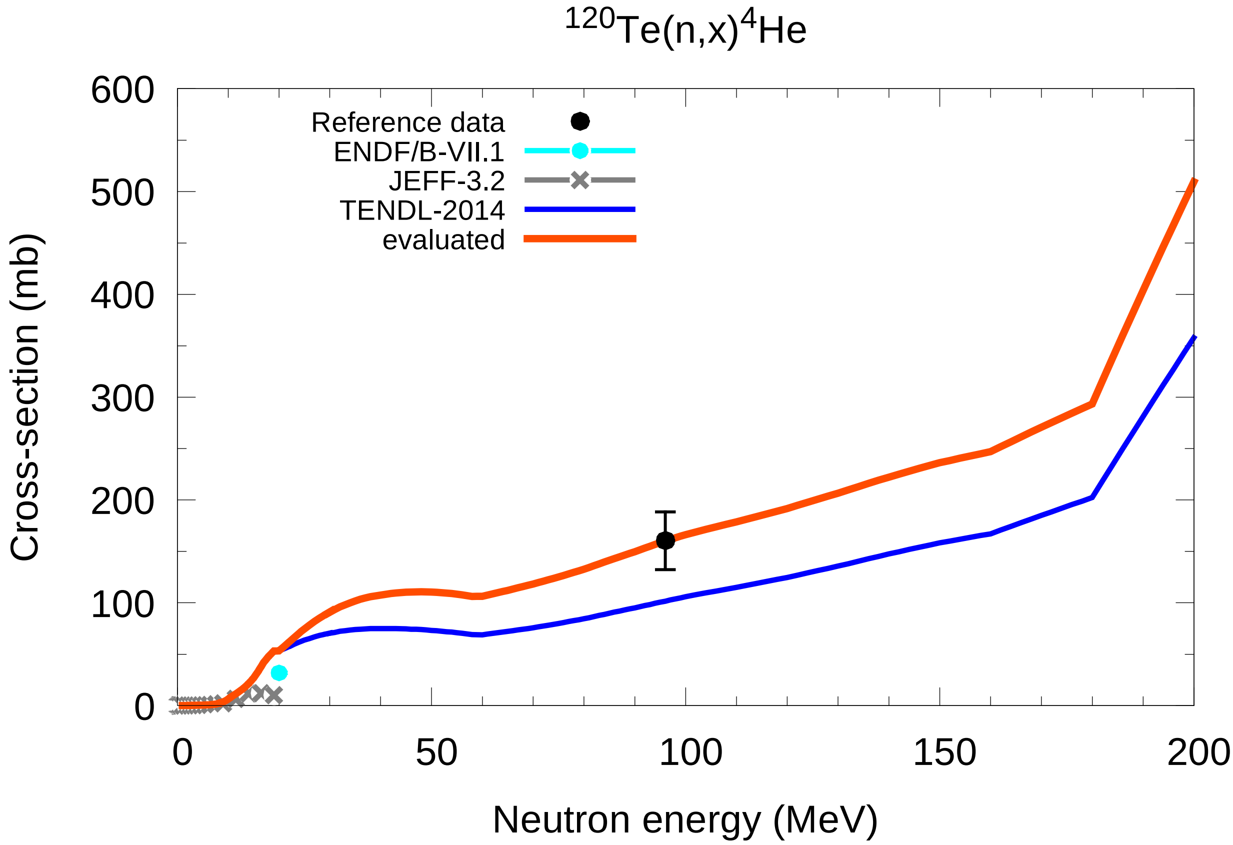
$^{124}Sn(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



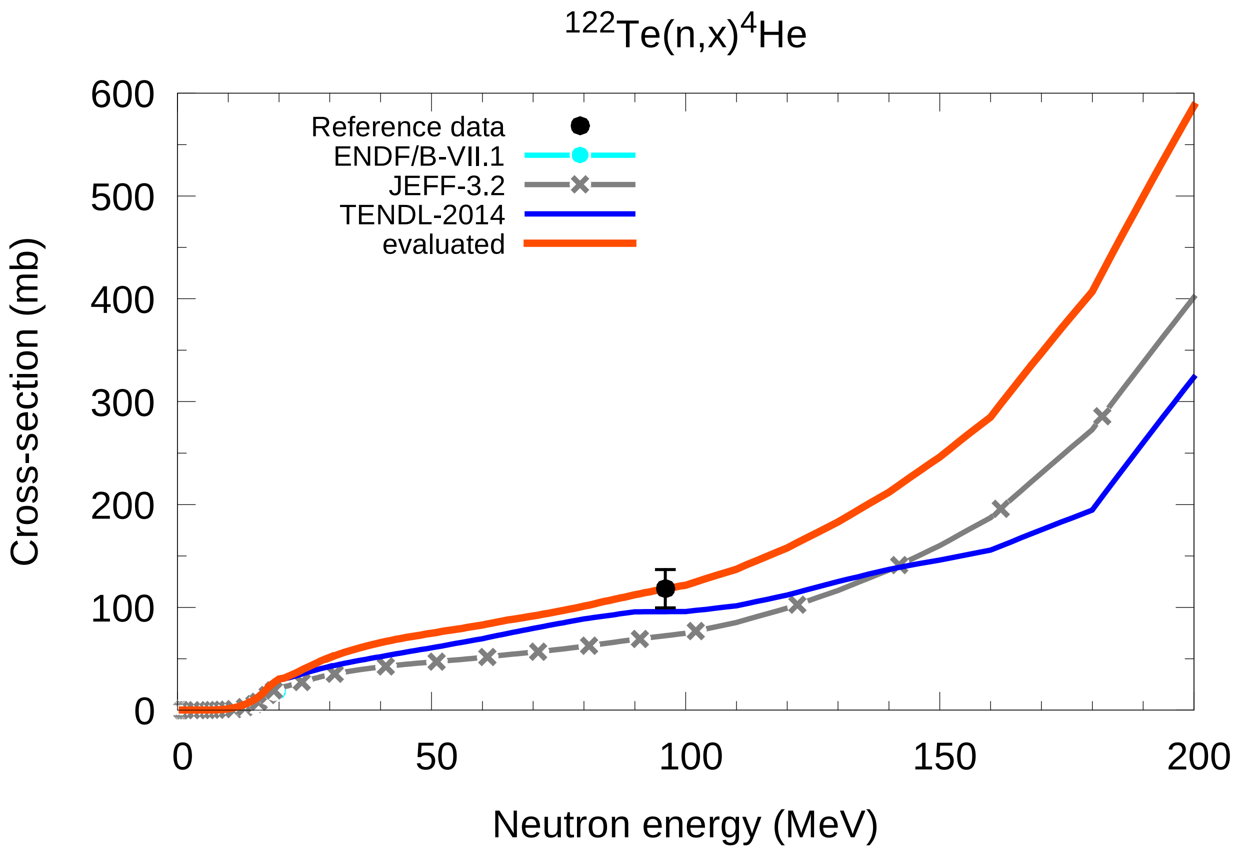
$^{121}Sb(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



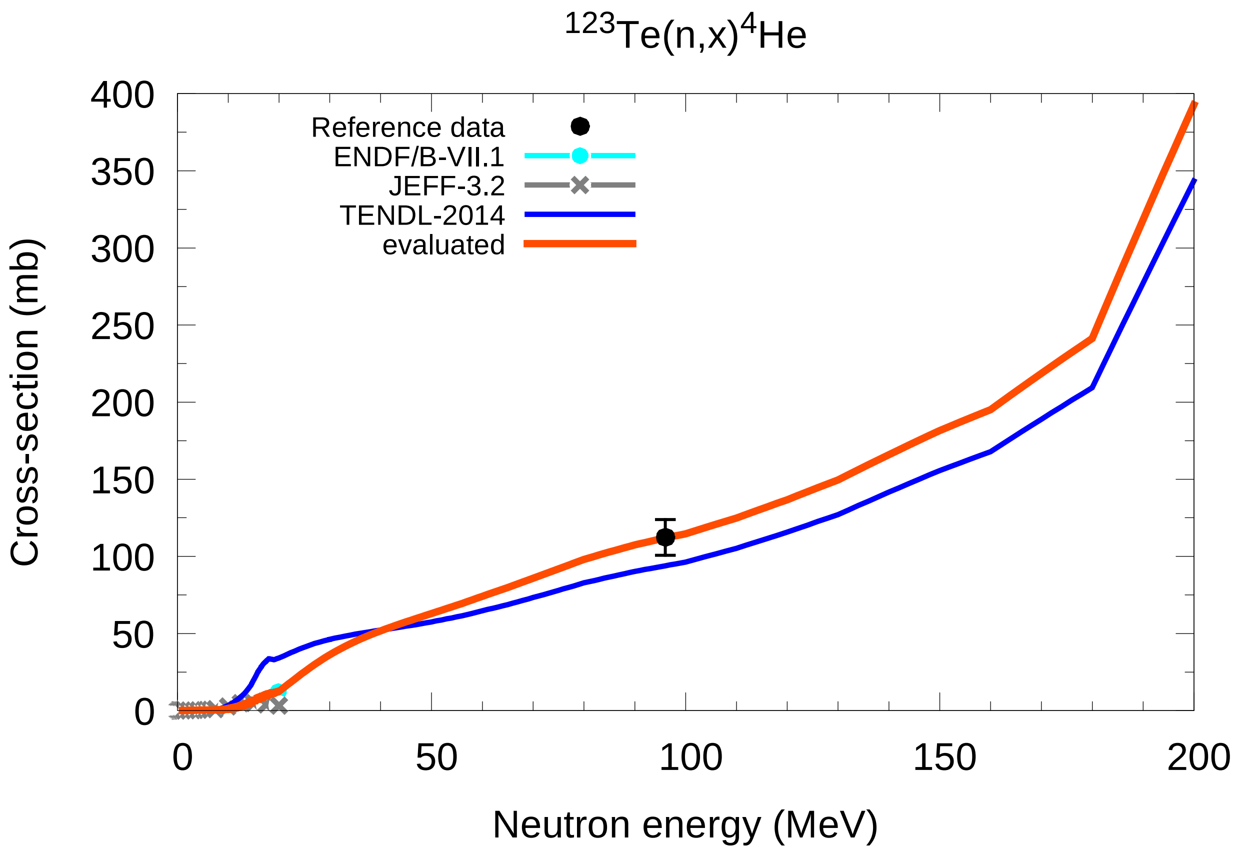
$^{123}Sb(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



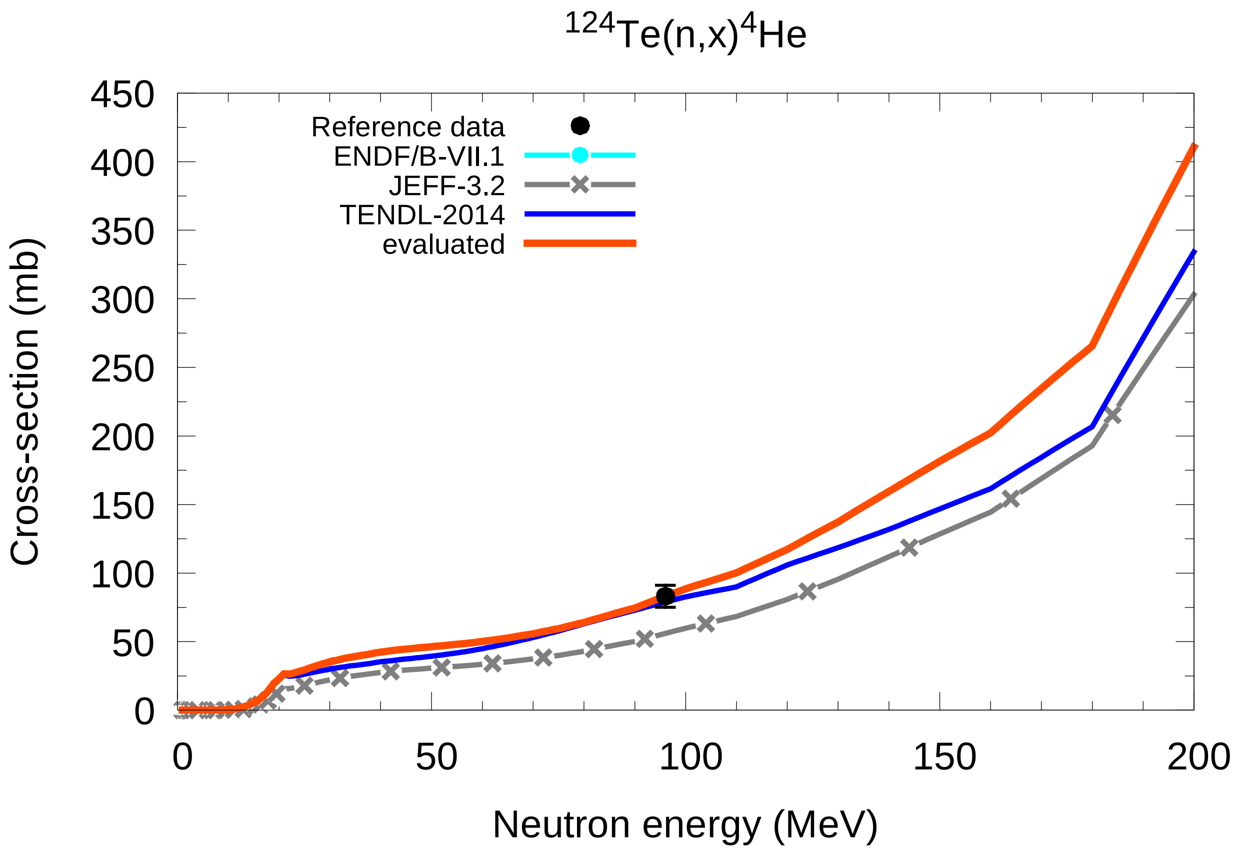
$^{120}Te(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



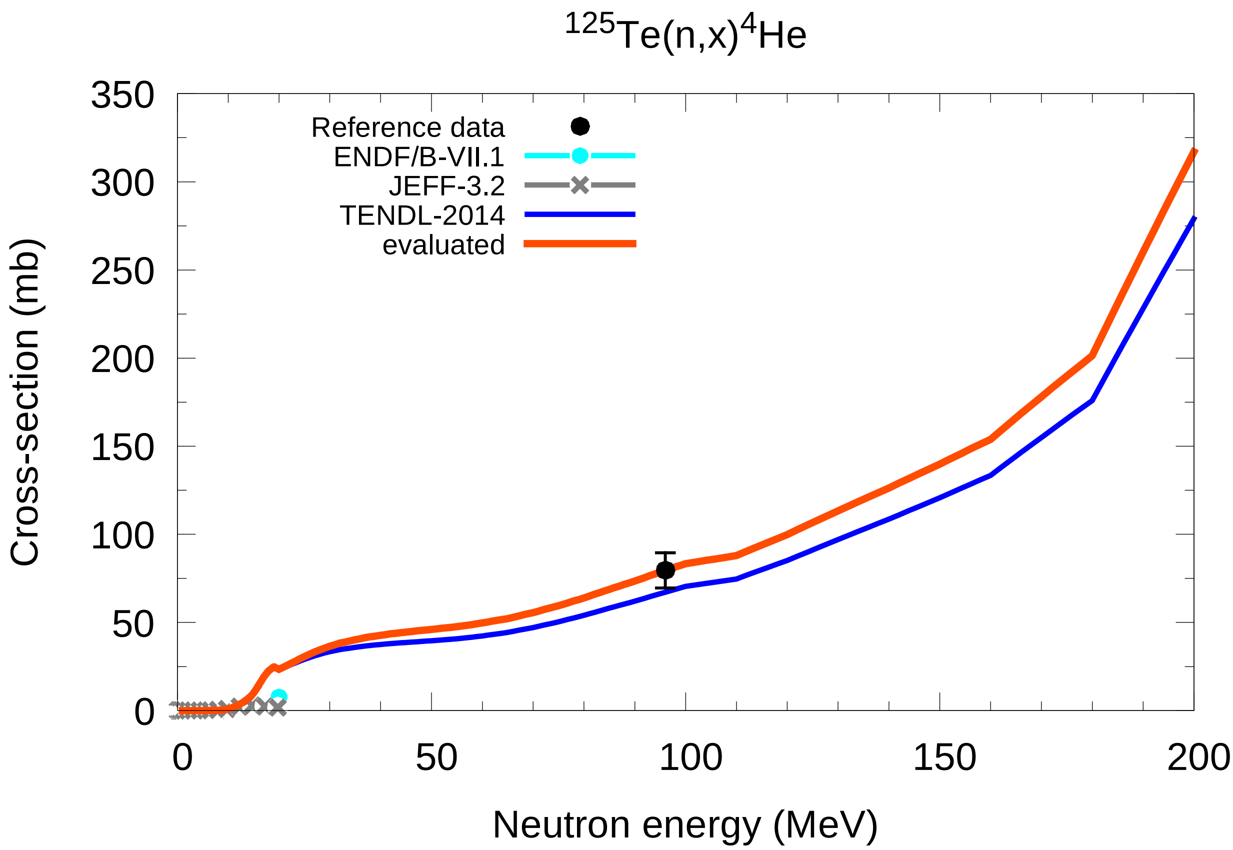
$^{122}Te(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



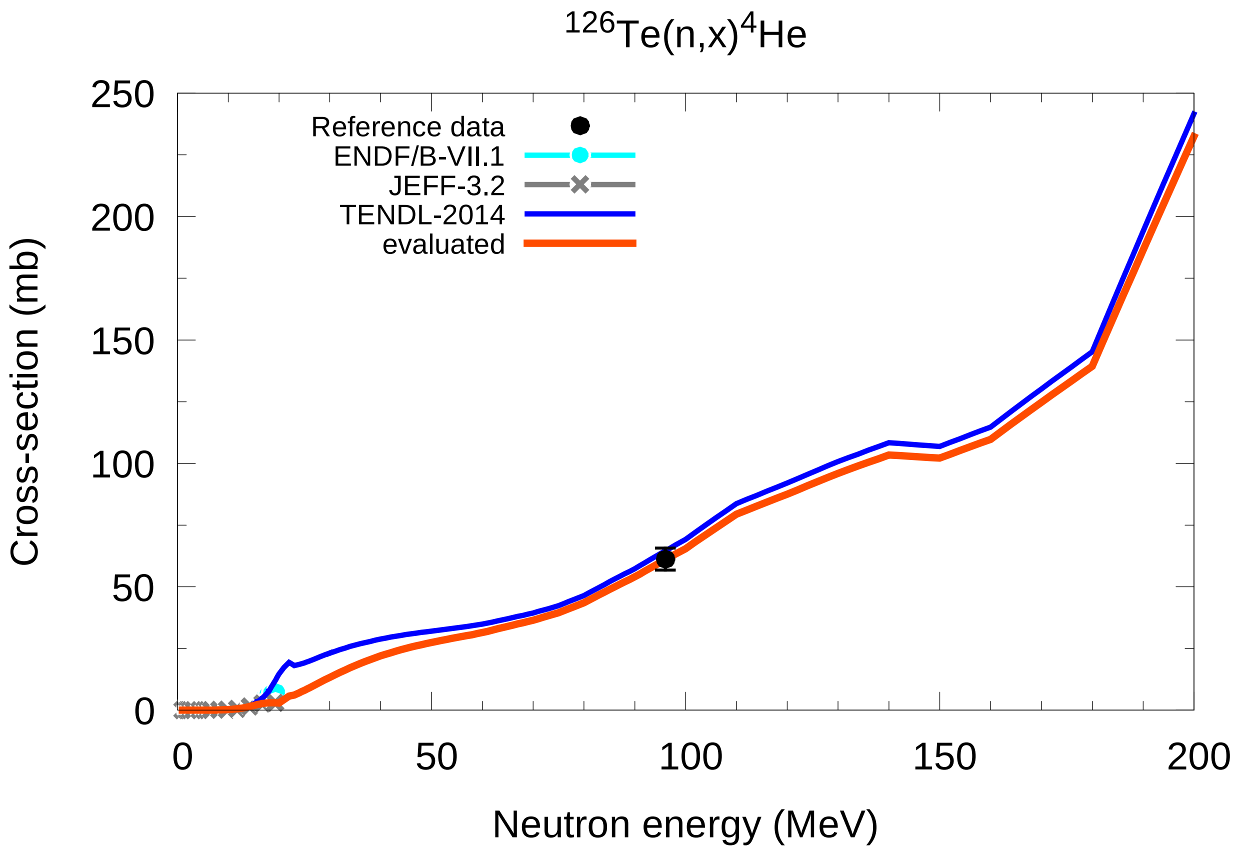
$^{123}Te(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



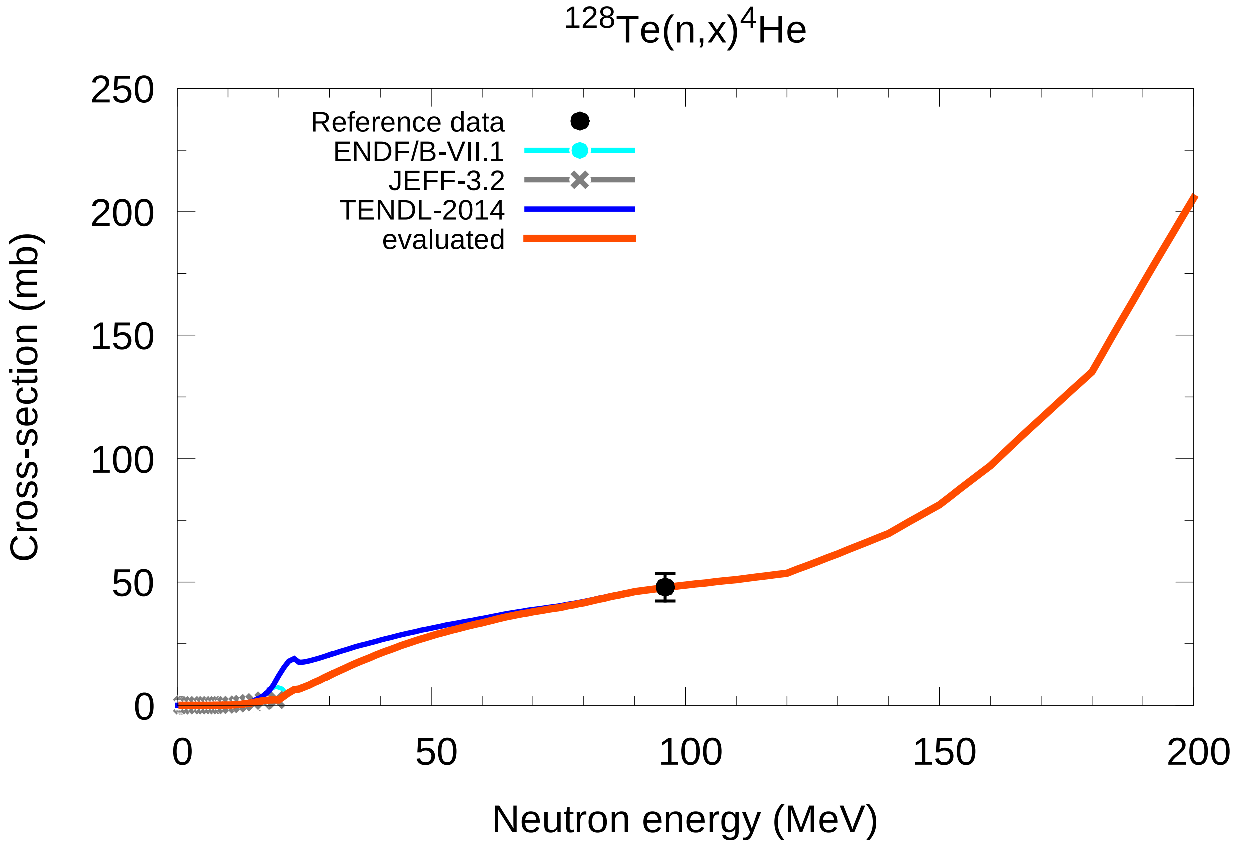
$^{124}Te(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



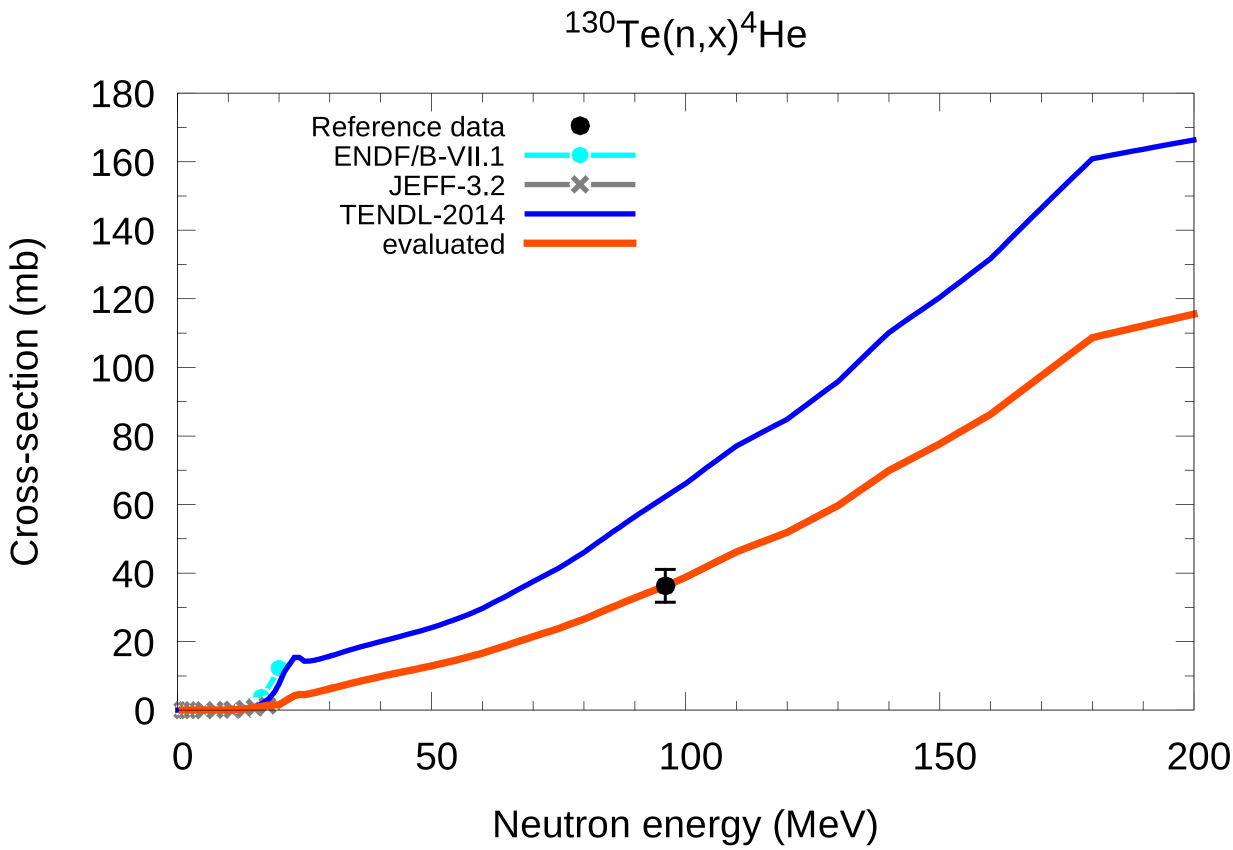
$^{125}Te(n,x)^{4}He$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300
350



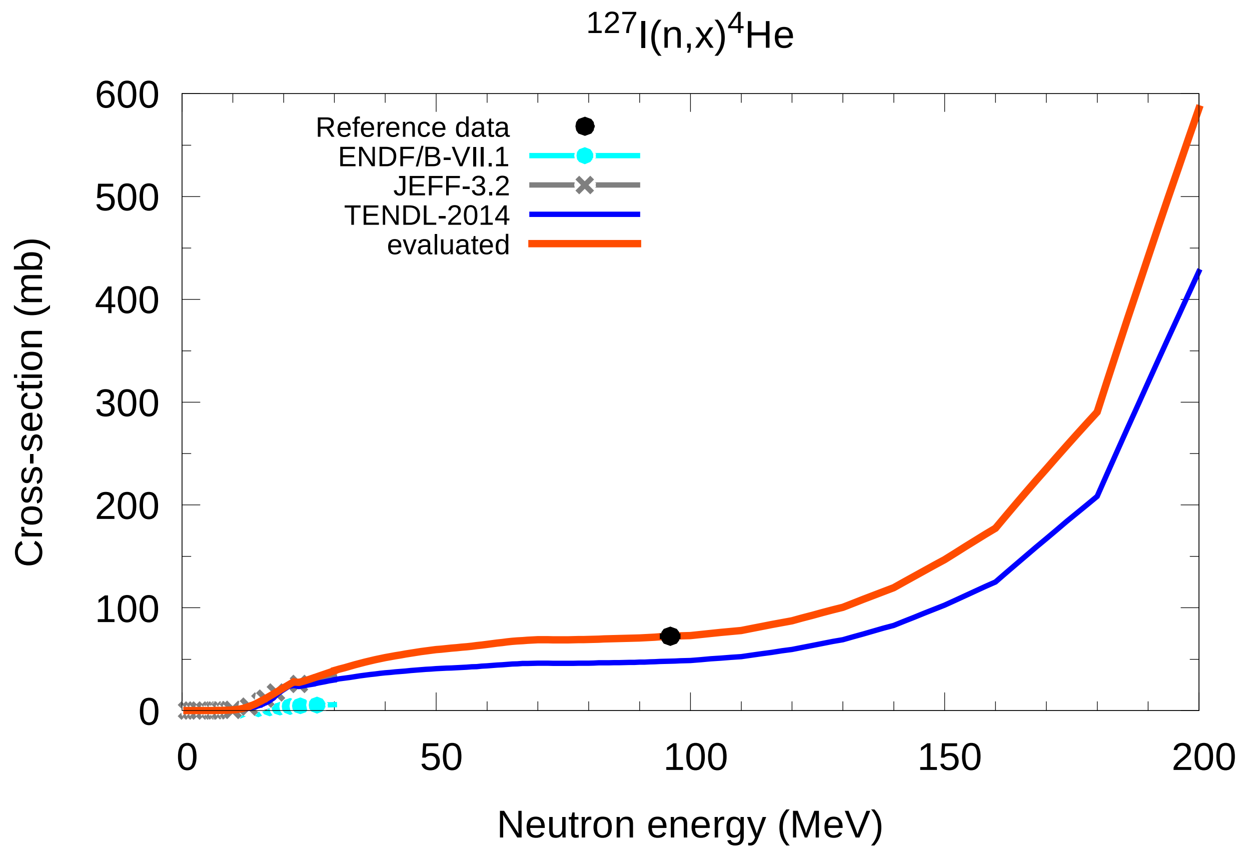
$^{126}Te(n,x)^{4}He$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250



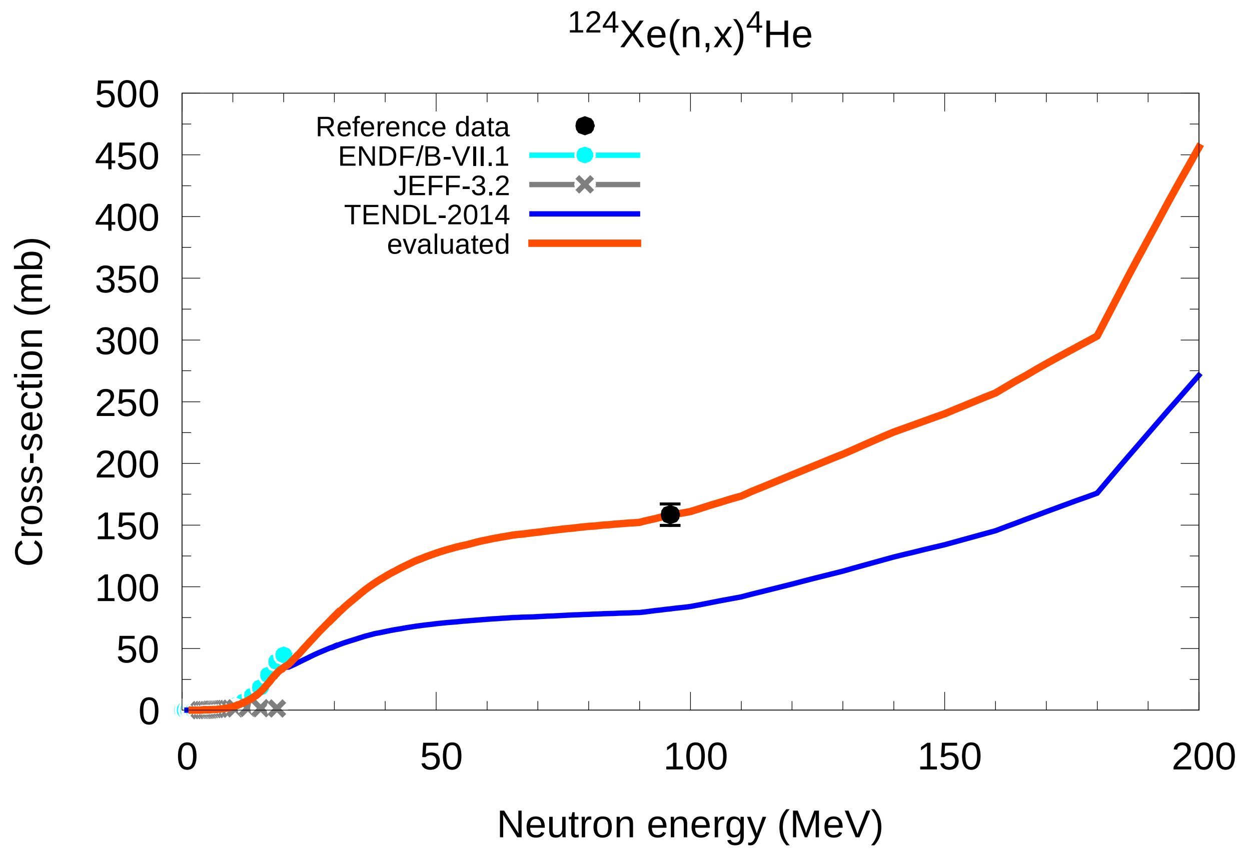
$^{128}Te(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)



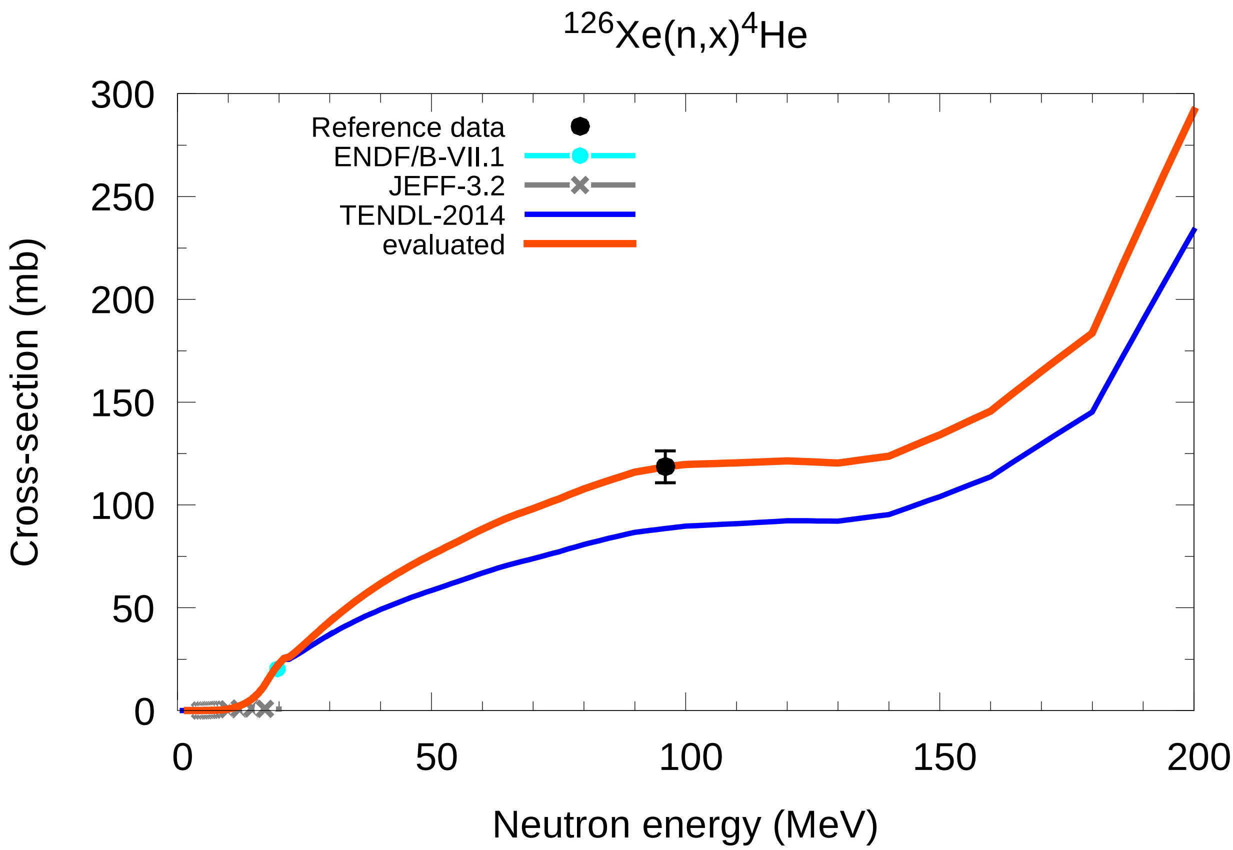
$^{130}Te(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)



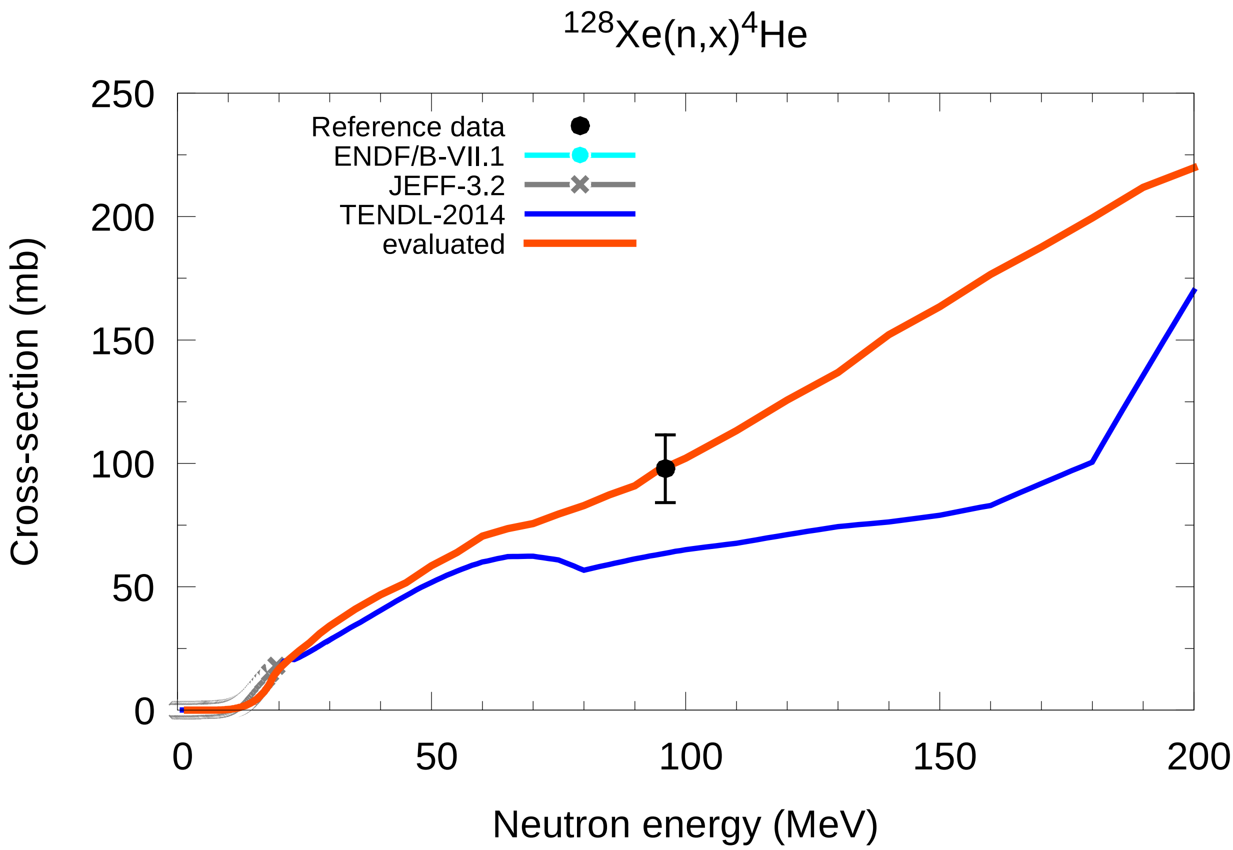
$^{127}I(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



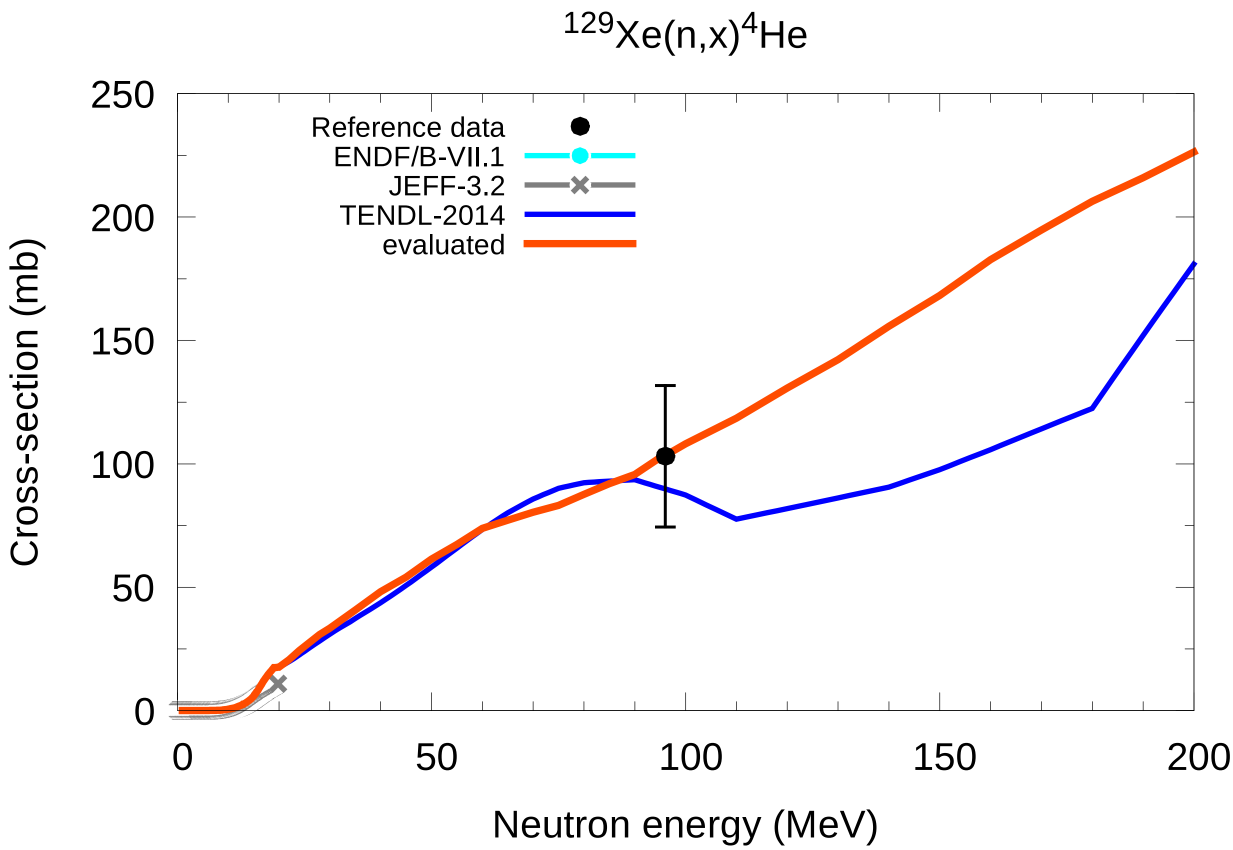
$^{124}Xe(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500
0
50
100
150
200



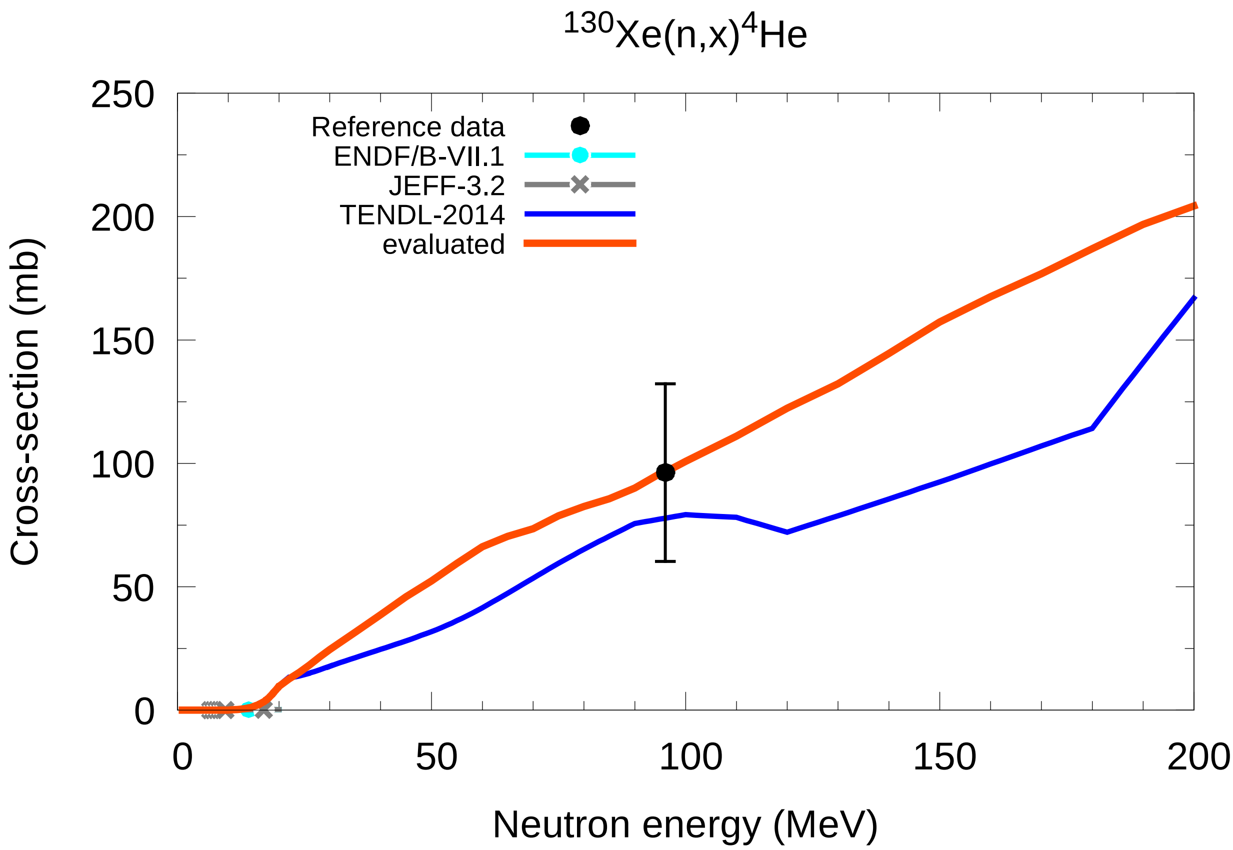
$^{126}Xe(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



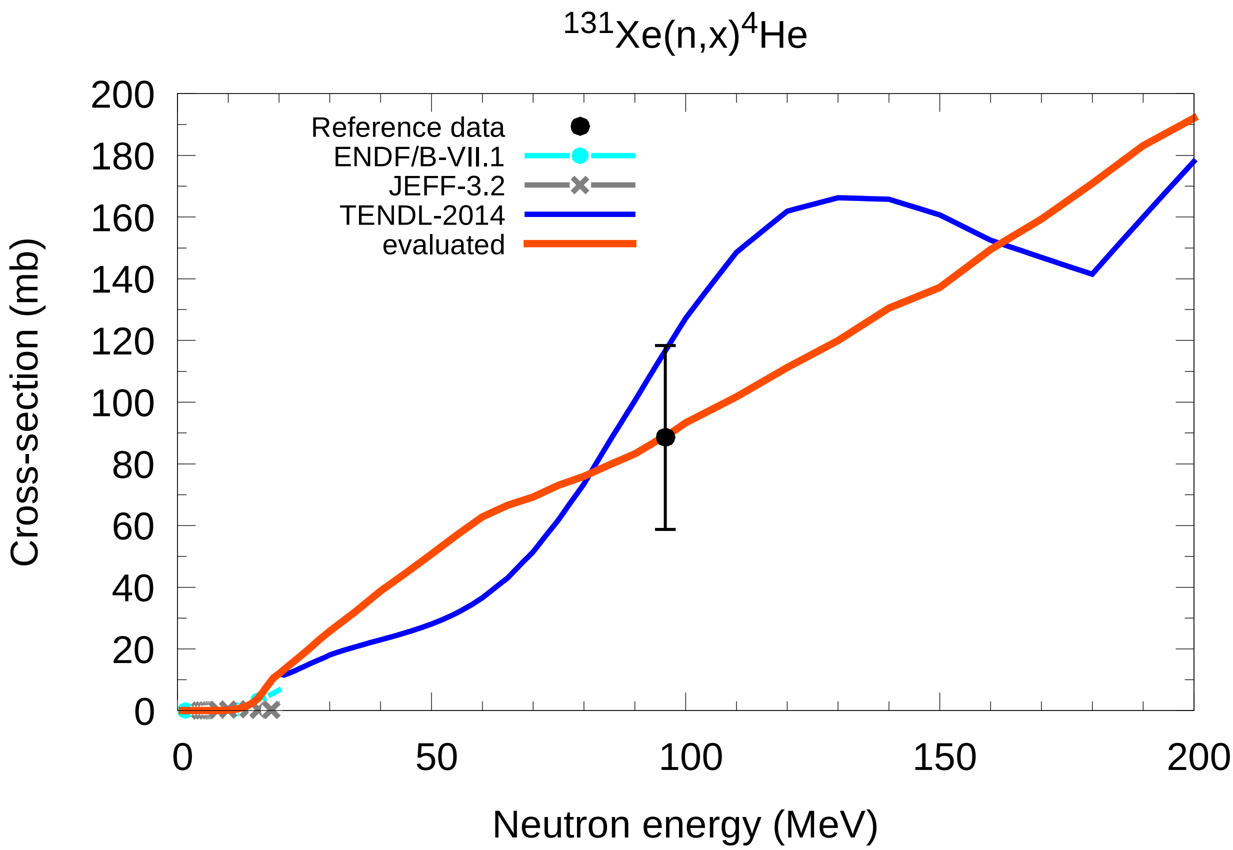
$^{128}Xe(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



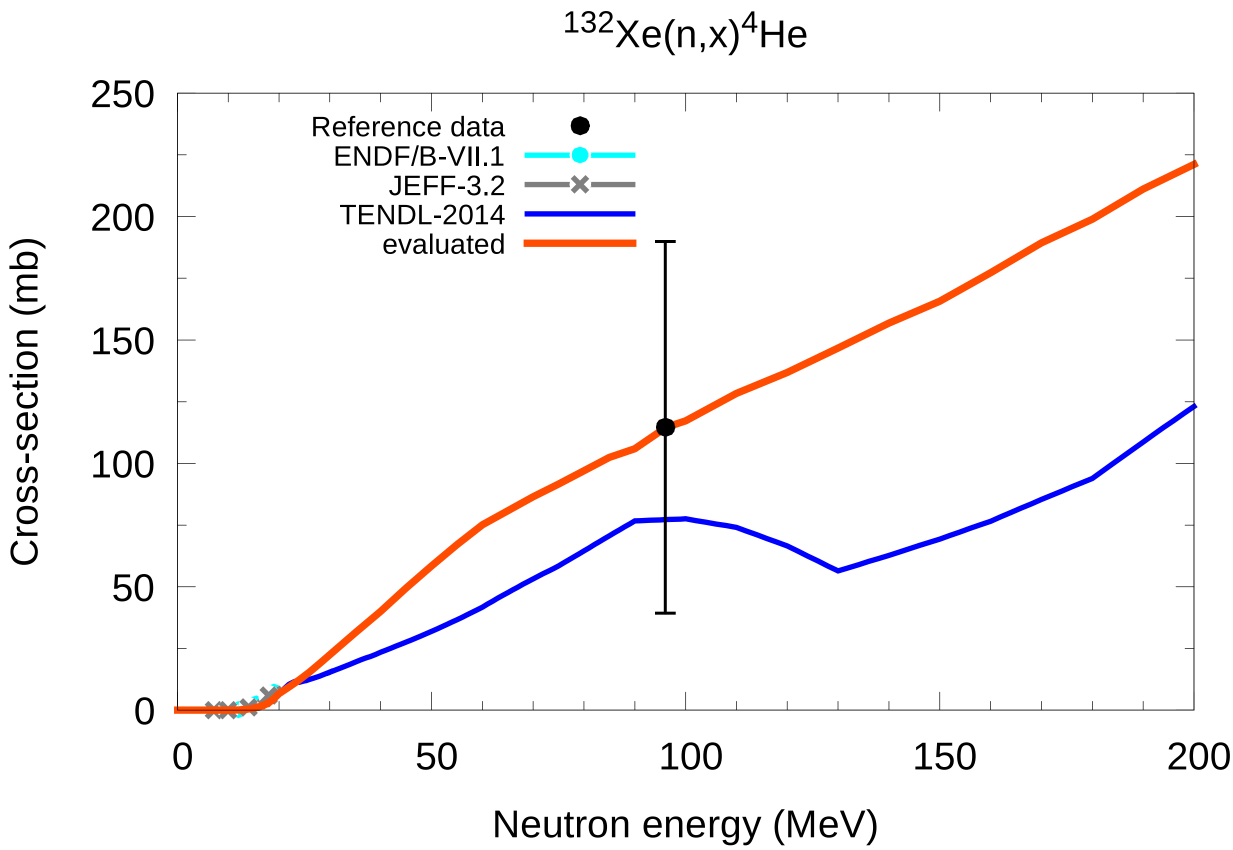
$^{129}Xe(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



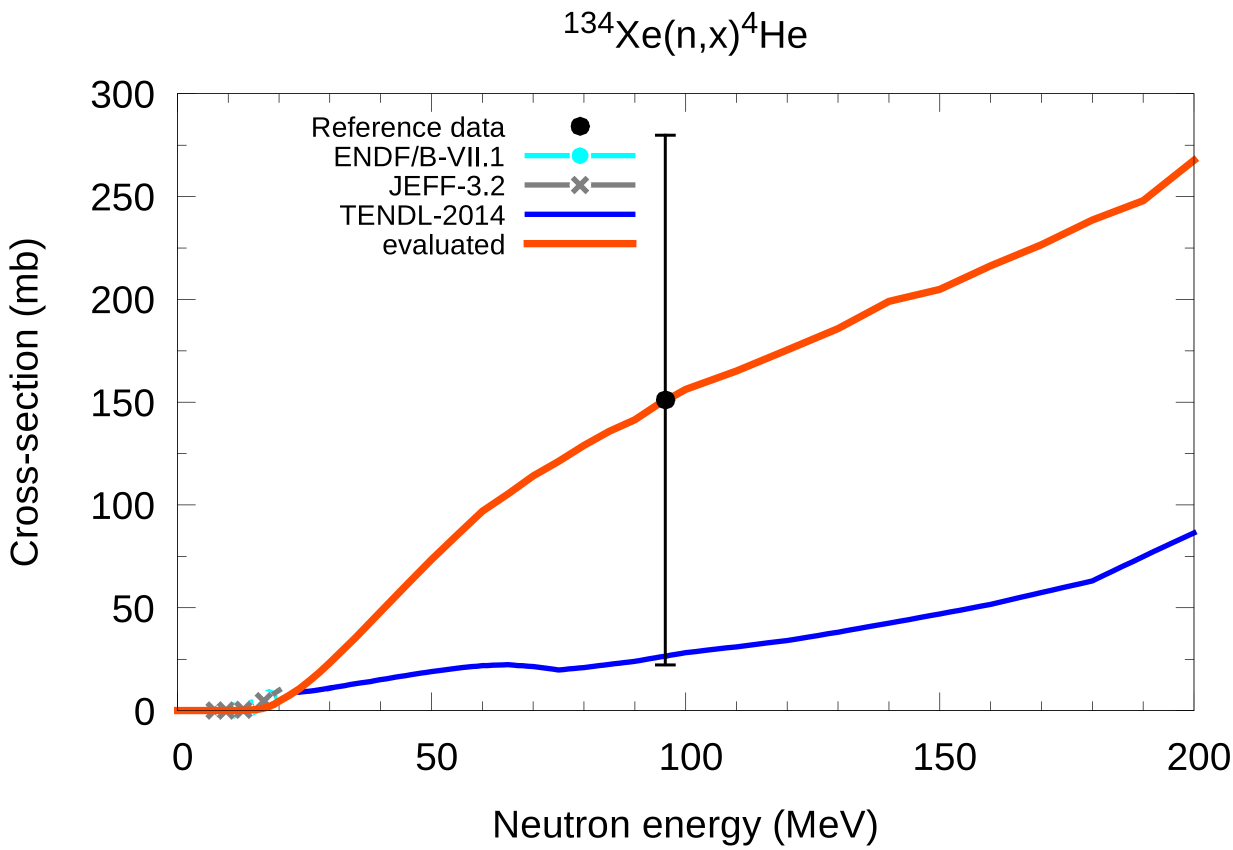
$^{130}Xe(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



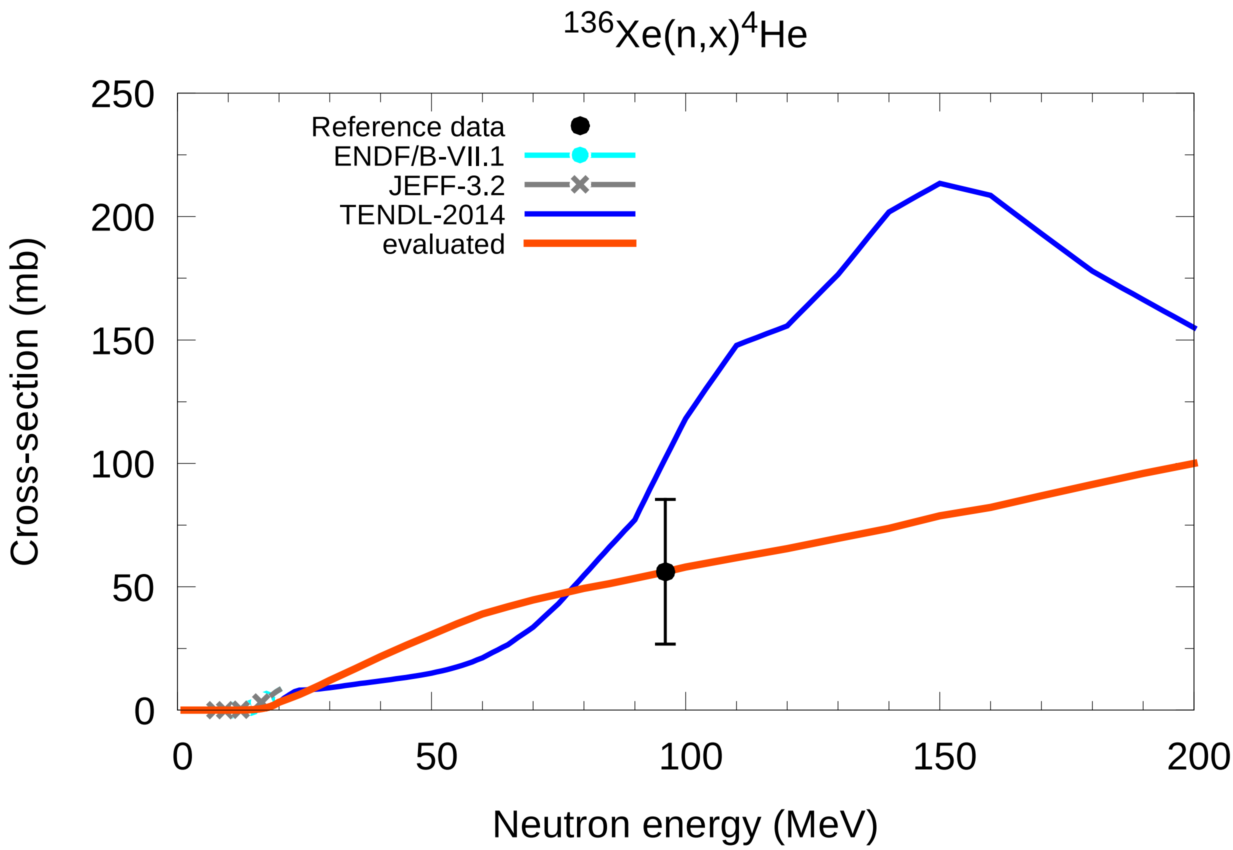
$^{131}Xe(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200



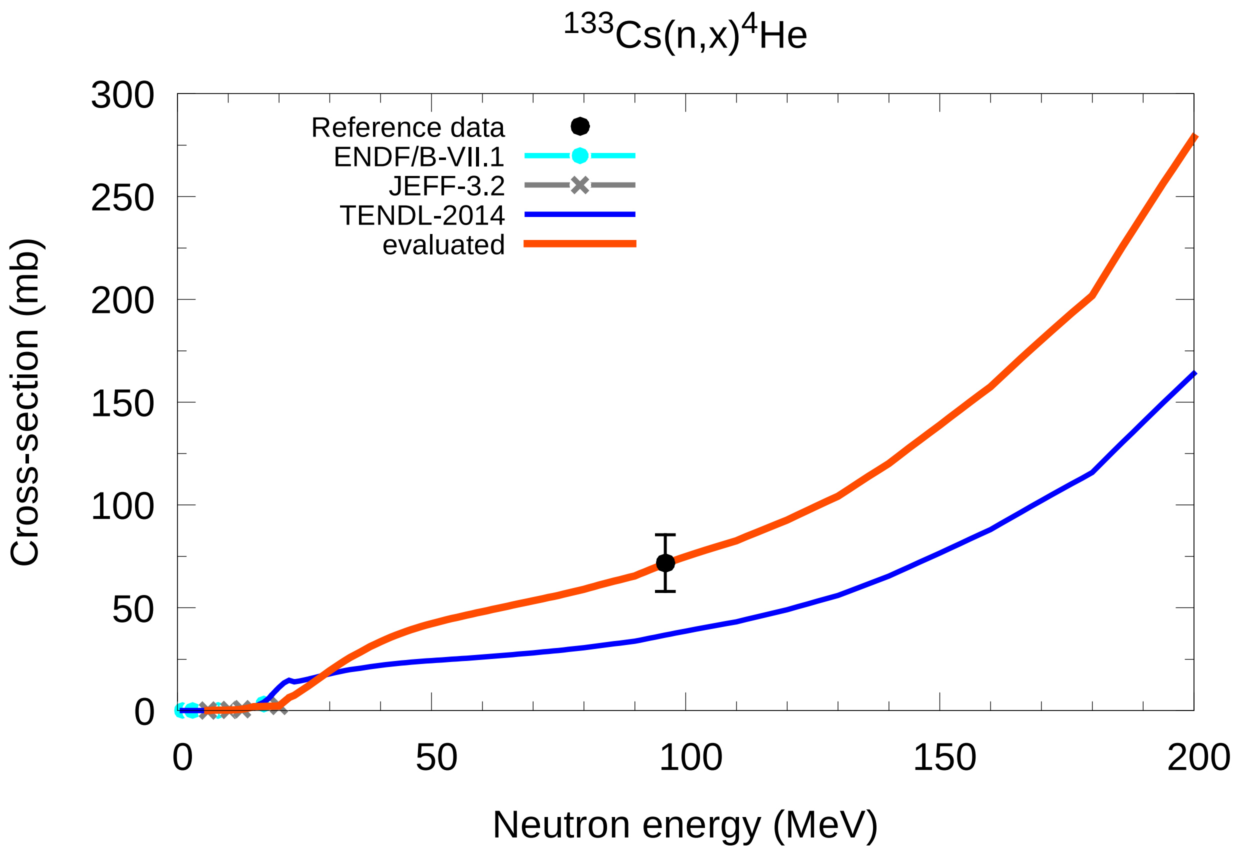
$^{132}Xe(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
0
50
100
150
200



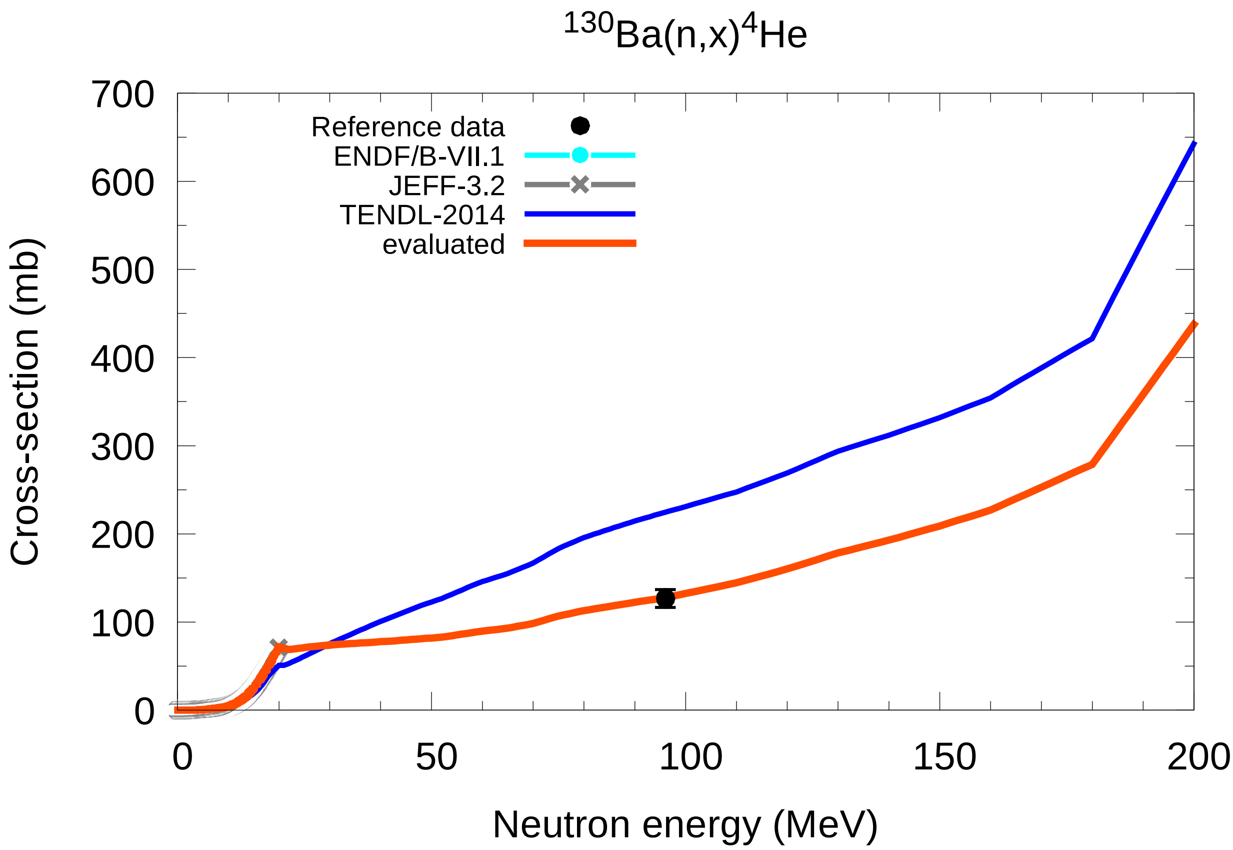
$^{134}Xe(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



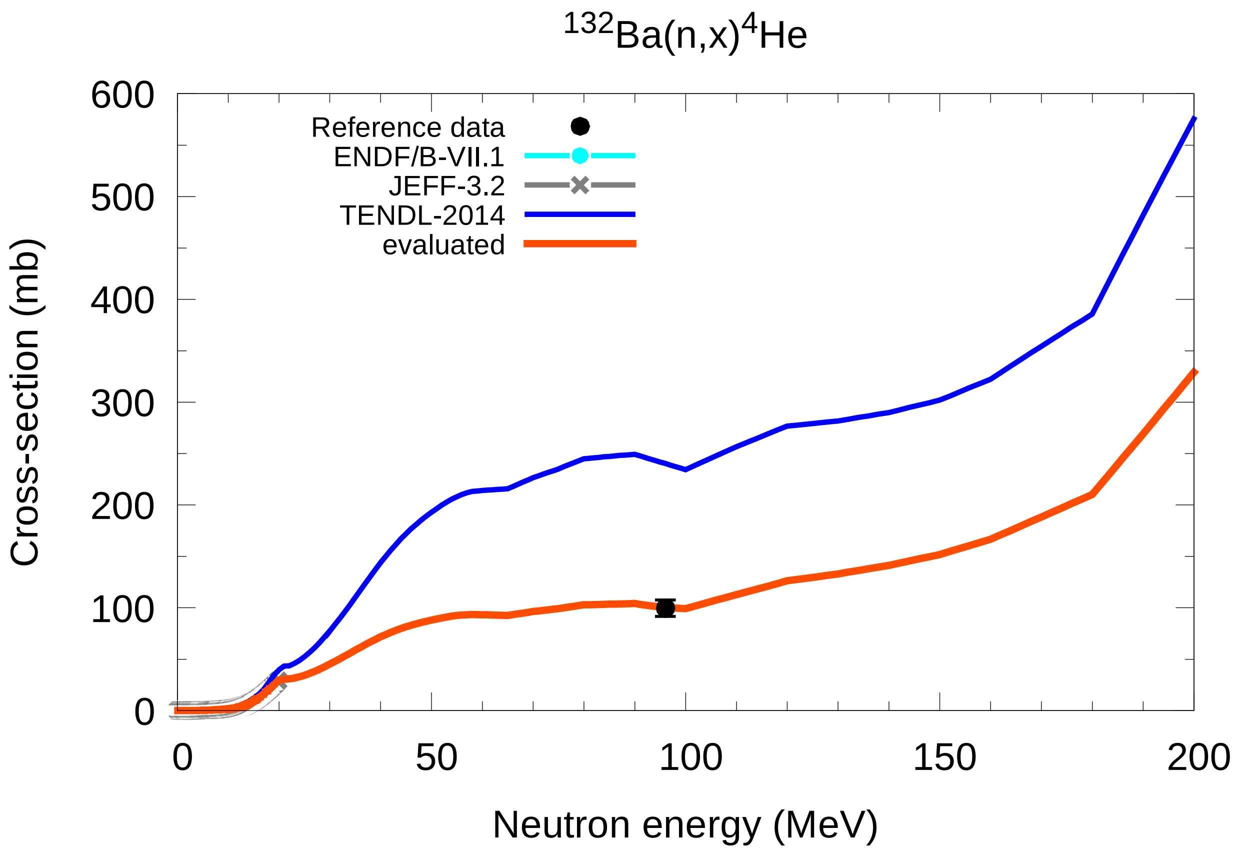
$^{136}Xe(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



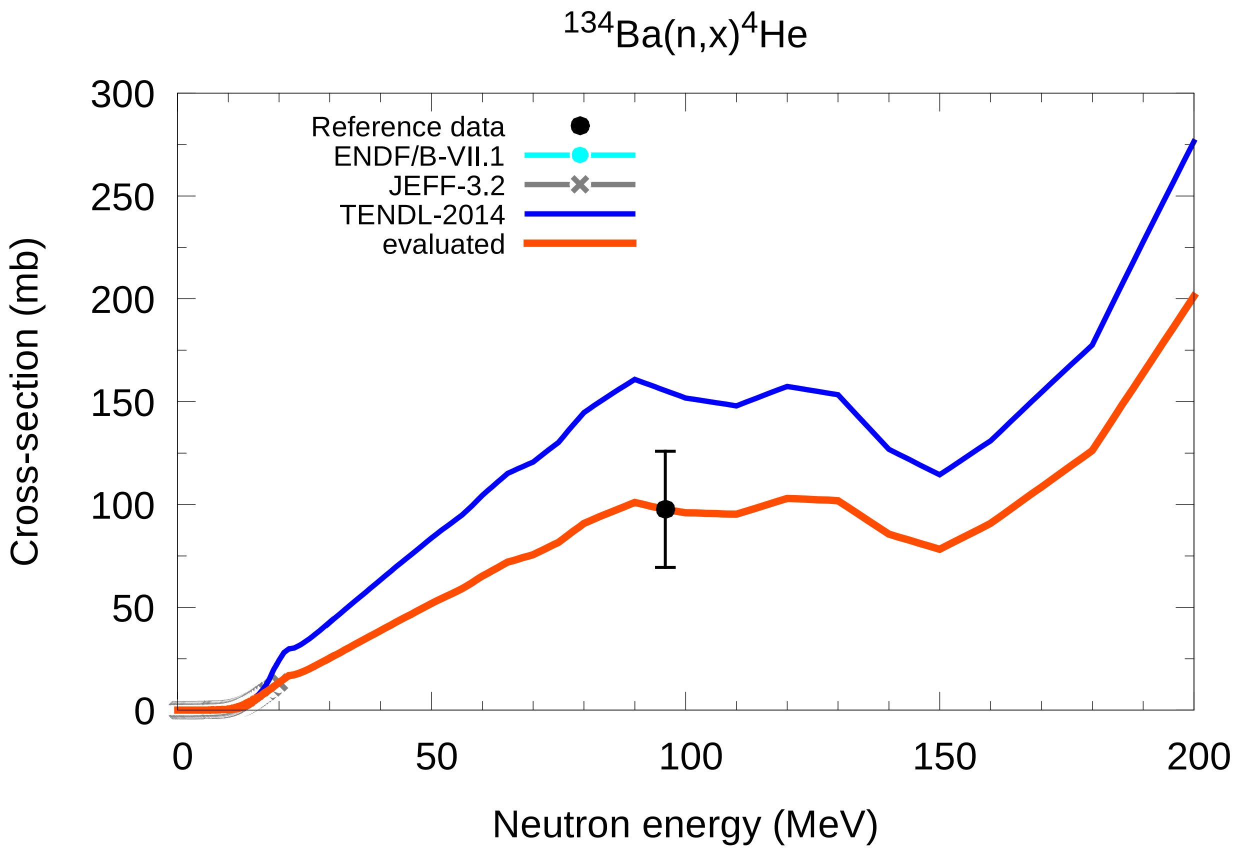
$^{133}Cs(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



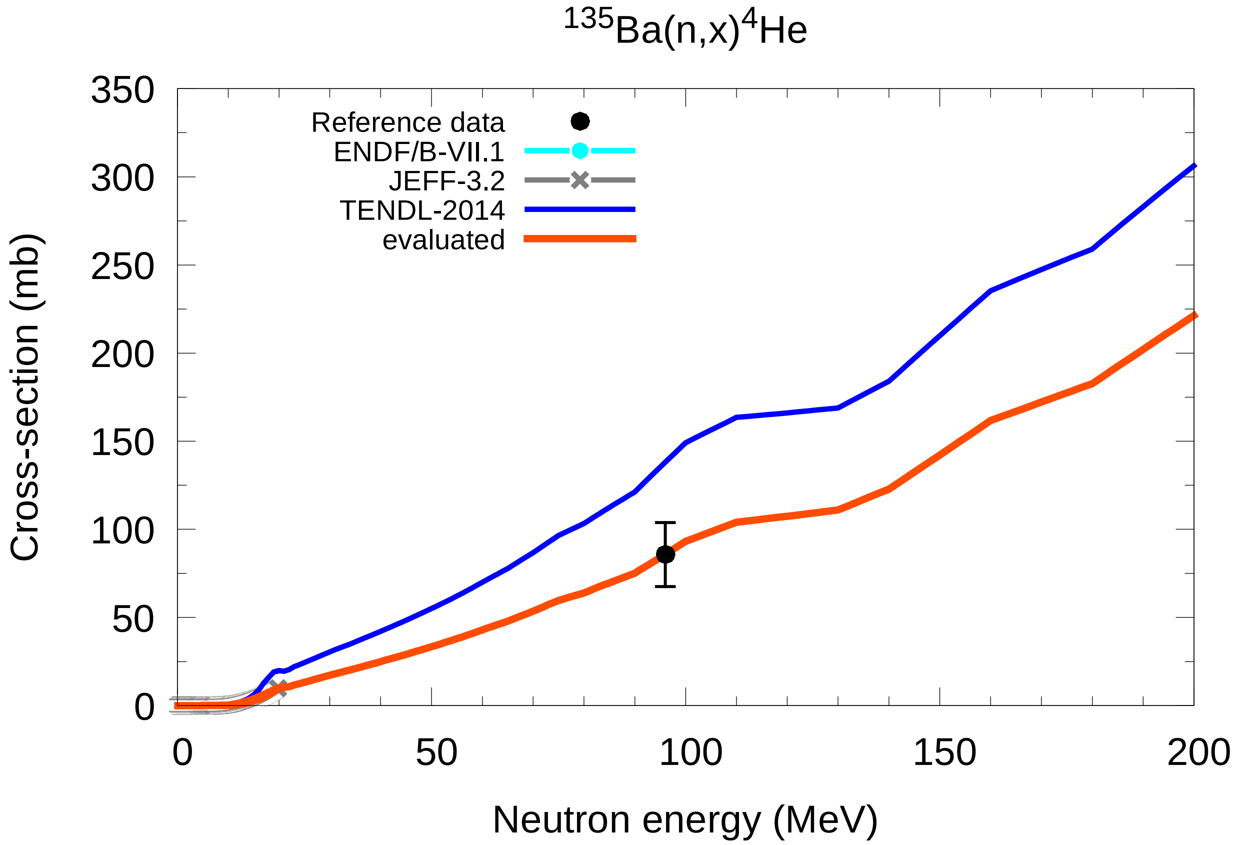
$^{130}Ba(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
300
400
500
600
700



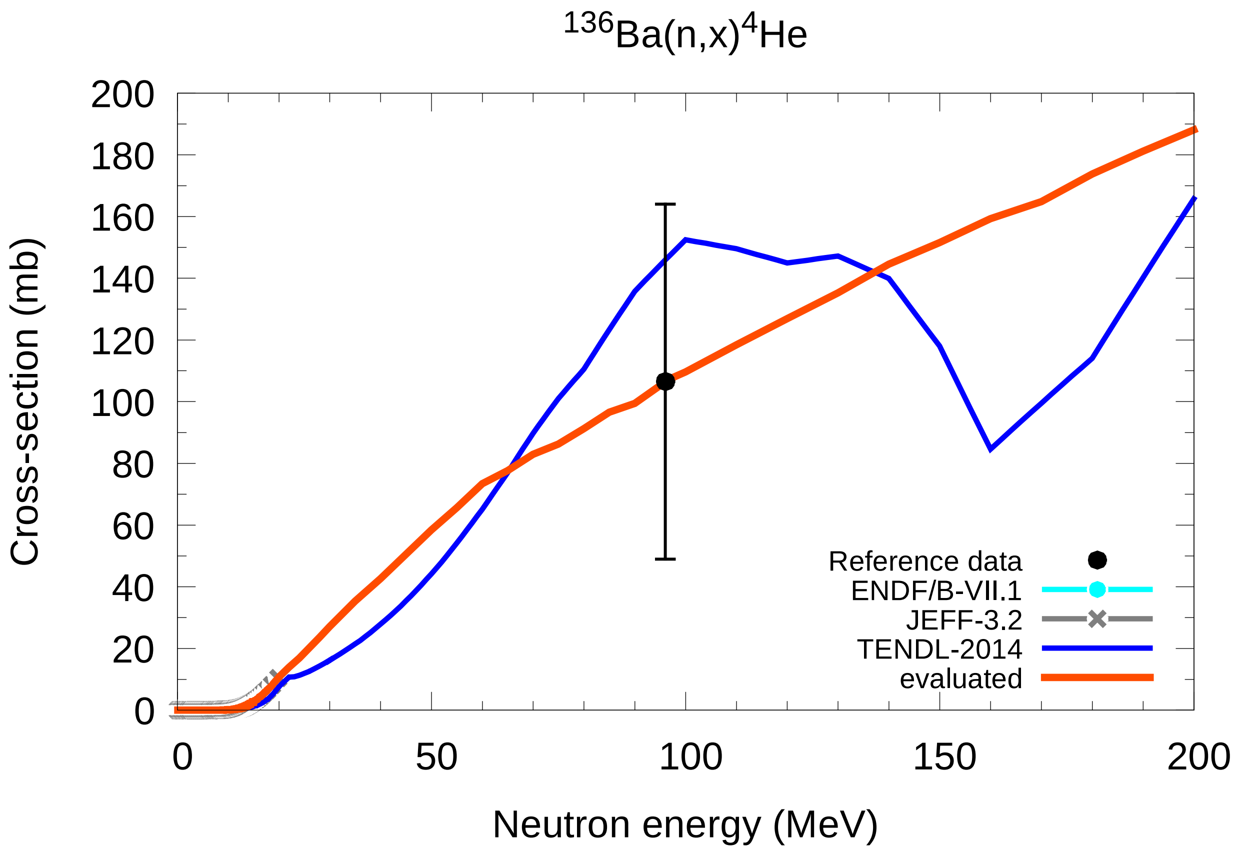
^{132}Ba(n,x)^{4}He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



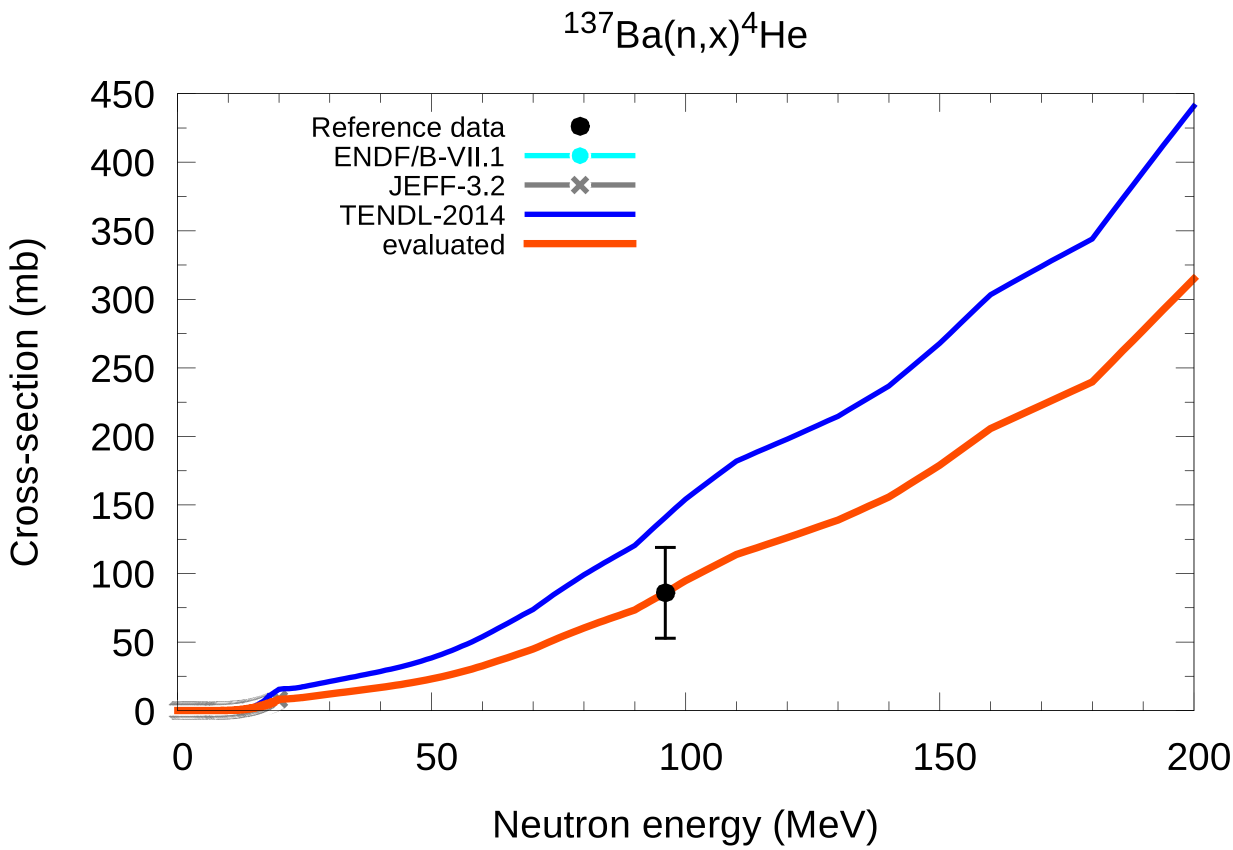
^{134}Ba(n,x)^{4}He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
0
50
100
150
200



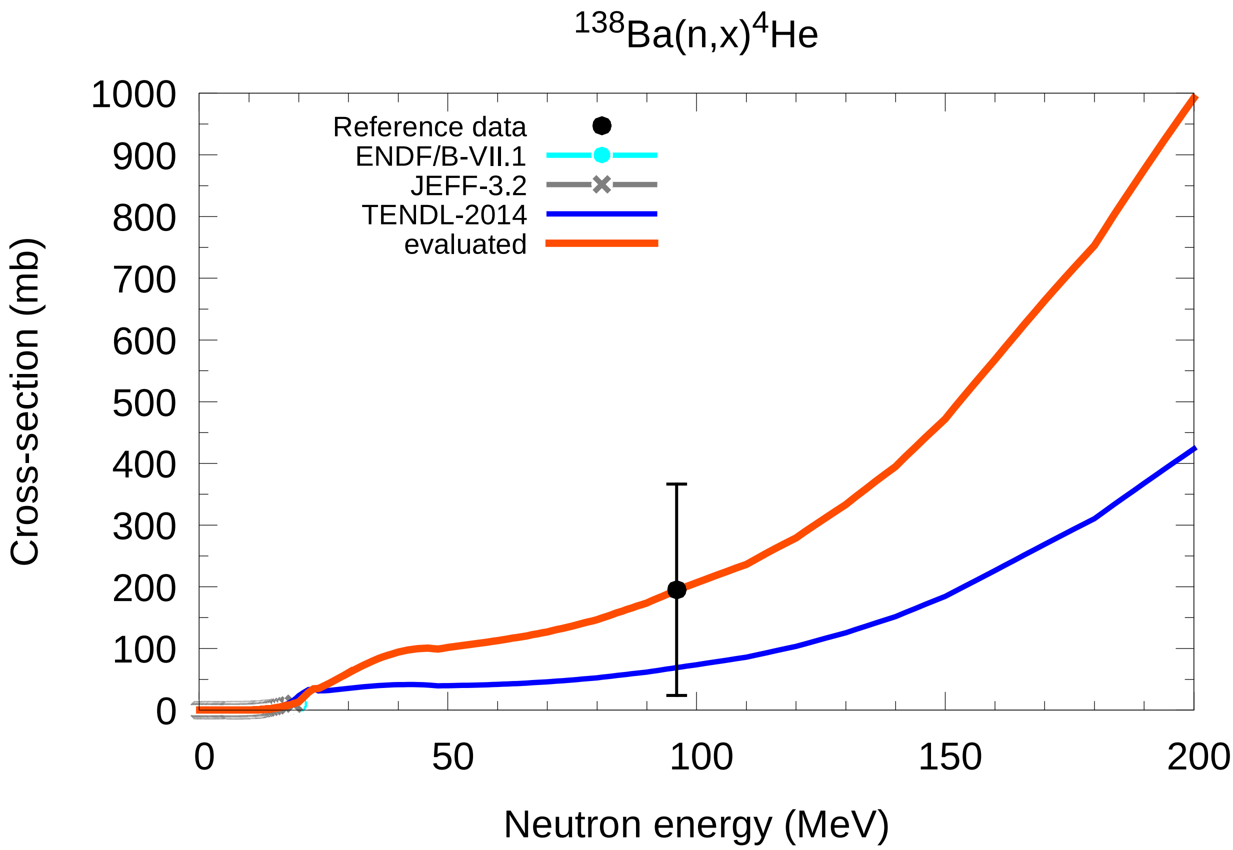
135Ba(n,x)4He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



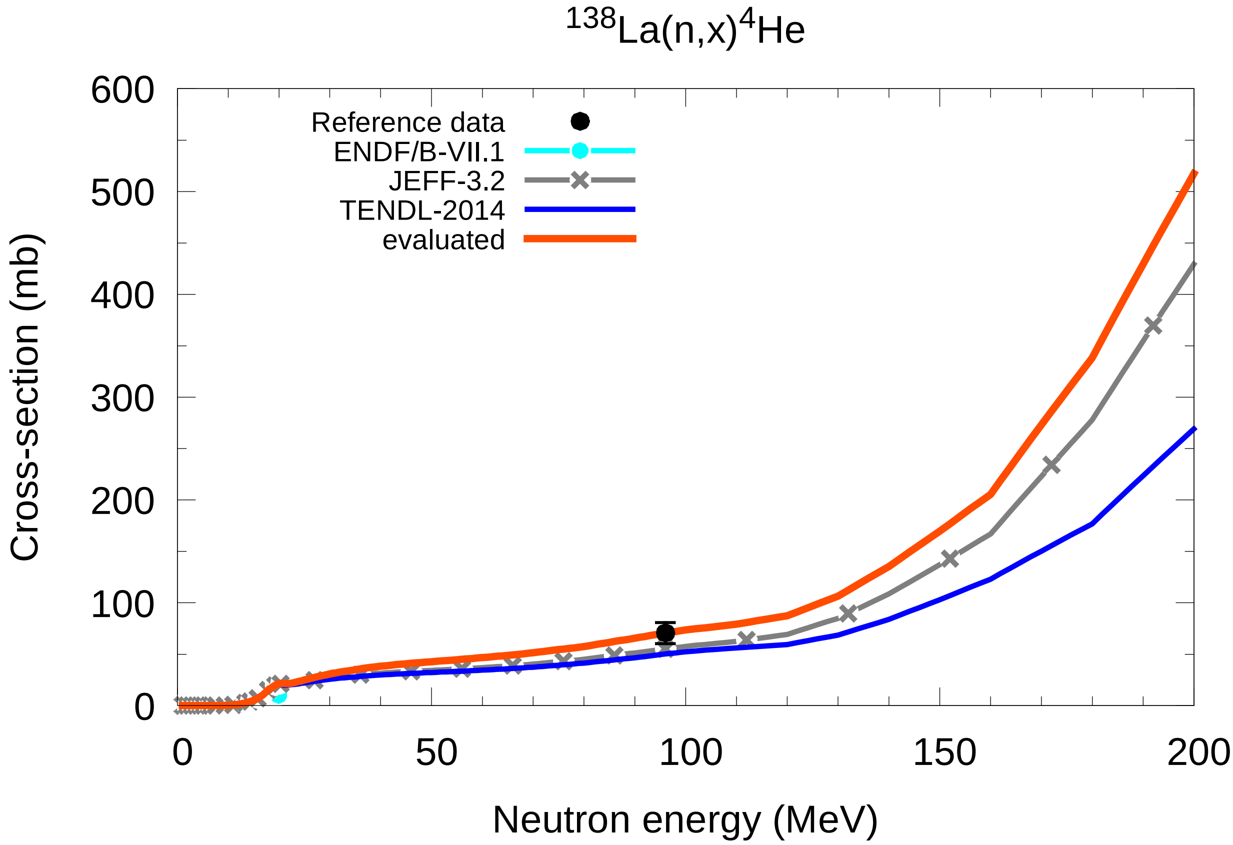
136Ba(n,x)4He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200



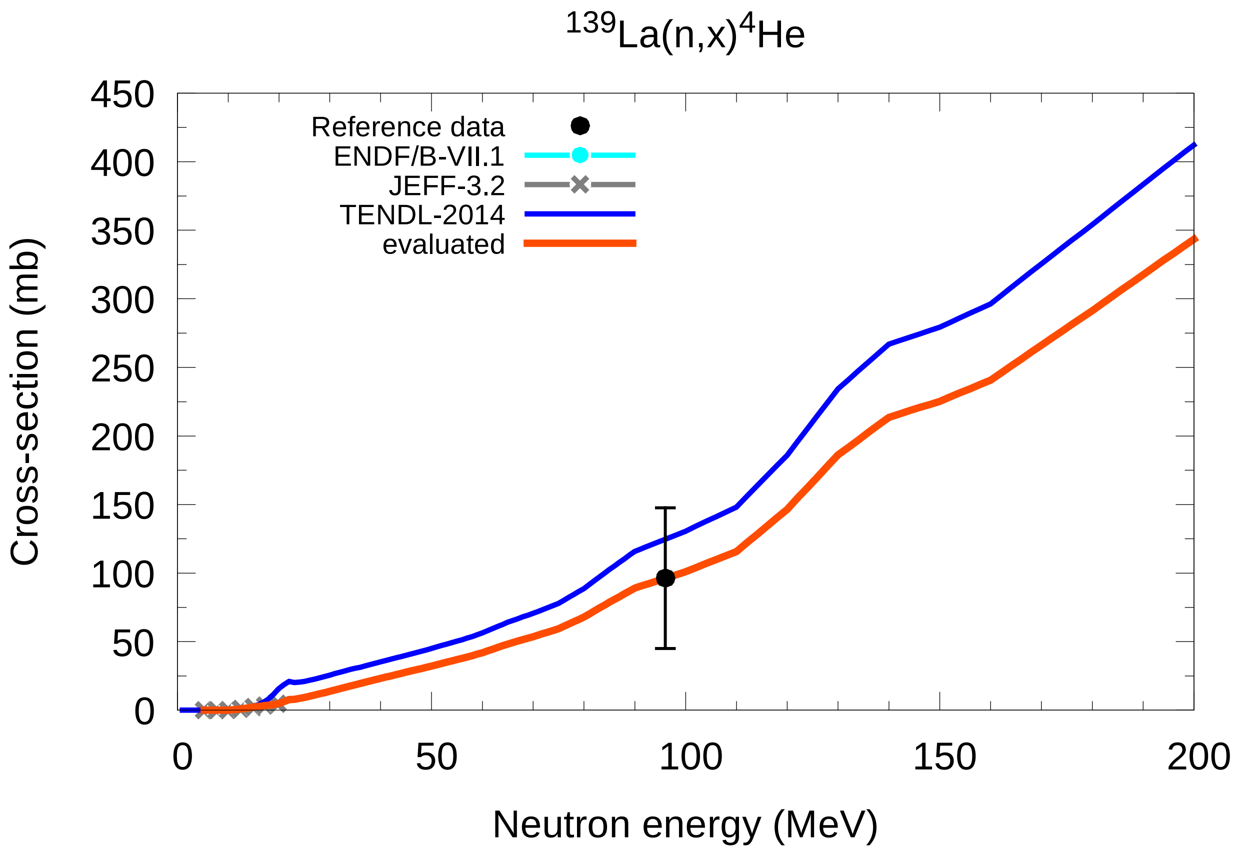
$^{137}Ba(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



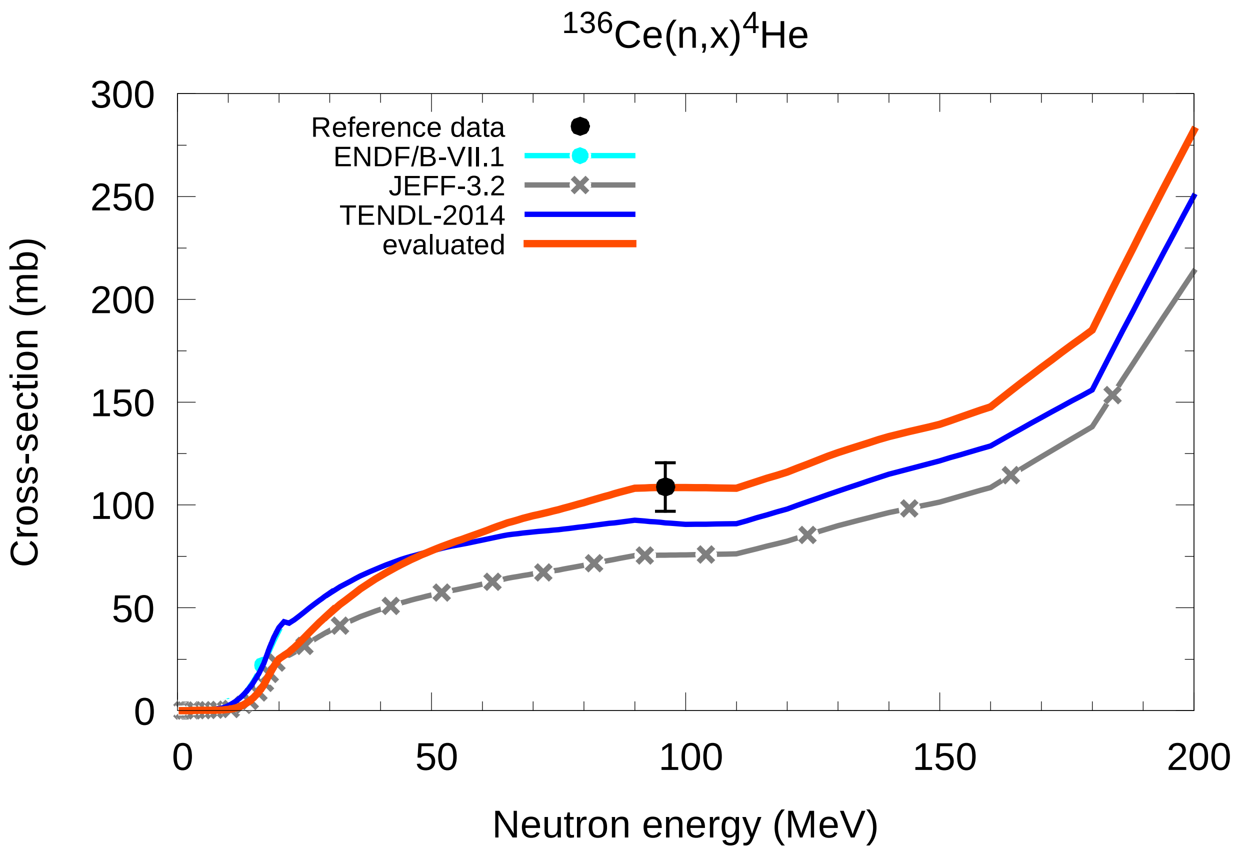
$^{138}Ba(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
1000
50
150



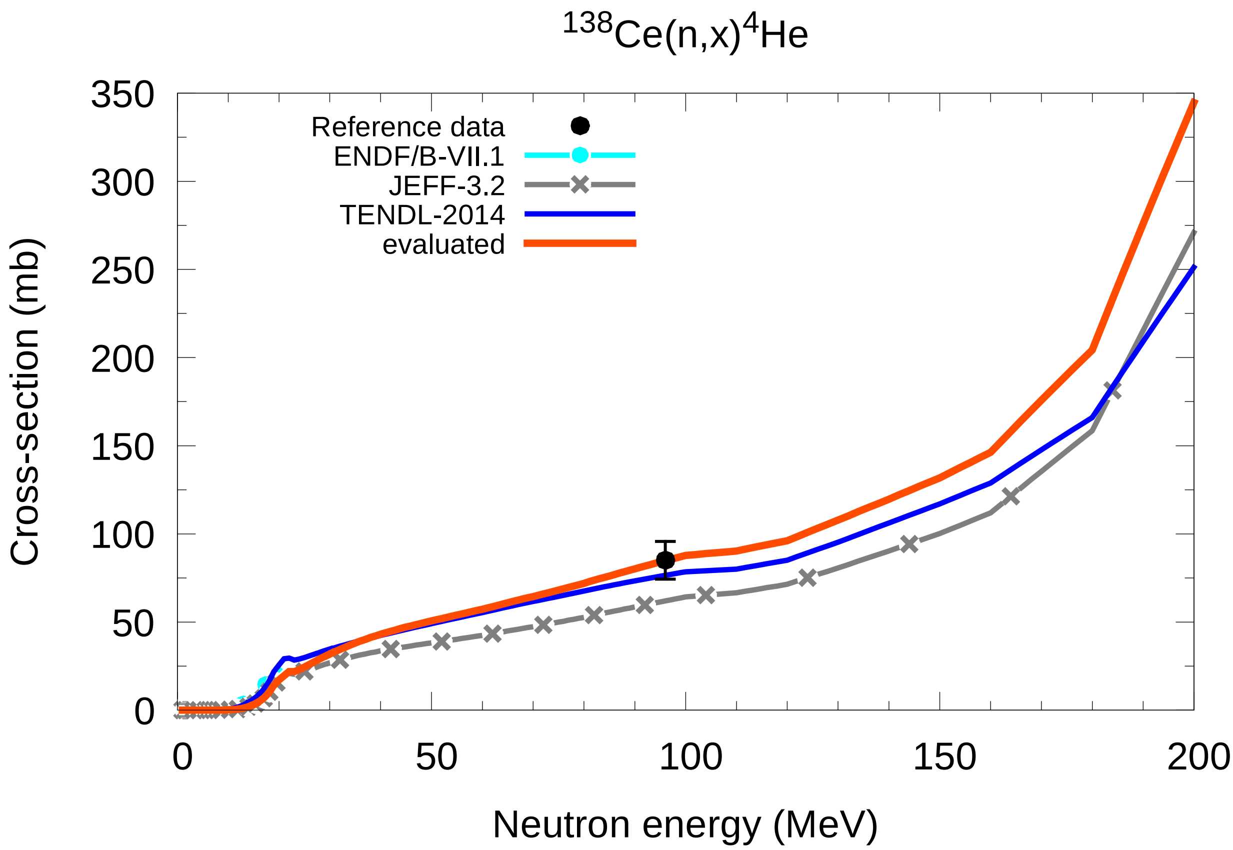
$^{138}La(n,x)^4He$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
100
200
300
400
500
600
0
50
100
150
200



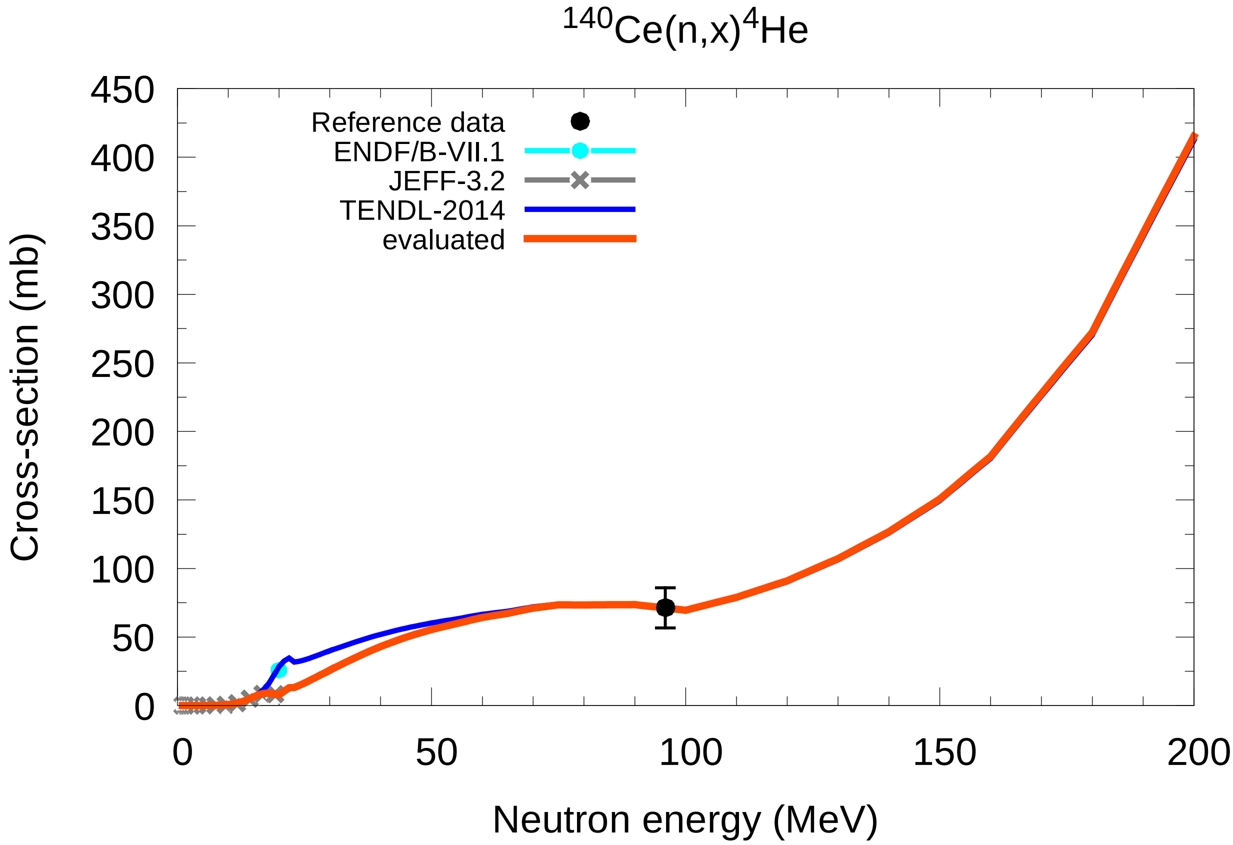
$^{139}La(n,x)^4He$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300
350
400
450
0
50
100
150
200



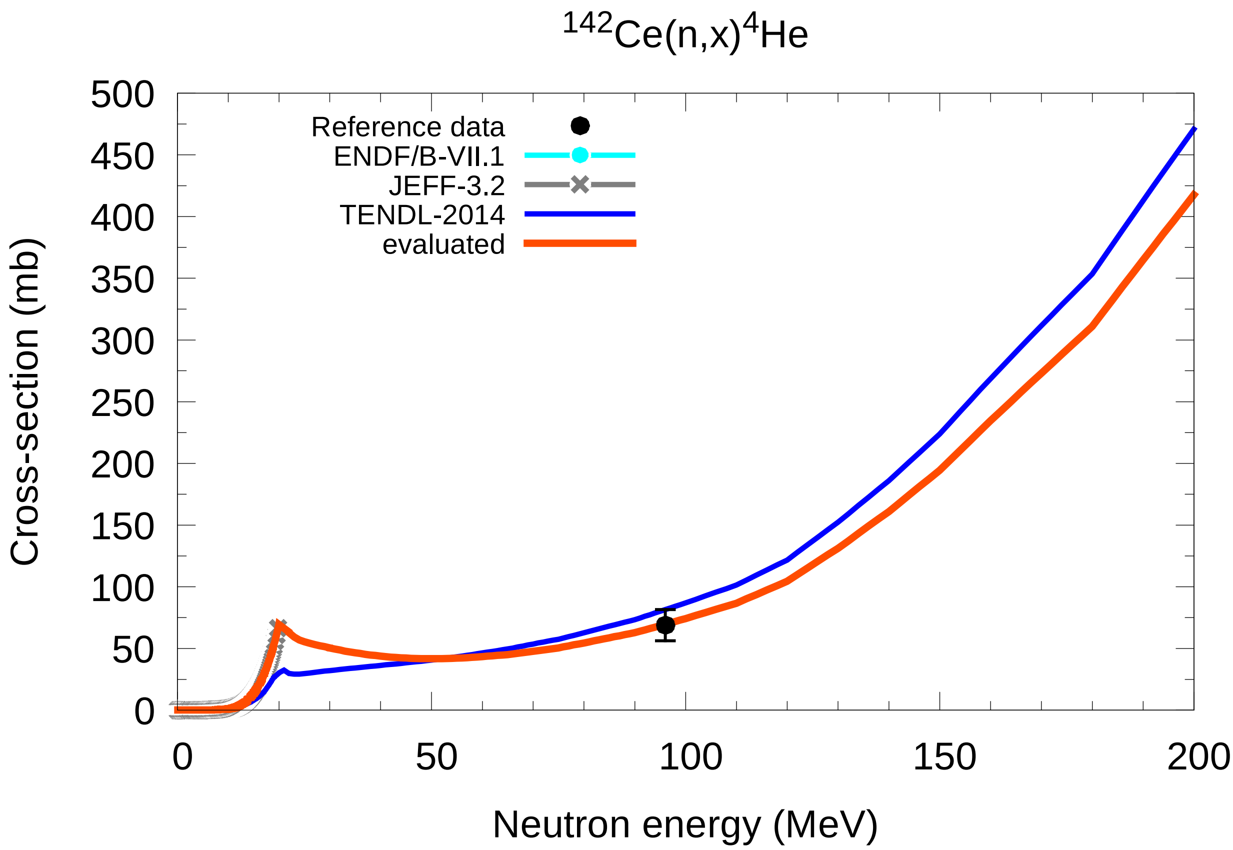
$^{136}Ce(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



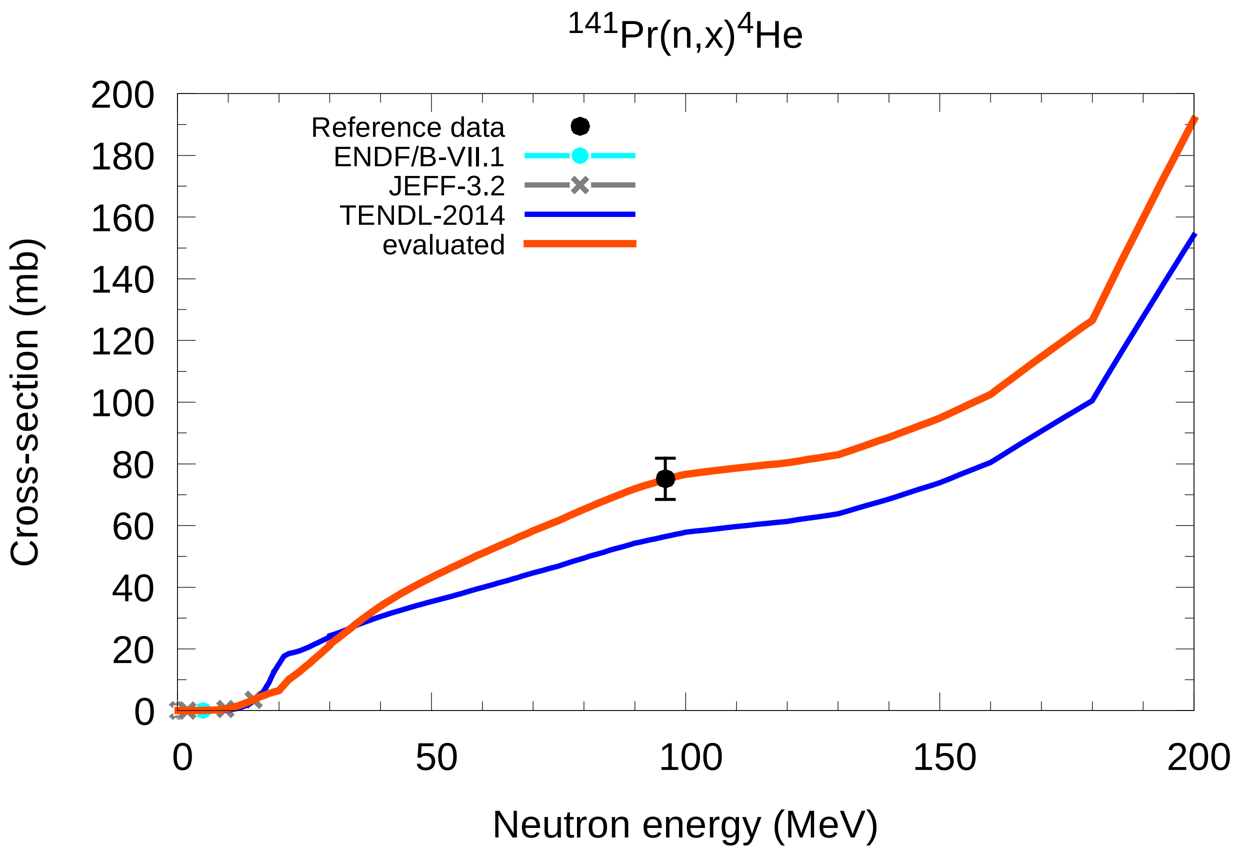
$^{138}Ce(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



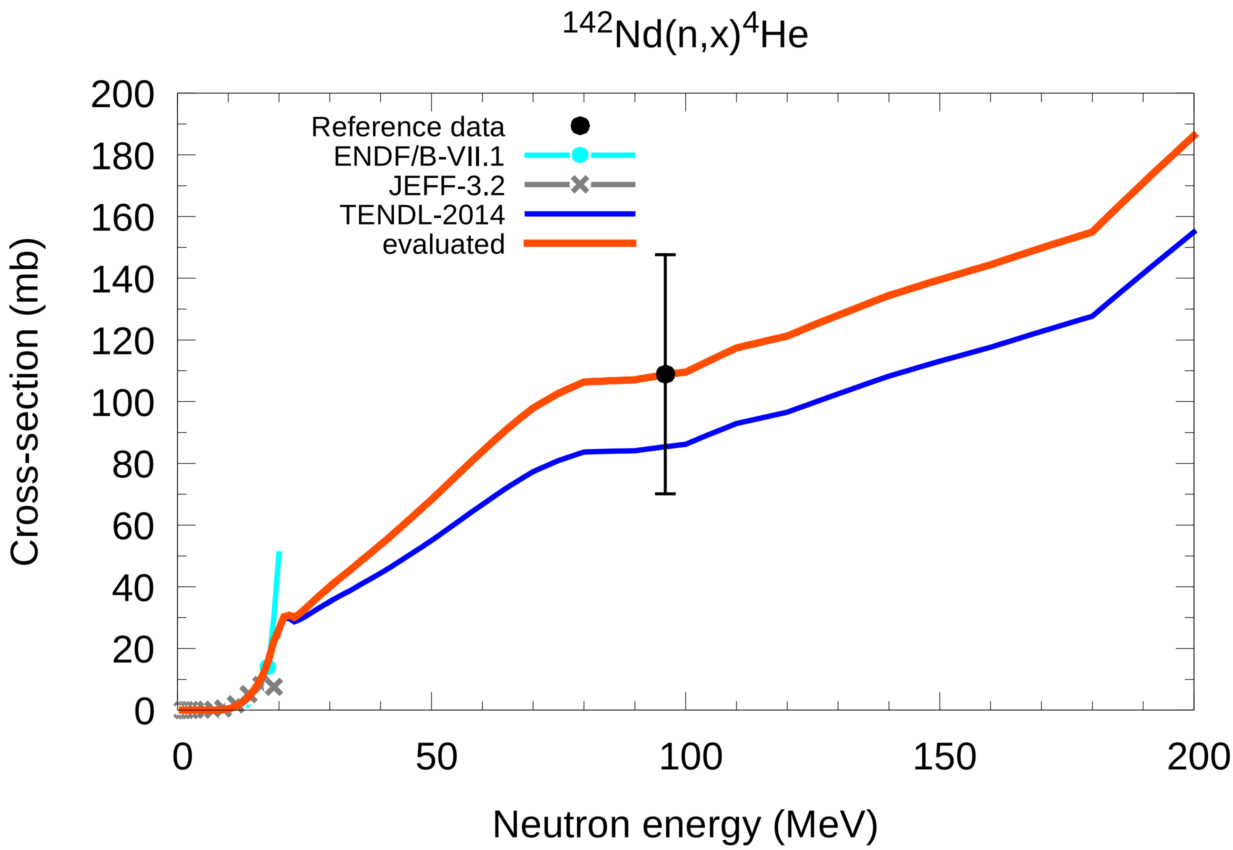
$^{140}Ce(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



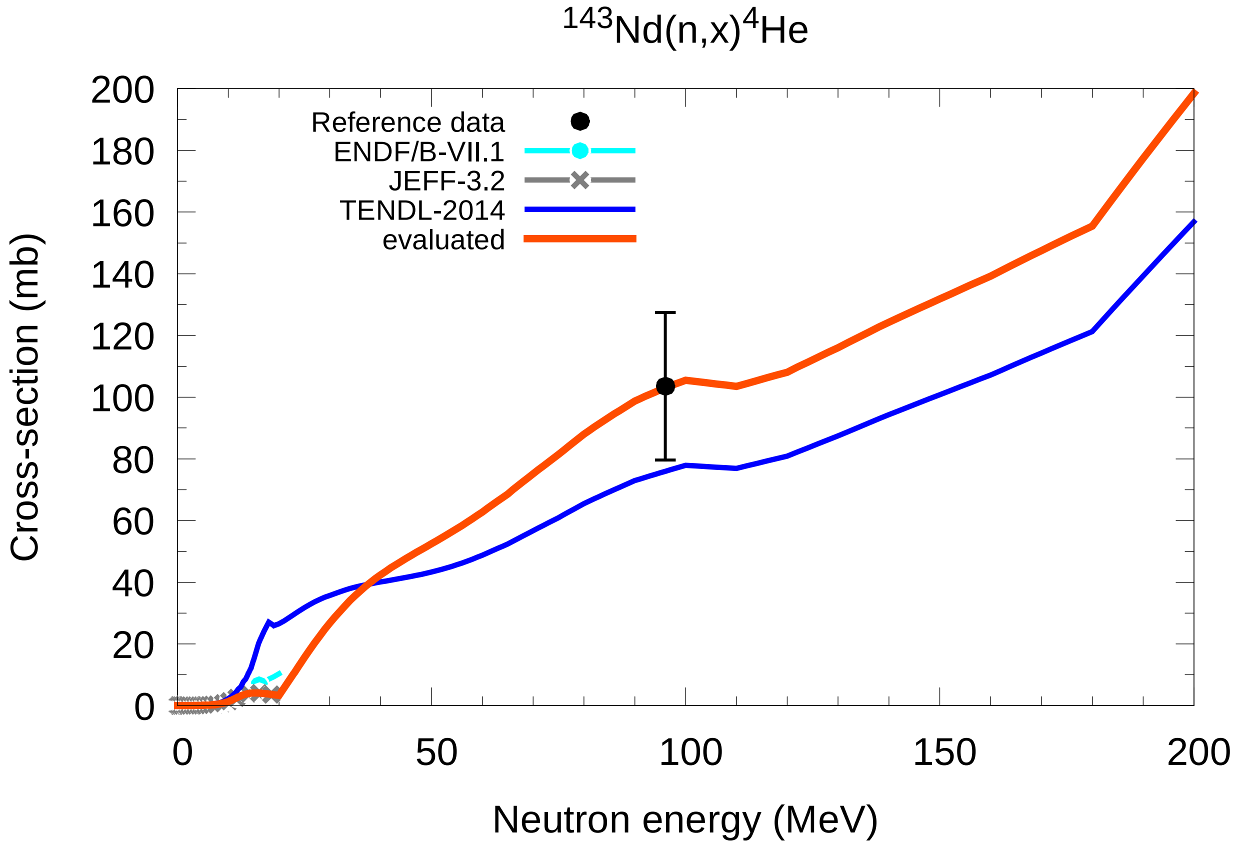
$^{142}Ce(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500

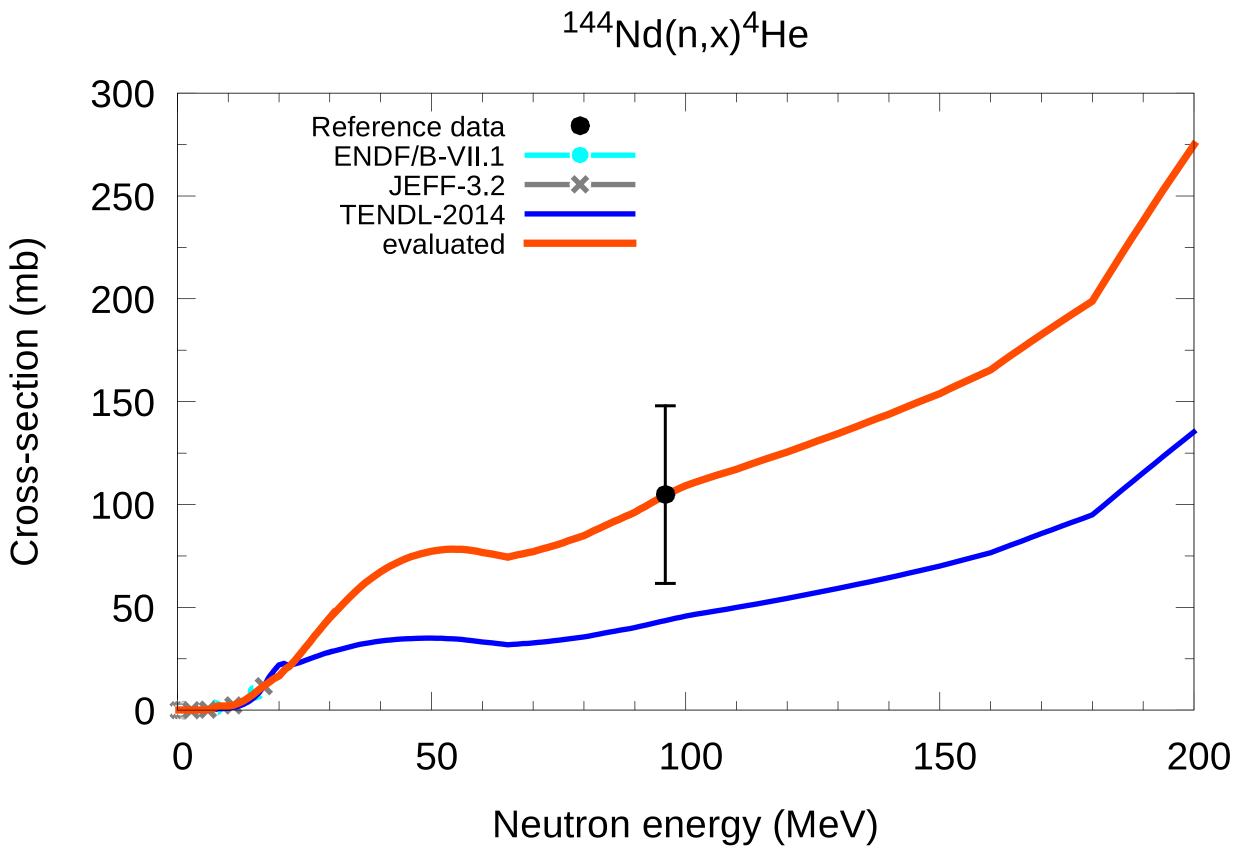


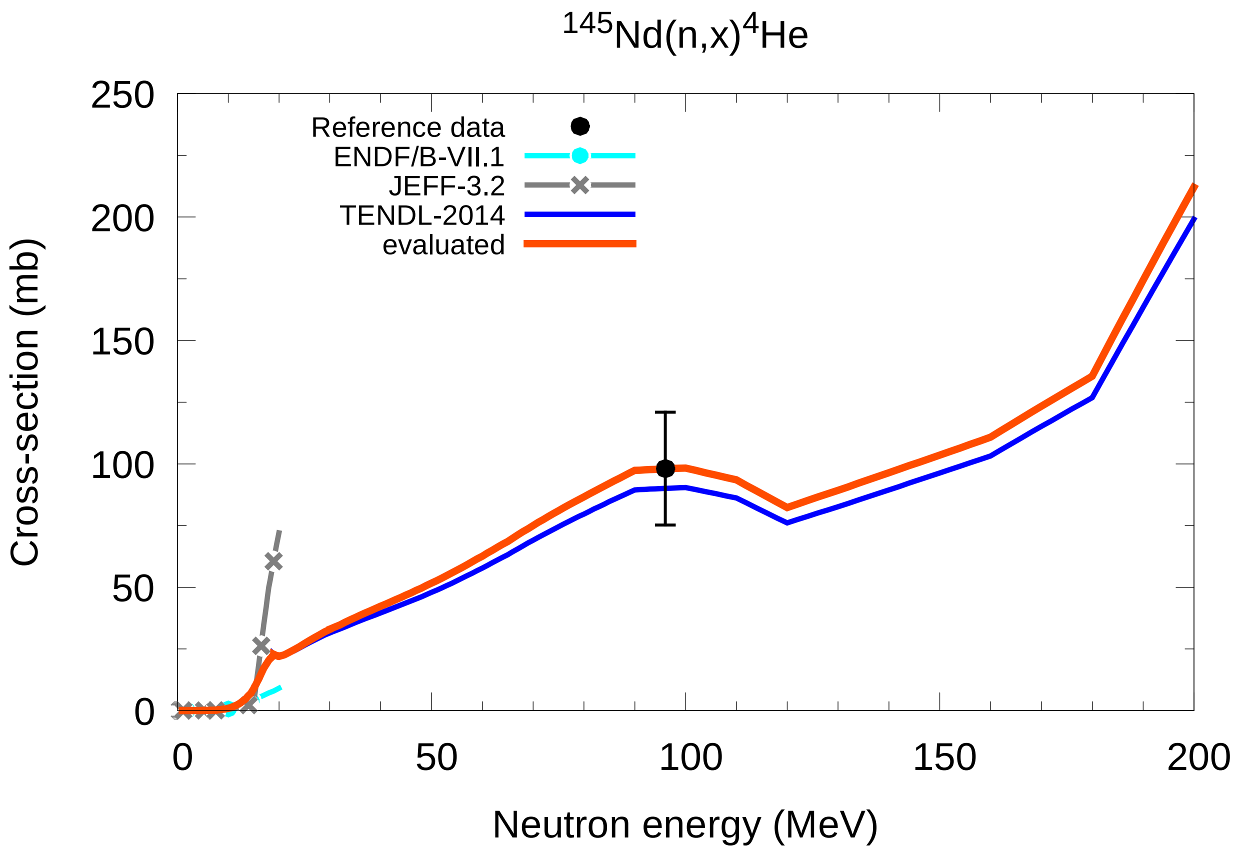
141Pr(n,x)4He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200



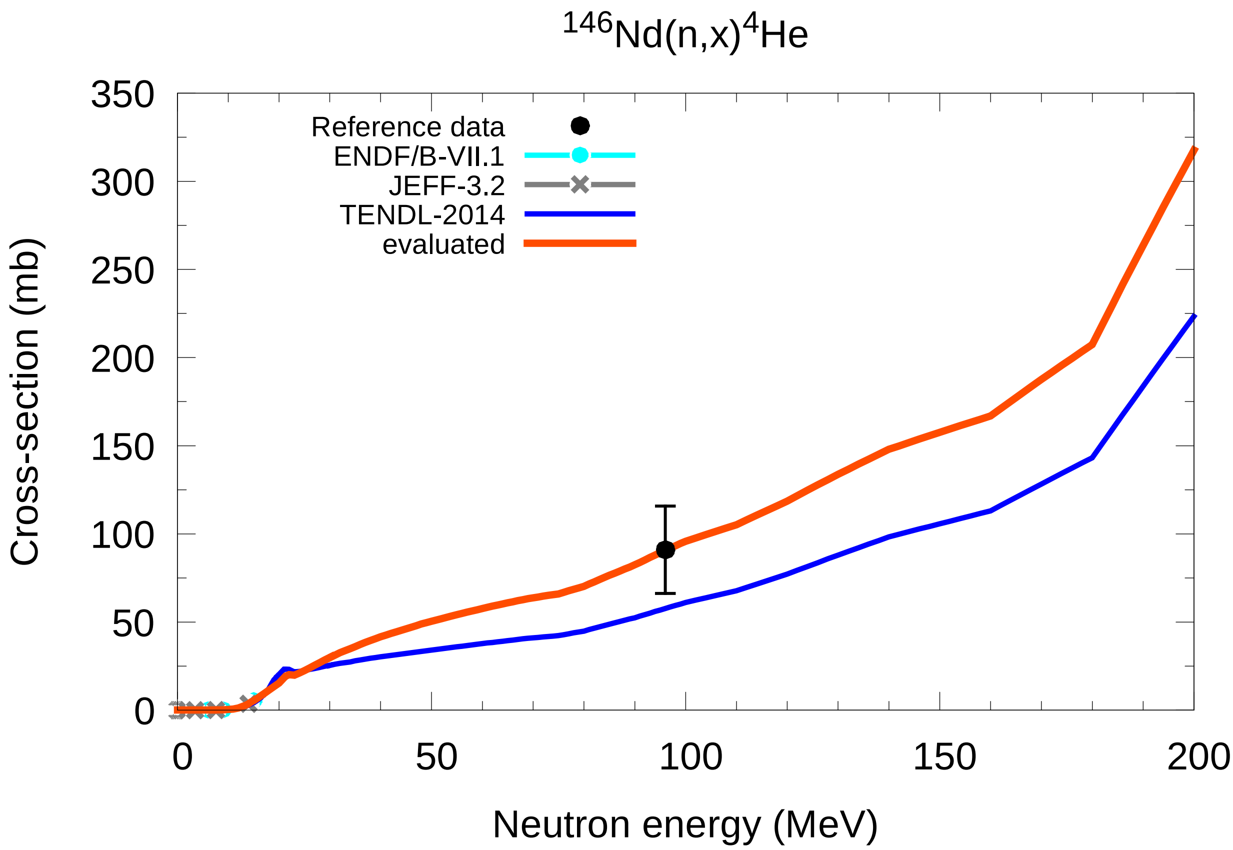
142Nd(n,x)4He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200


^{143}Nd(n,x)^{4}He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200

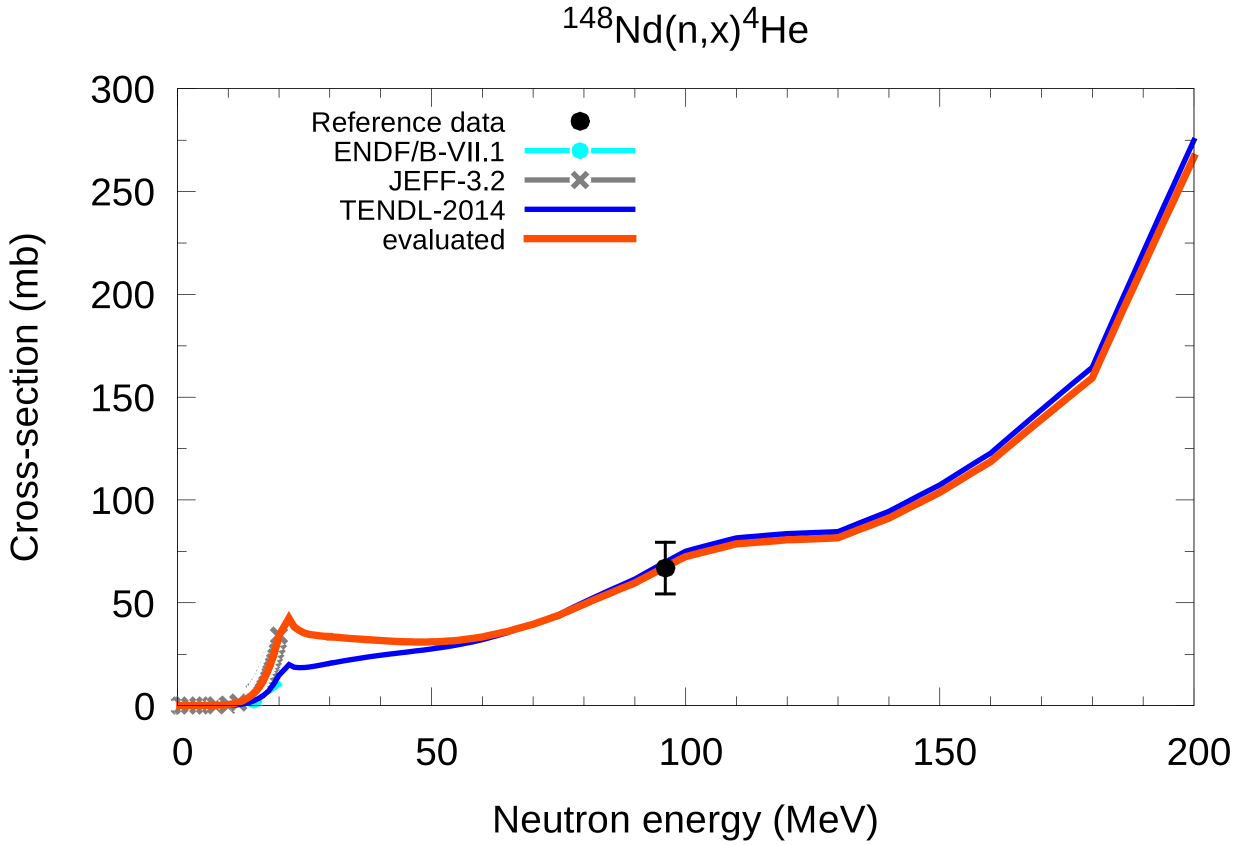

^{144}Nd(n,x)^{4}He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
0
50
100
150
200

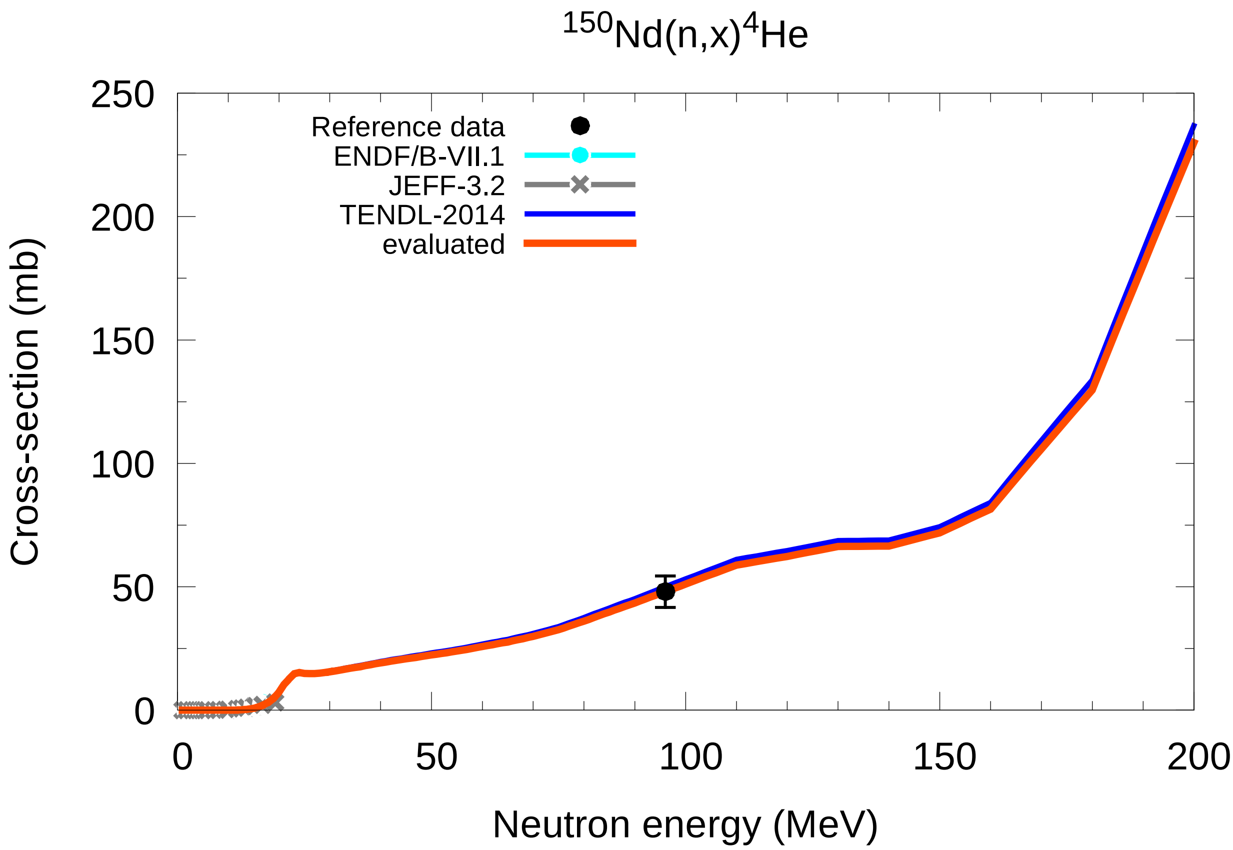


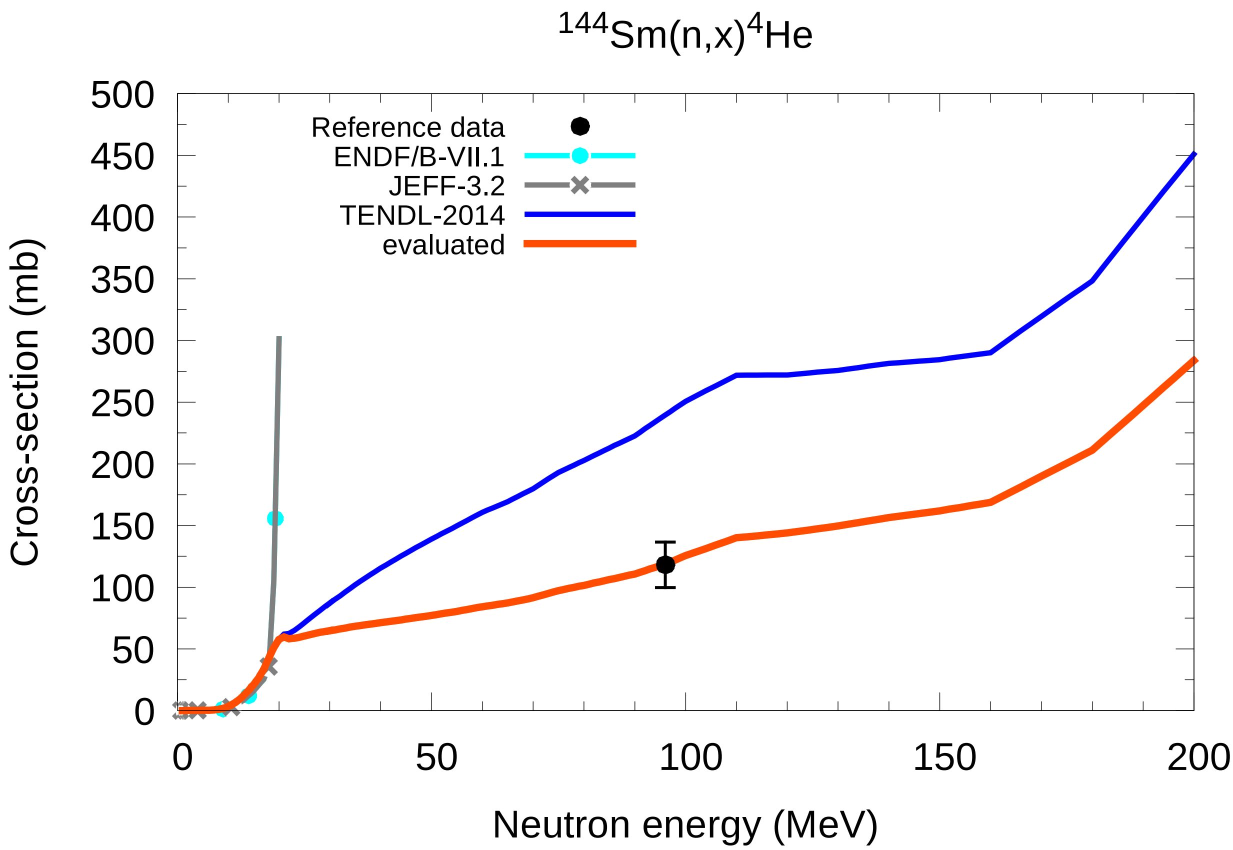
$^{145}Nd(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



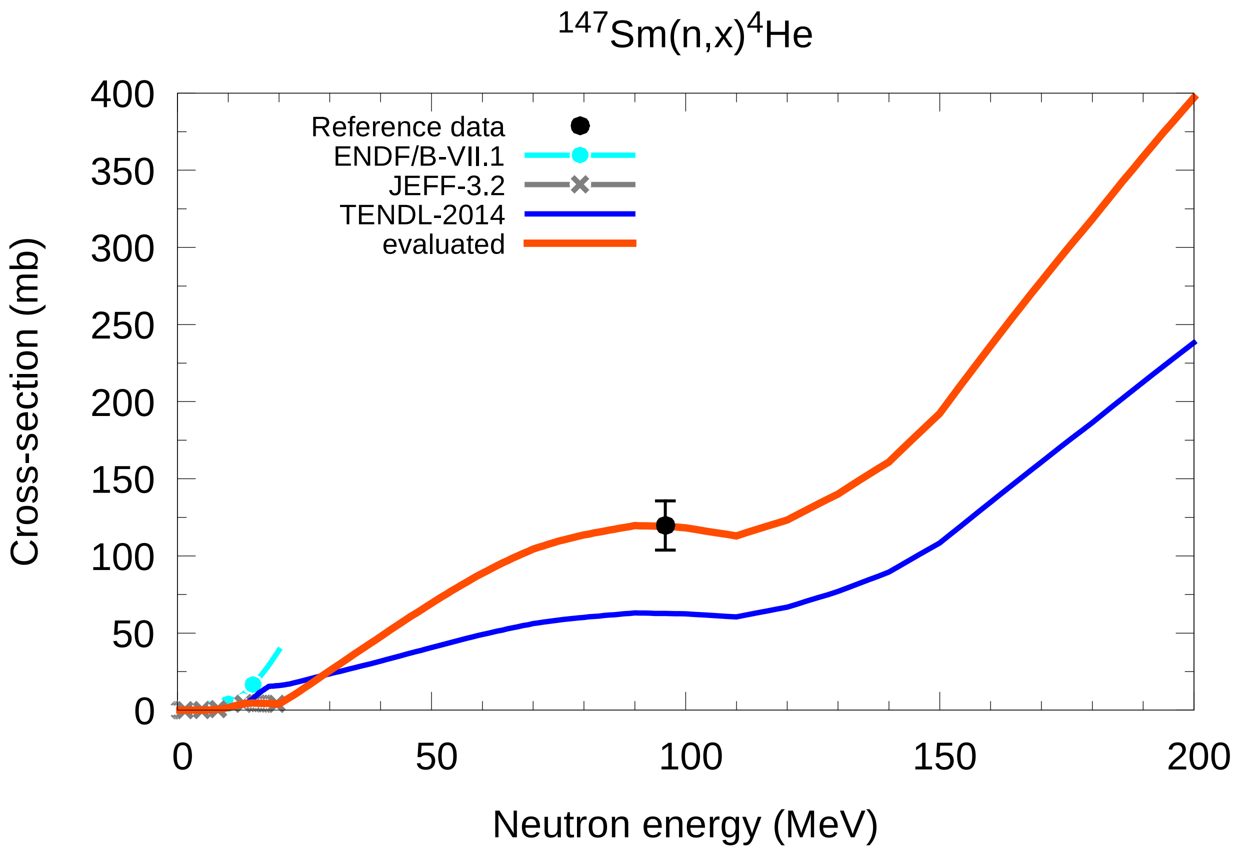
$^{146}Nd(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350


$^{148}Nd(n,x)^{4}He$
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated

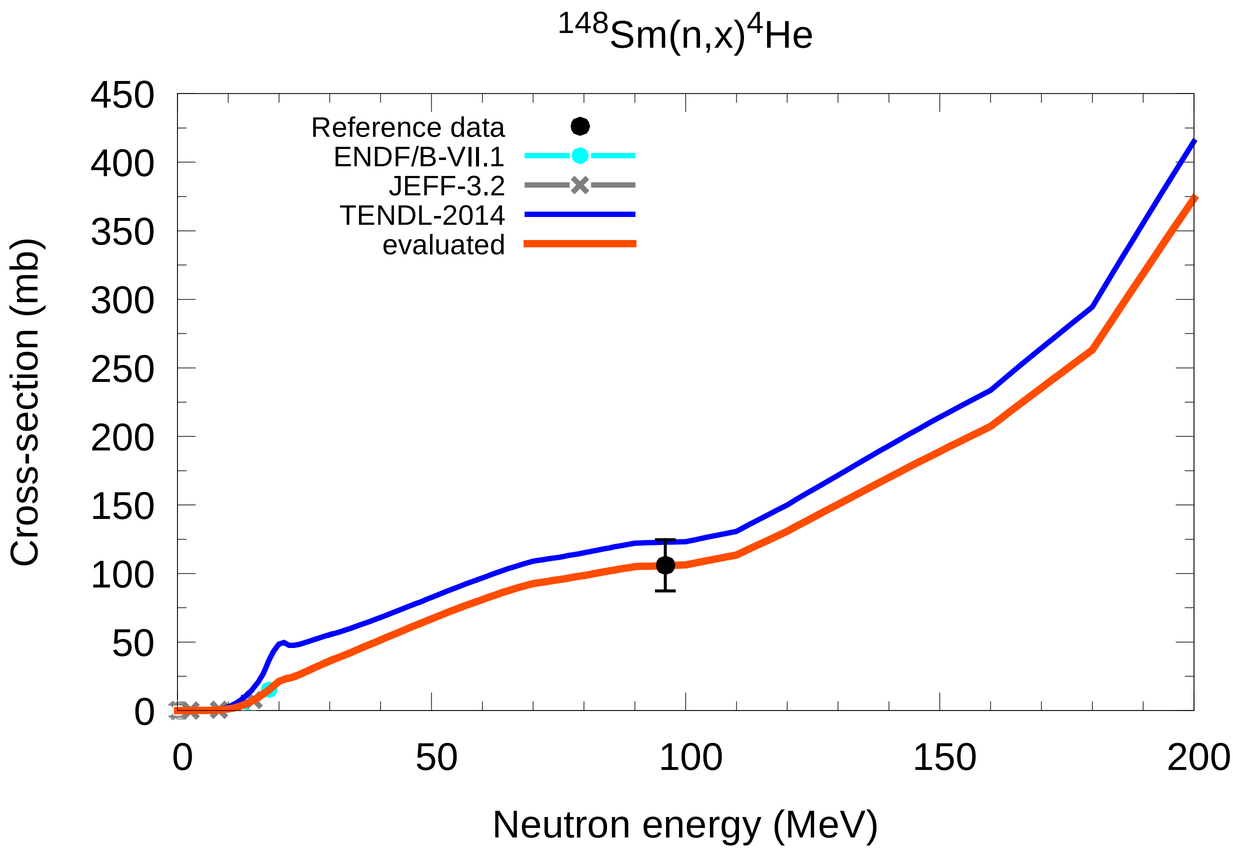

$^{150}Nd(n,x)^{4}He$
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated



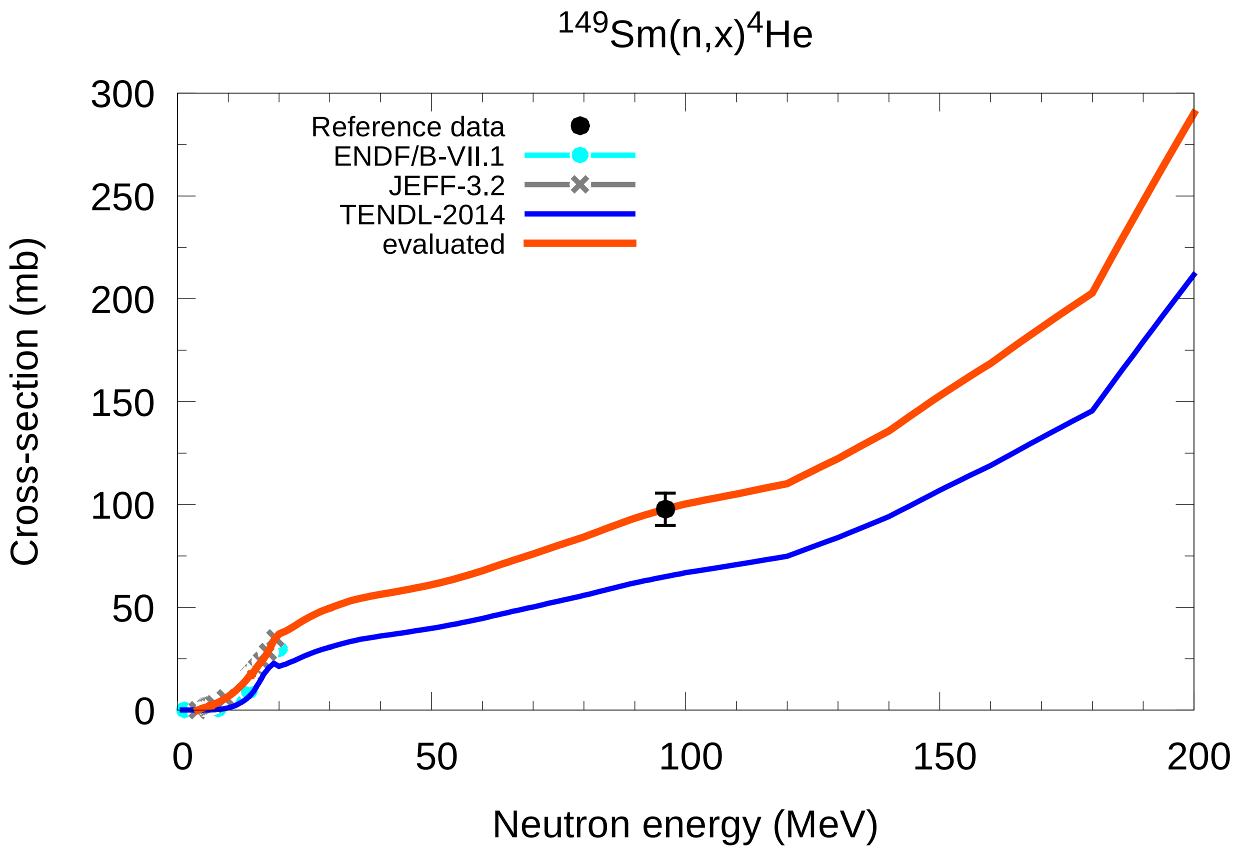
$^{144}Sm(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



$^{147}Sm(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400

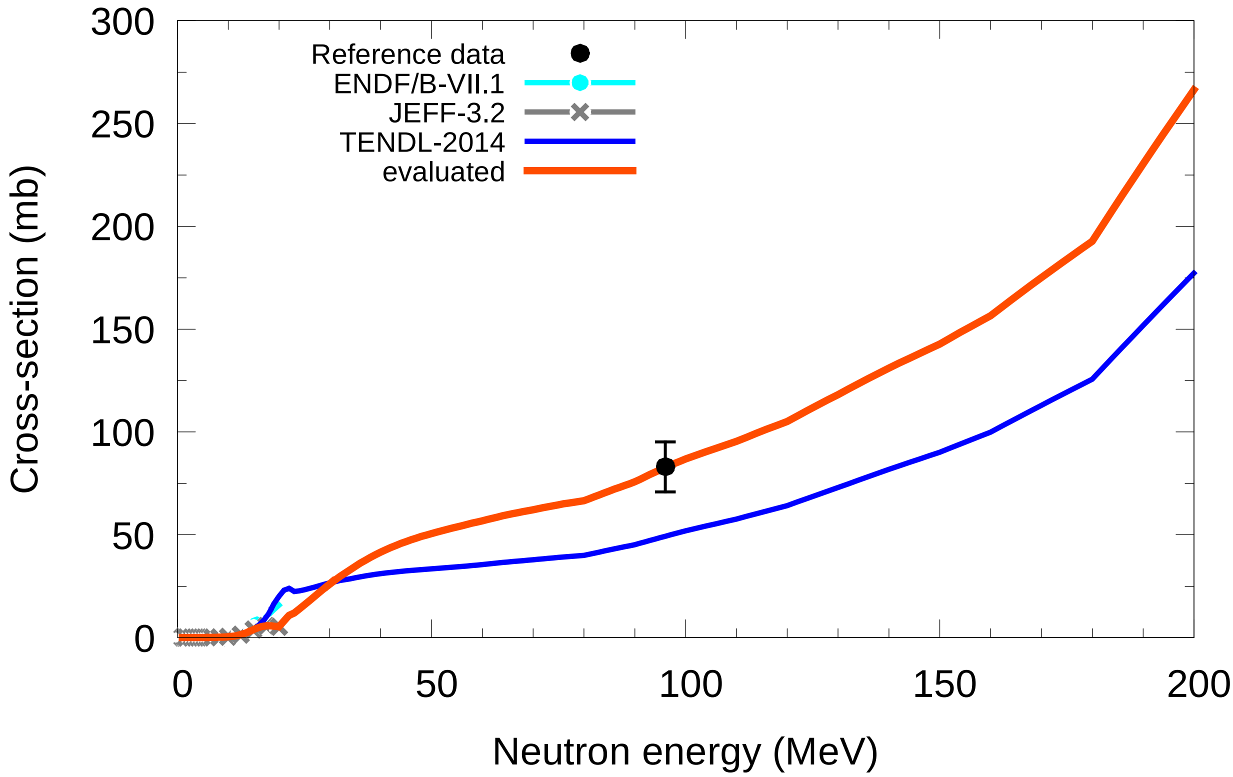


^{148}Sm(n,x)^{4}He
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300
350
400
450

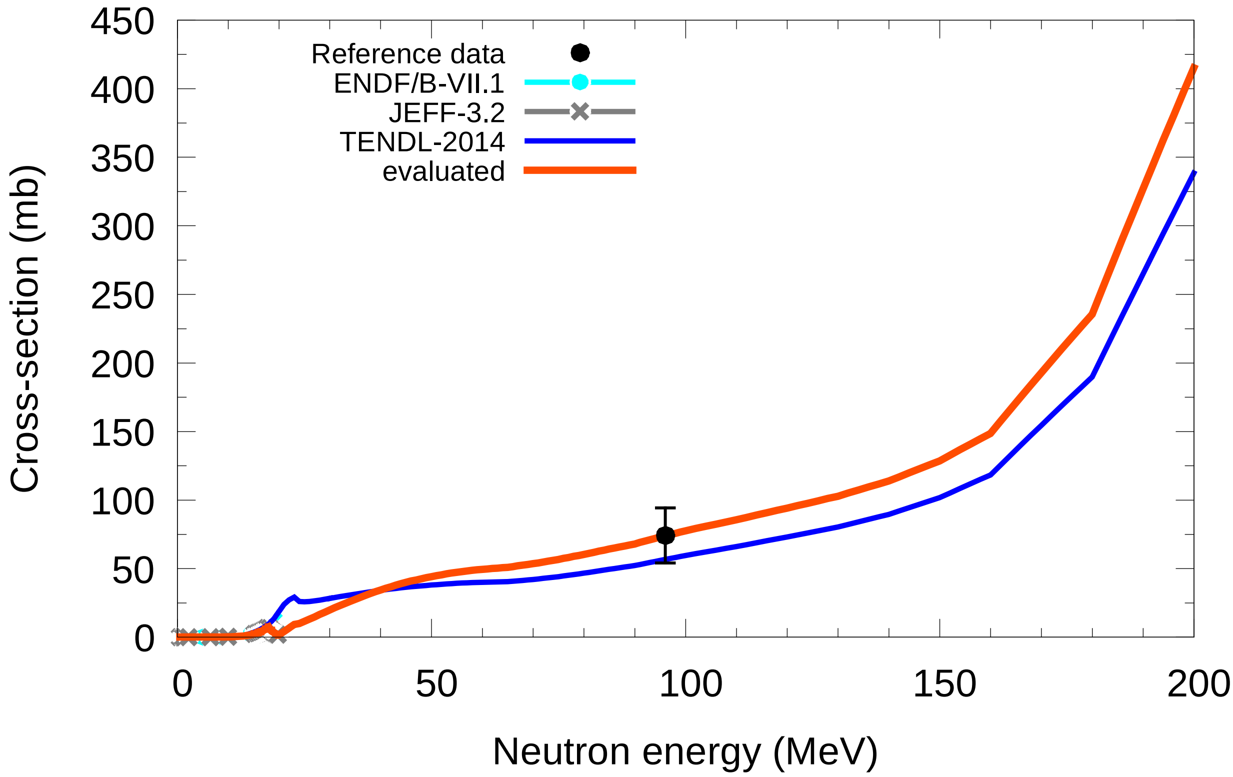


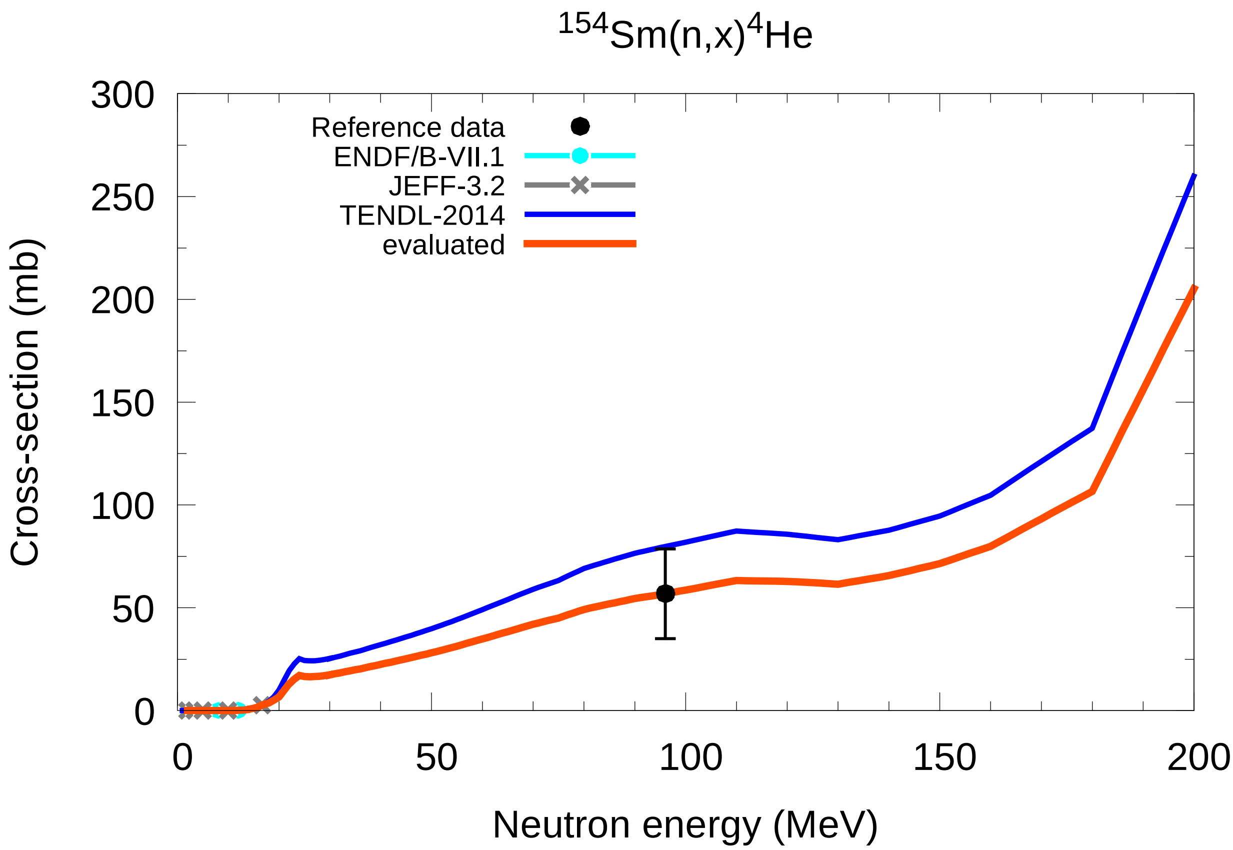
^{149}Sm(n,x)^{4}He
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300

$^{150}Sm(n,x)^{4}He$

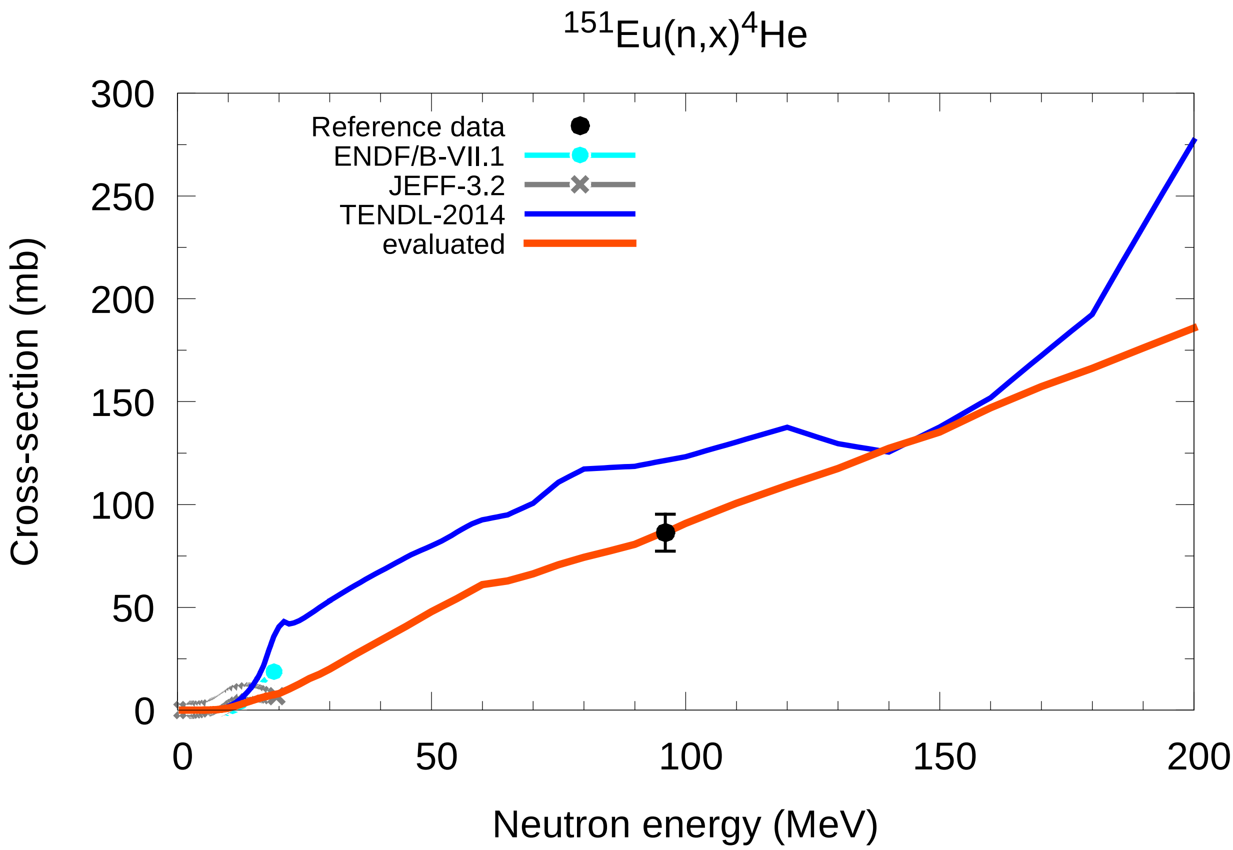


$^{152}Sm(n,x)^{4}He$

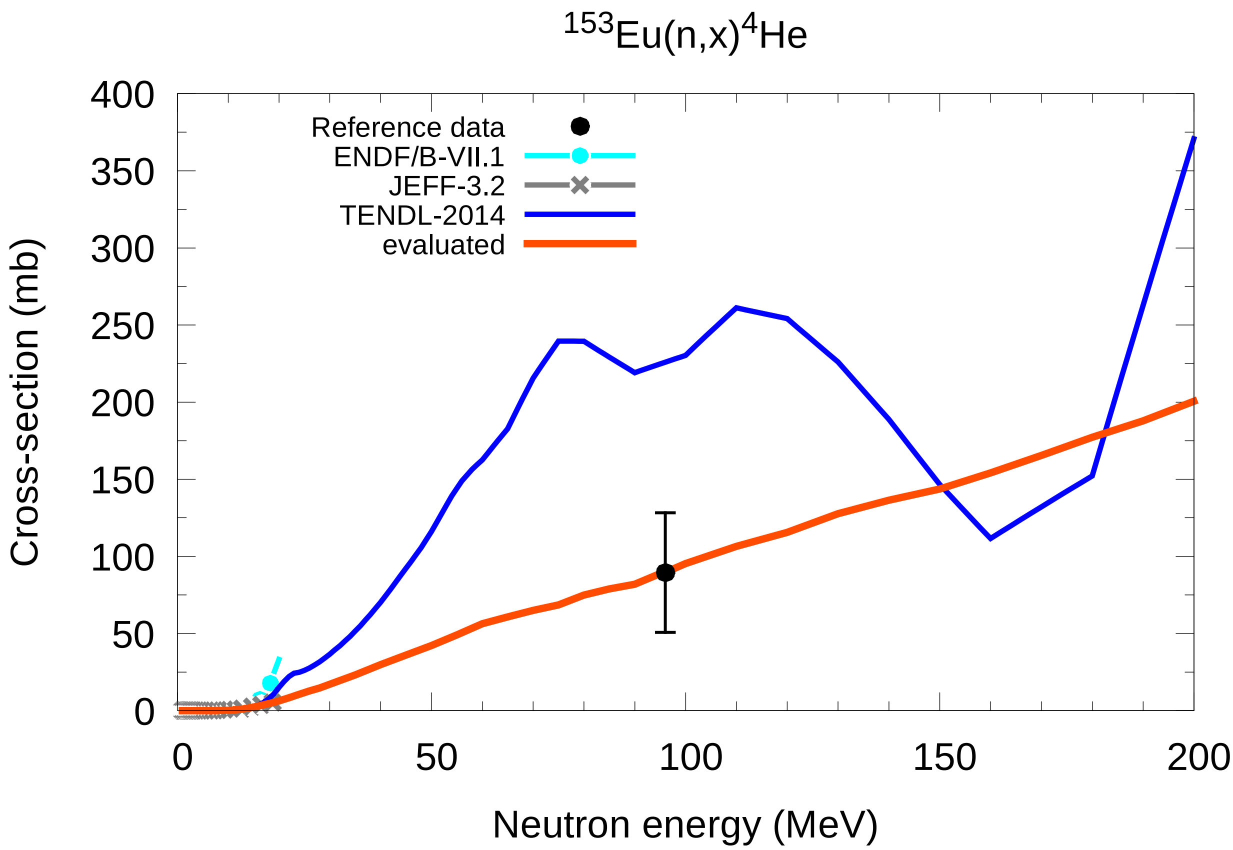




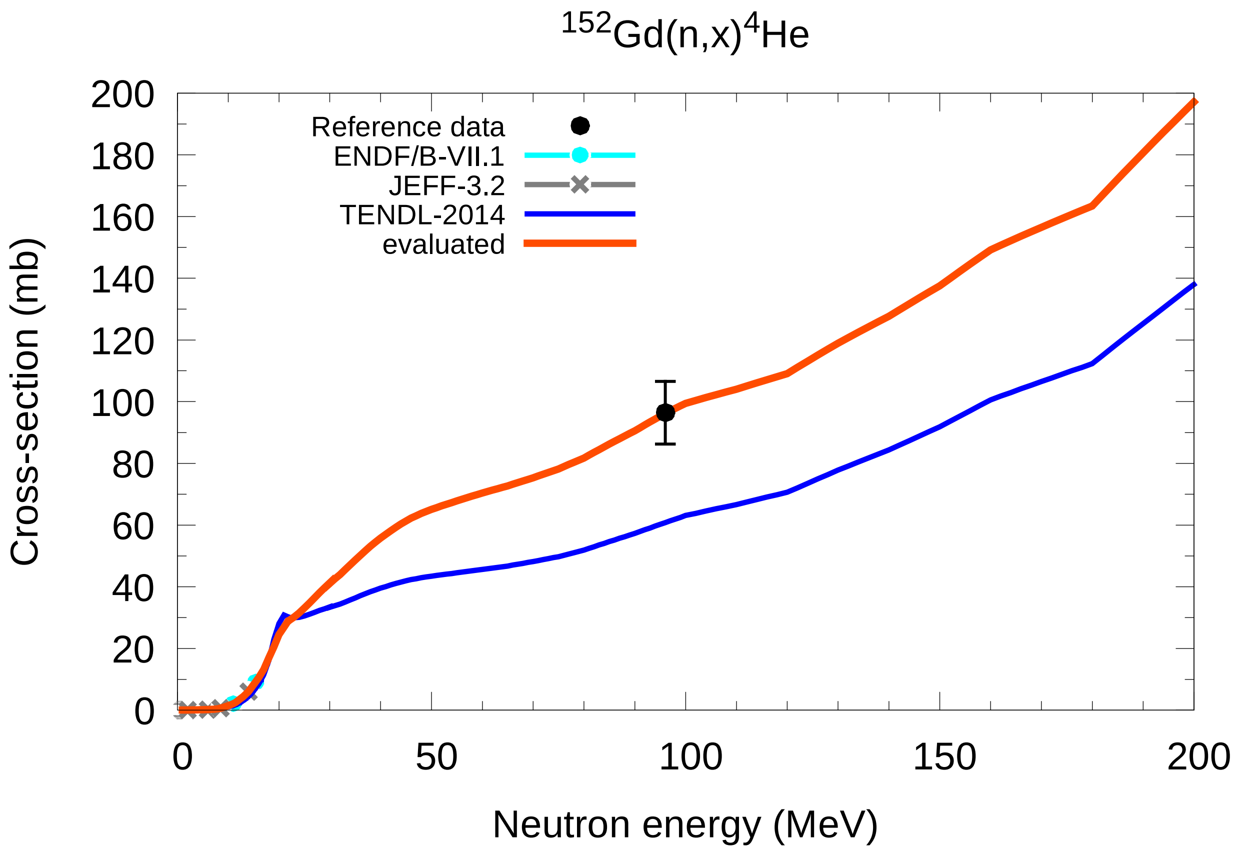
$^{154}Sm(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



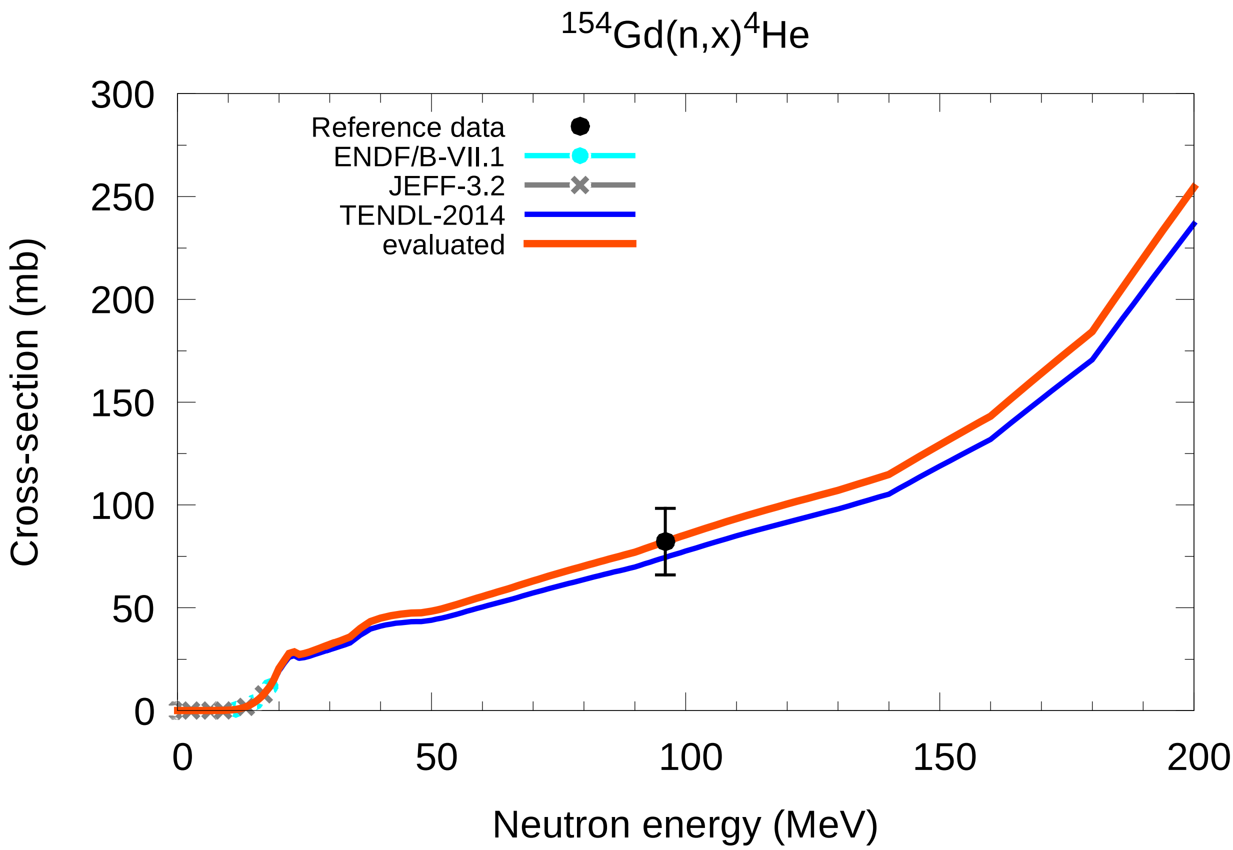
$^{151}Eu(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



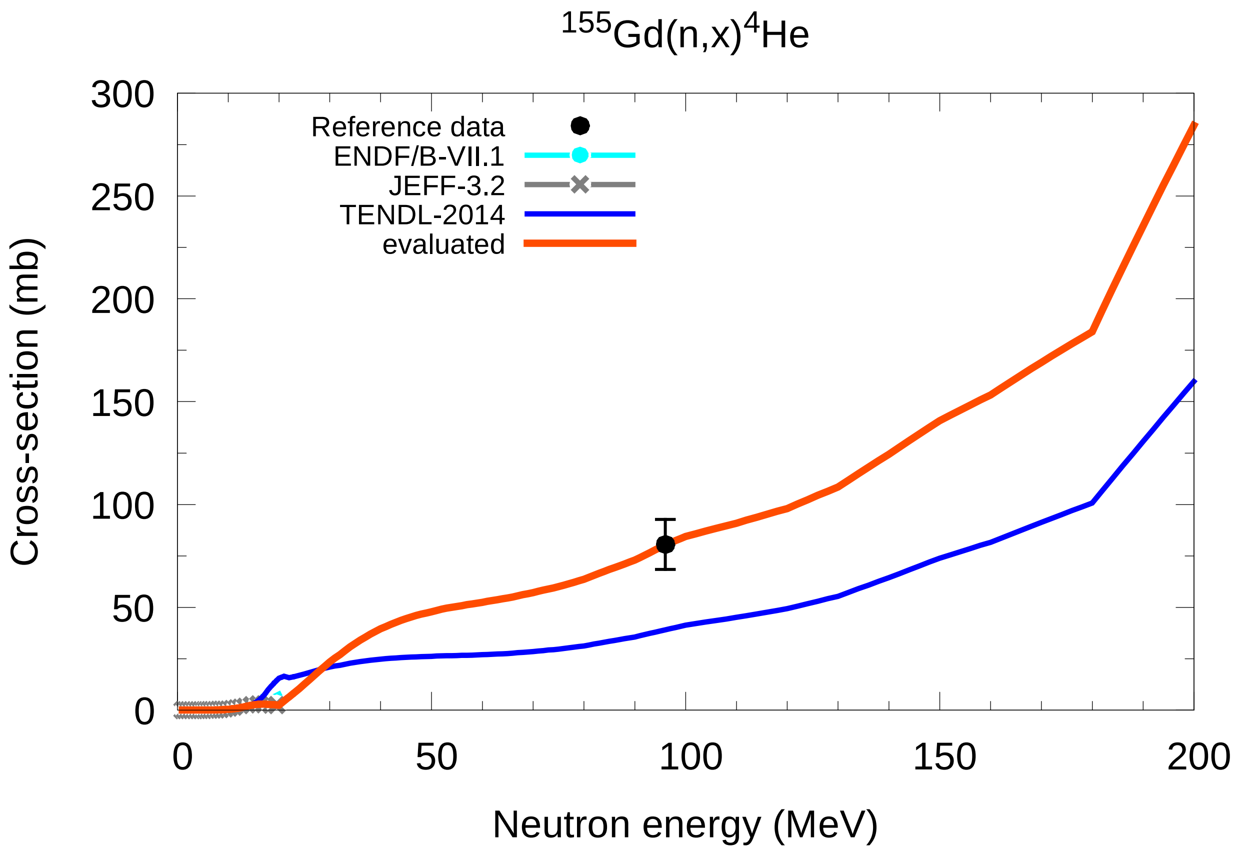
^{153}Eu(n,x)^{4}He
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300
350
400
0
50
100
150
200



^{152}Gd(n,x)^{4}He
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200

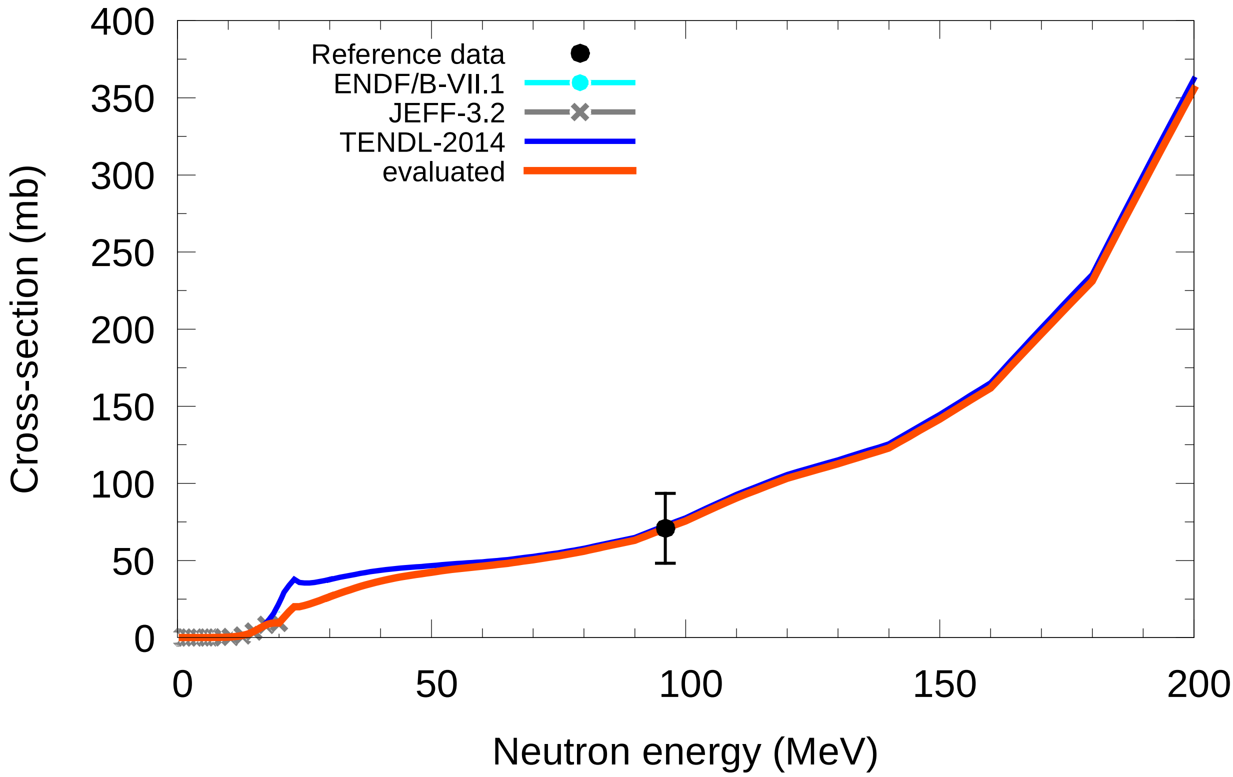


$^{154}Gd(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300

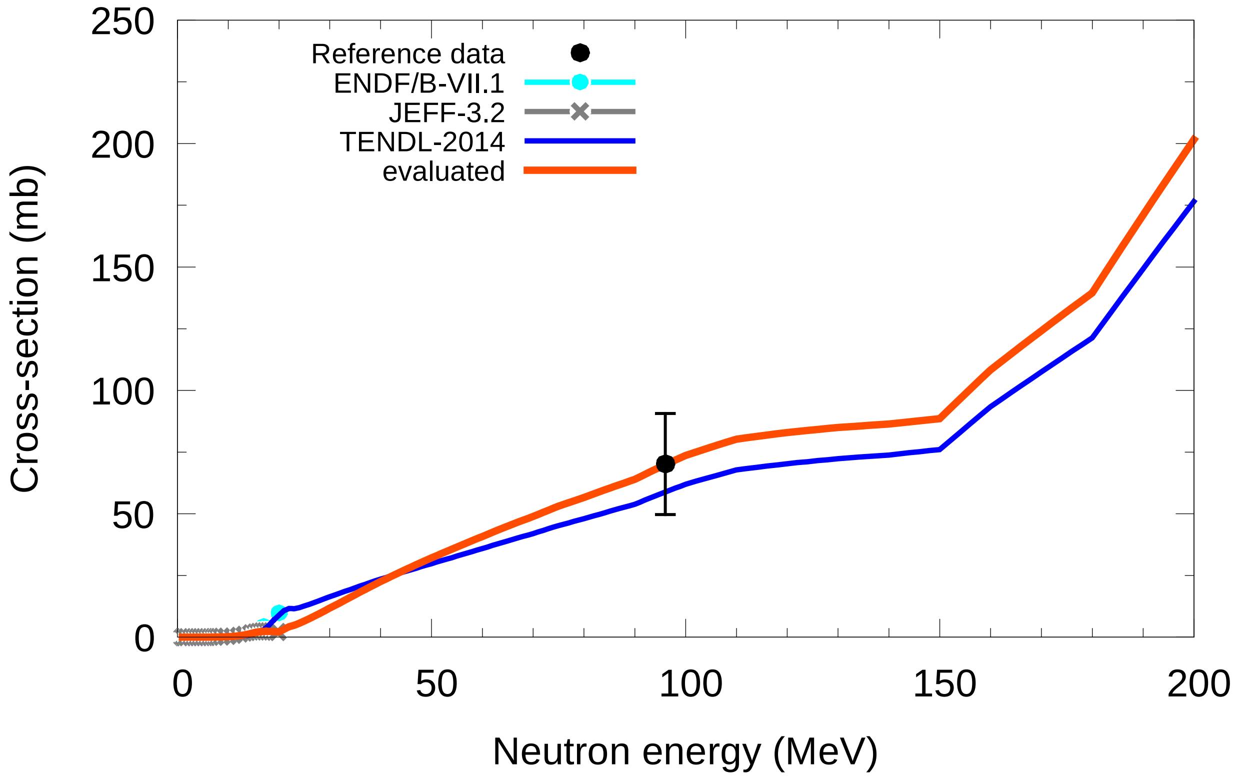


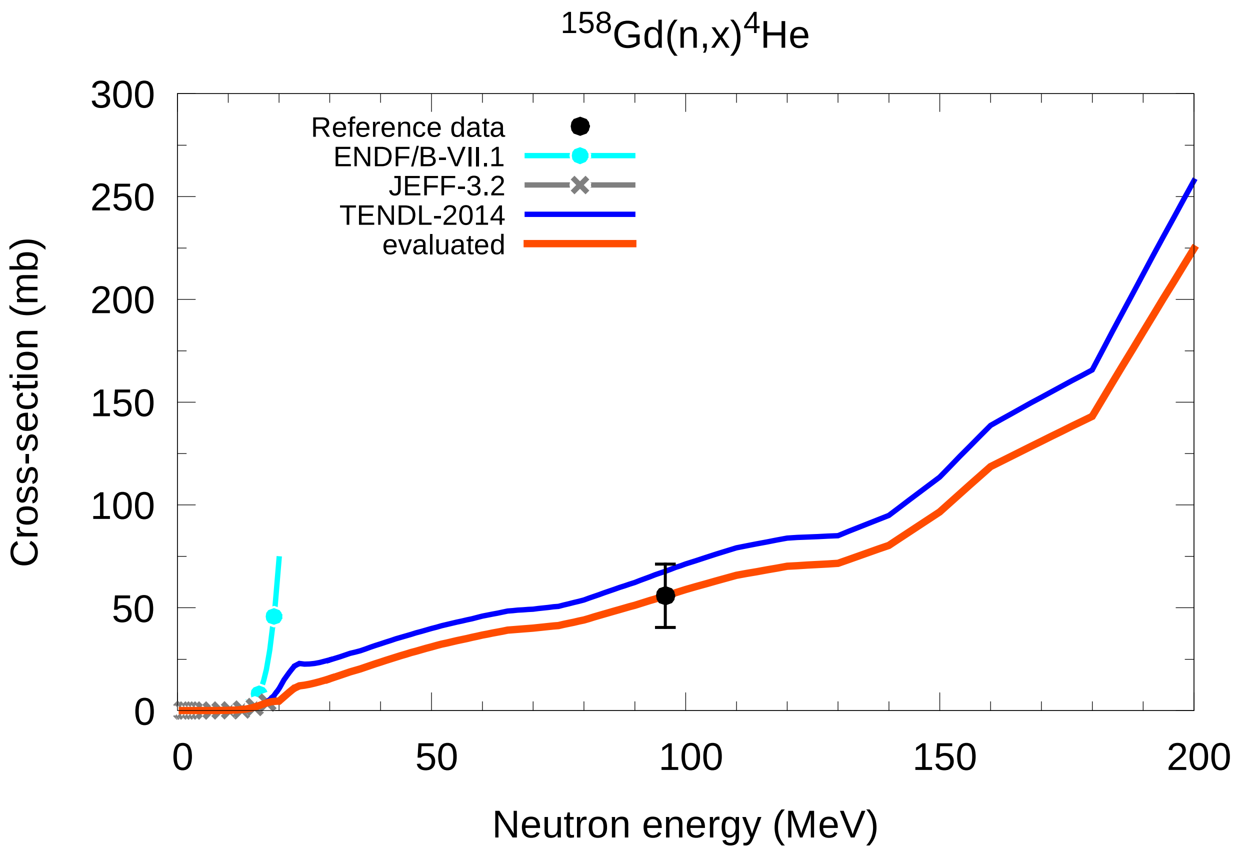
$^{155}Gd(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300

$^{156}Gd(n,x)^{4}He$

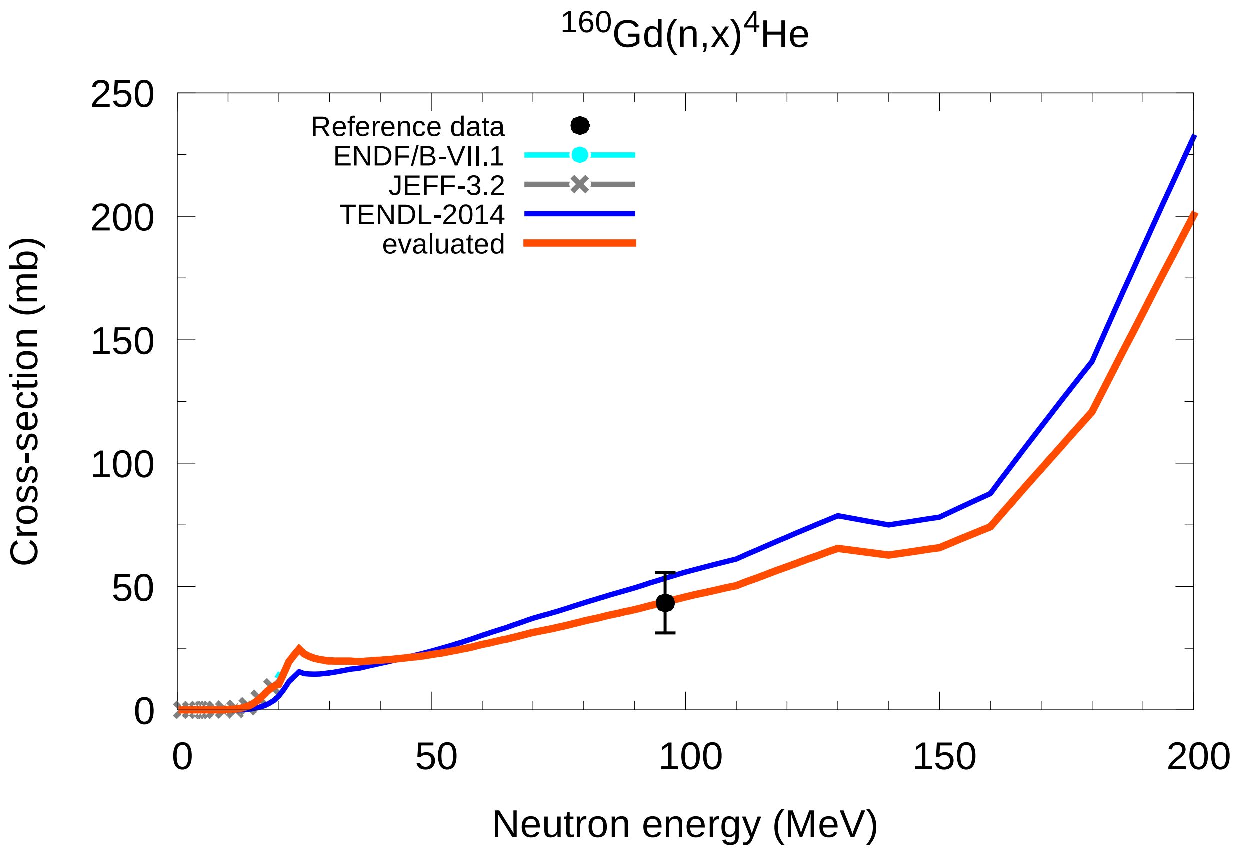


$^{157}Gd(n,x)^{4}He$

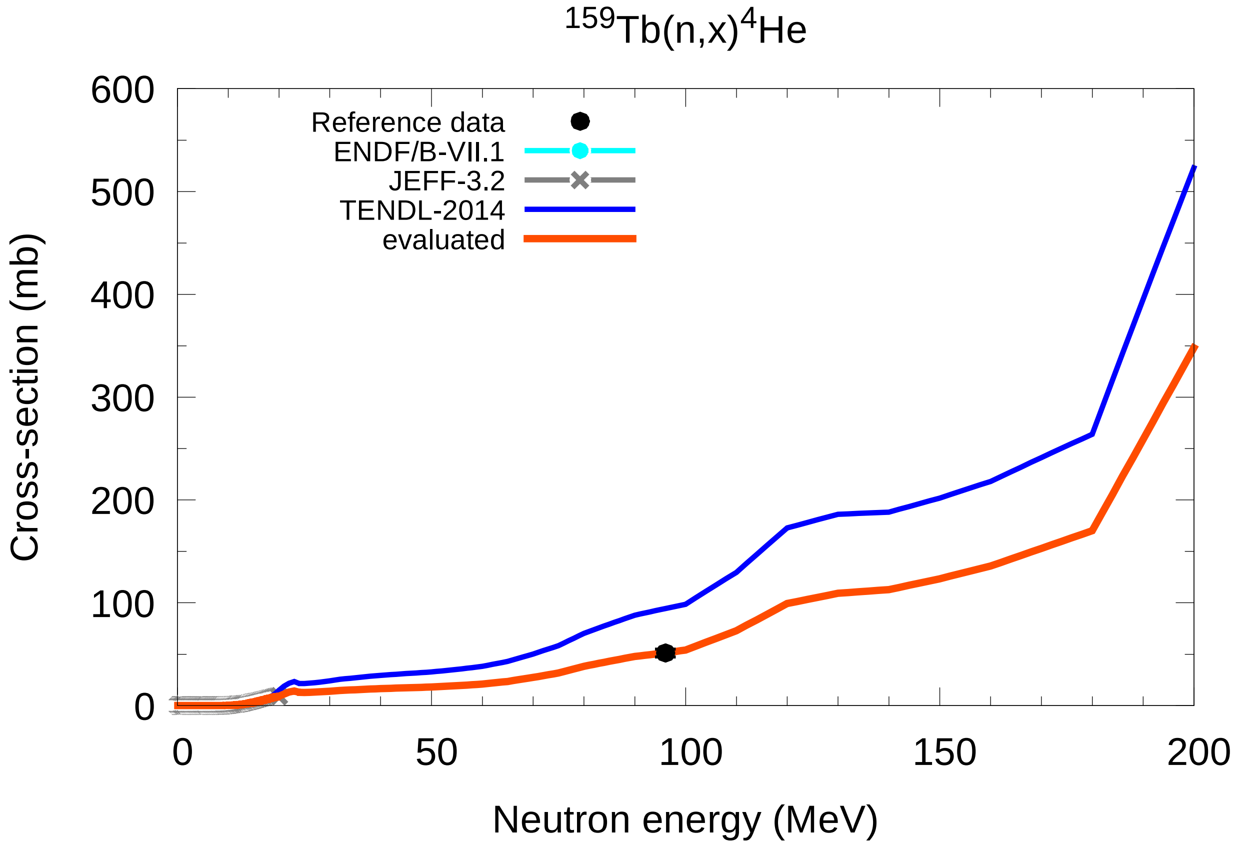




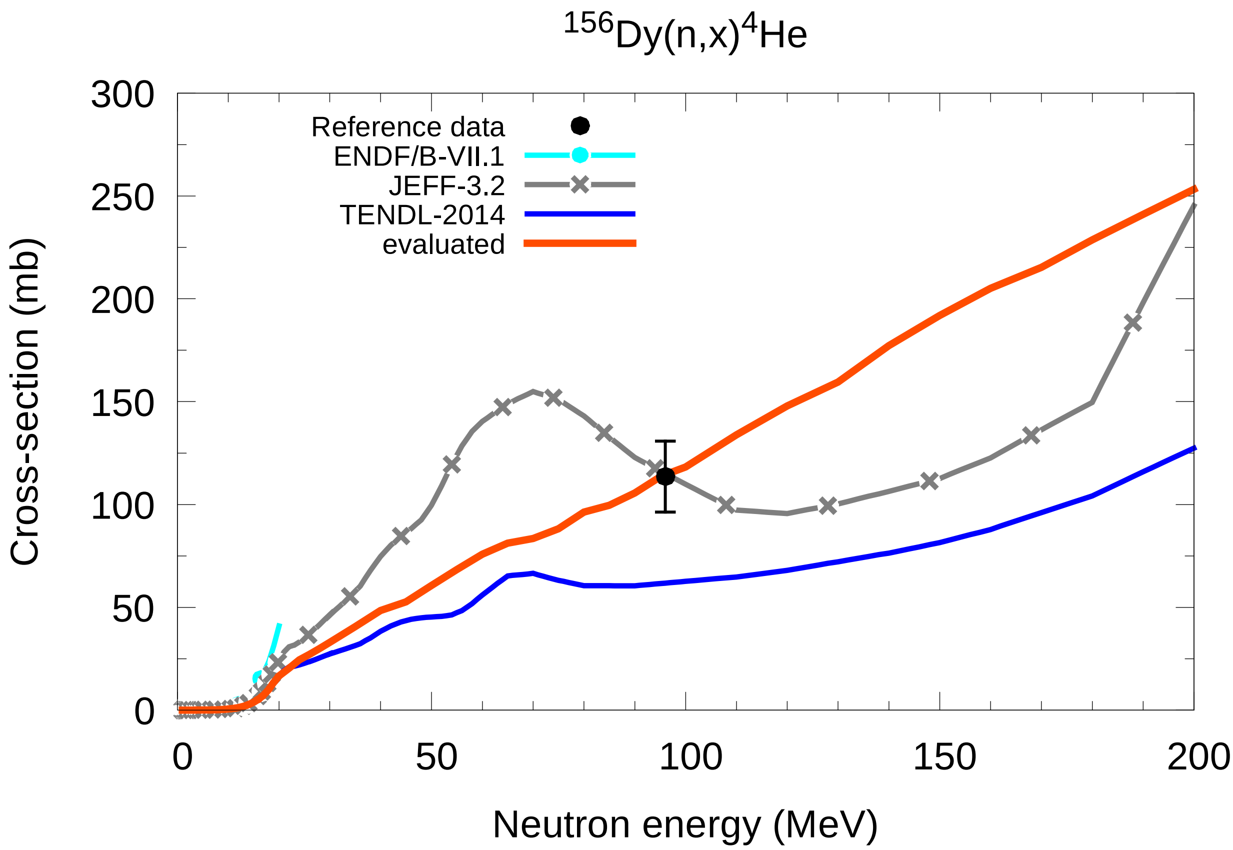
^{158}Gd(n,x)^{4}He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



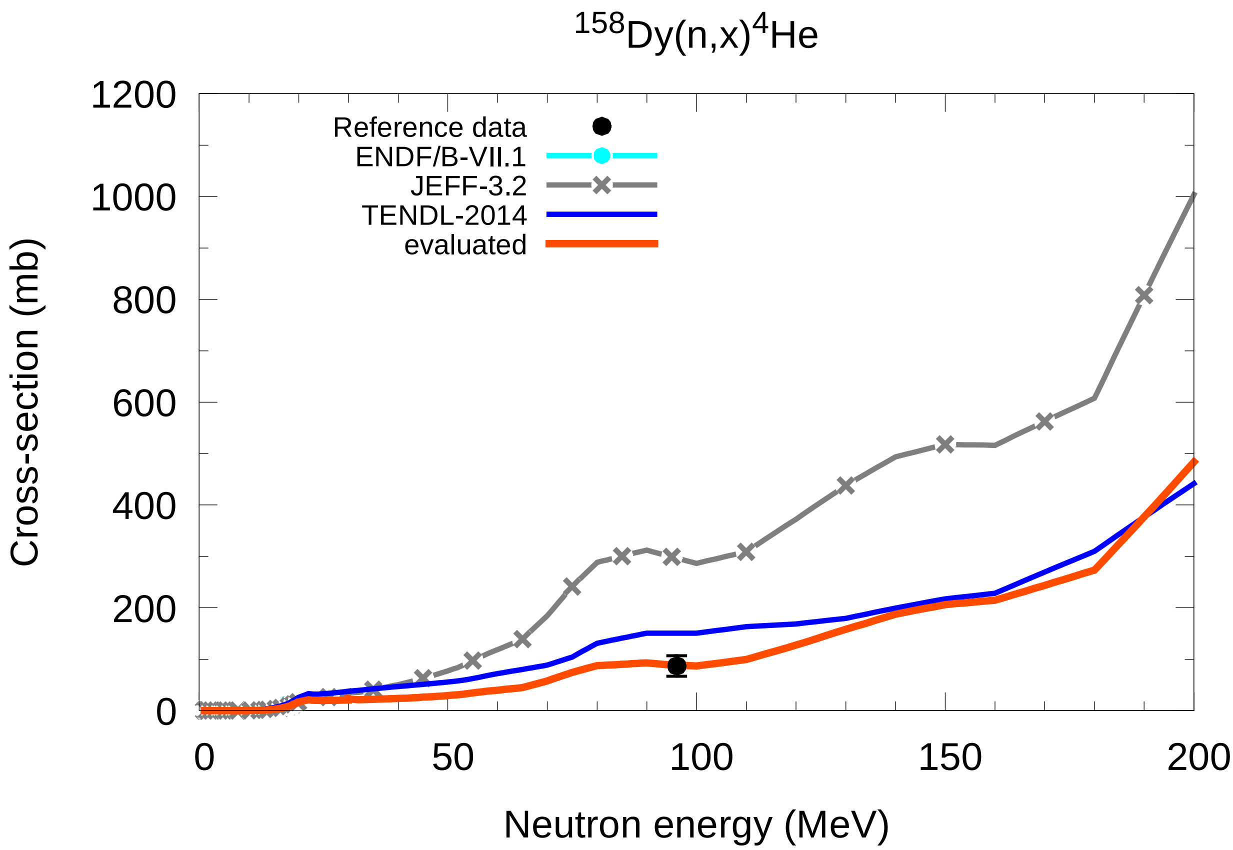
^{160}Gd(n,x)^{4}He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



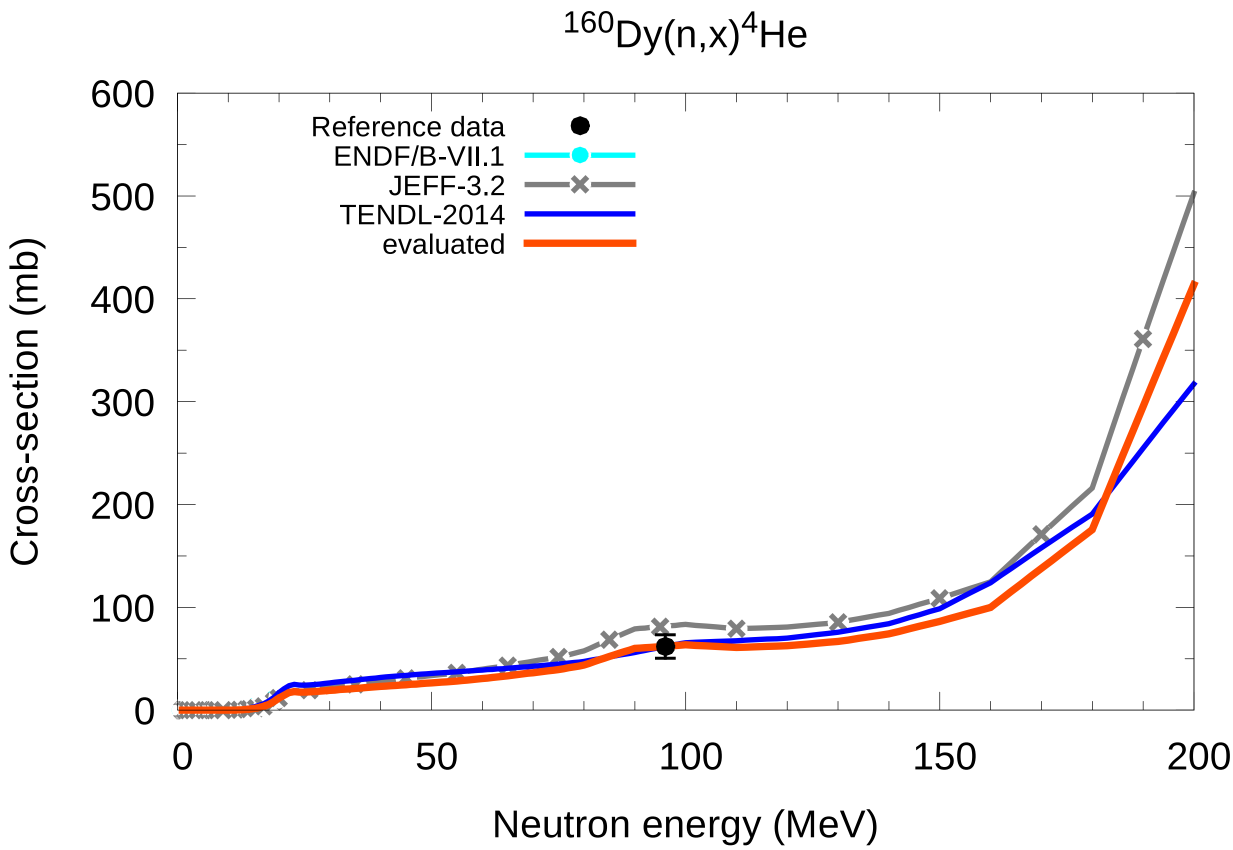
$^{159}Tb(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
50
150



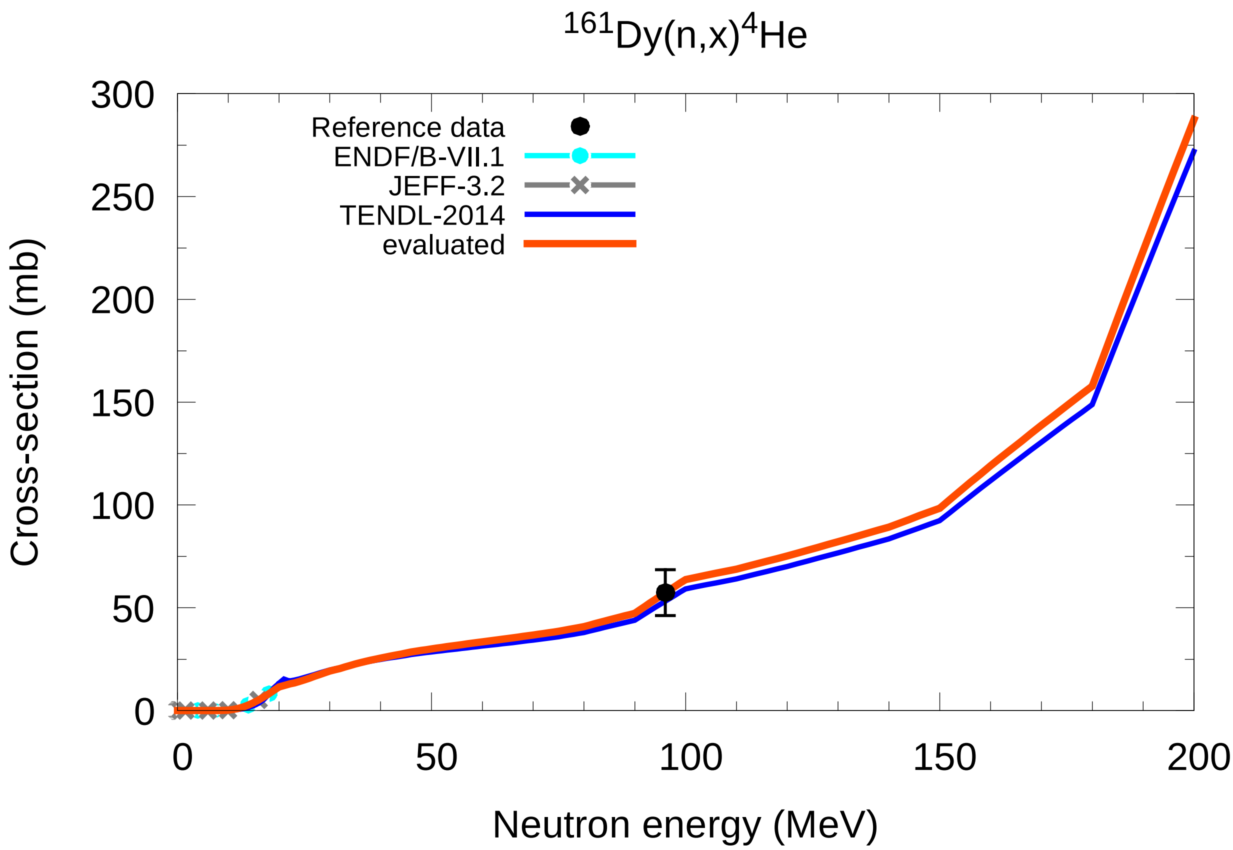
$^{156}Dy(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



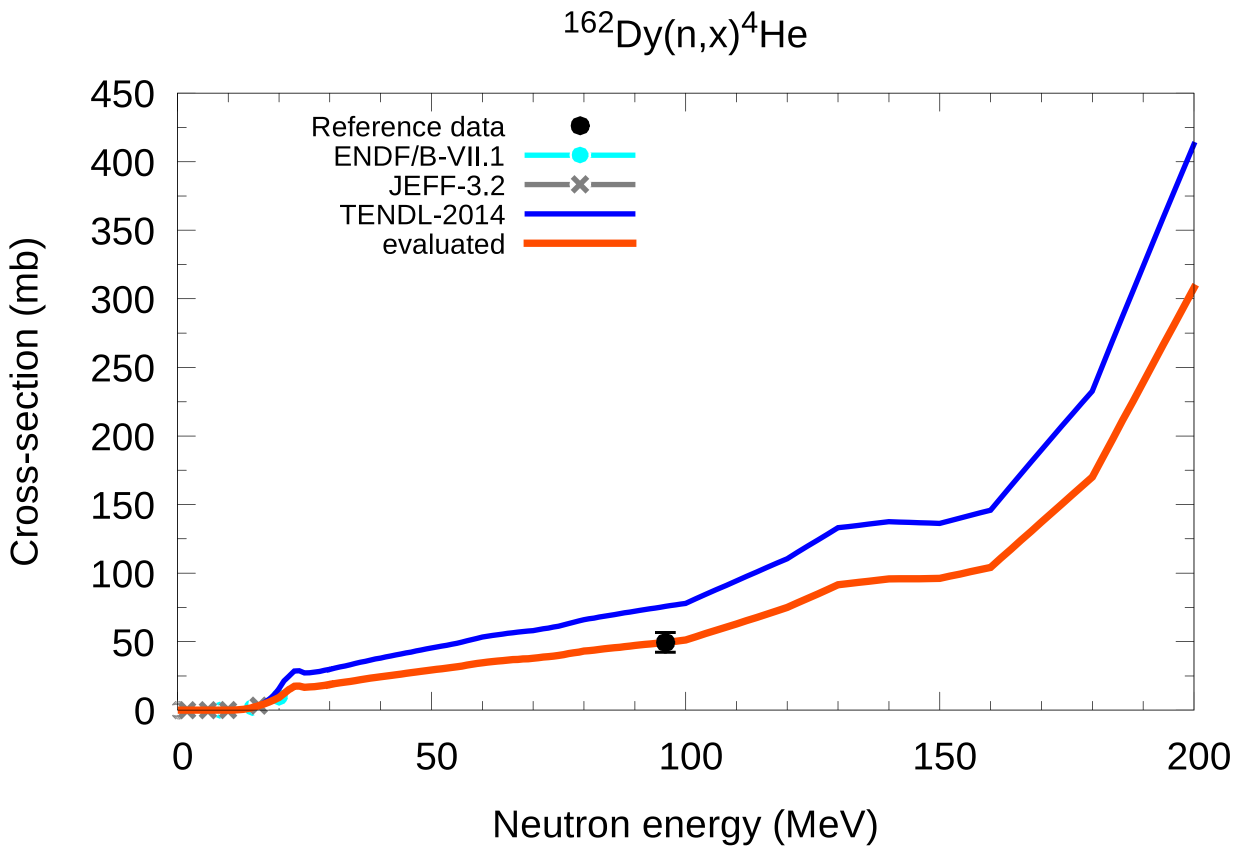
$^{158}Dy(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
200
400
600
800
1000
1200
0
50
100
150
200



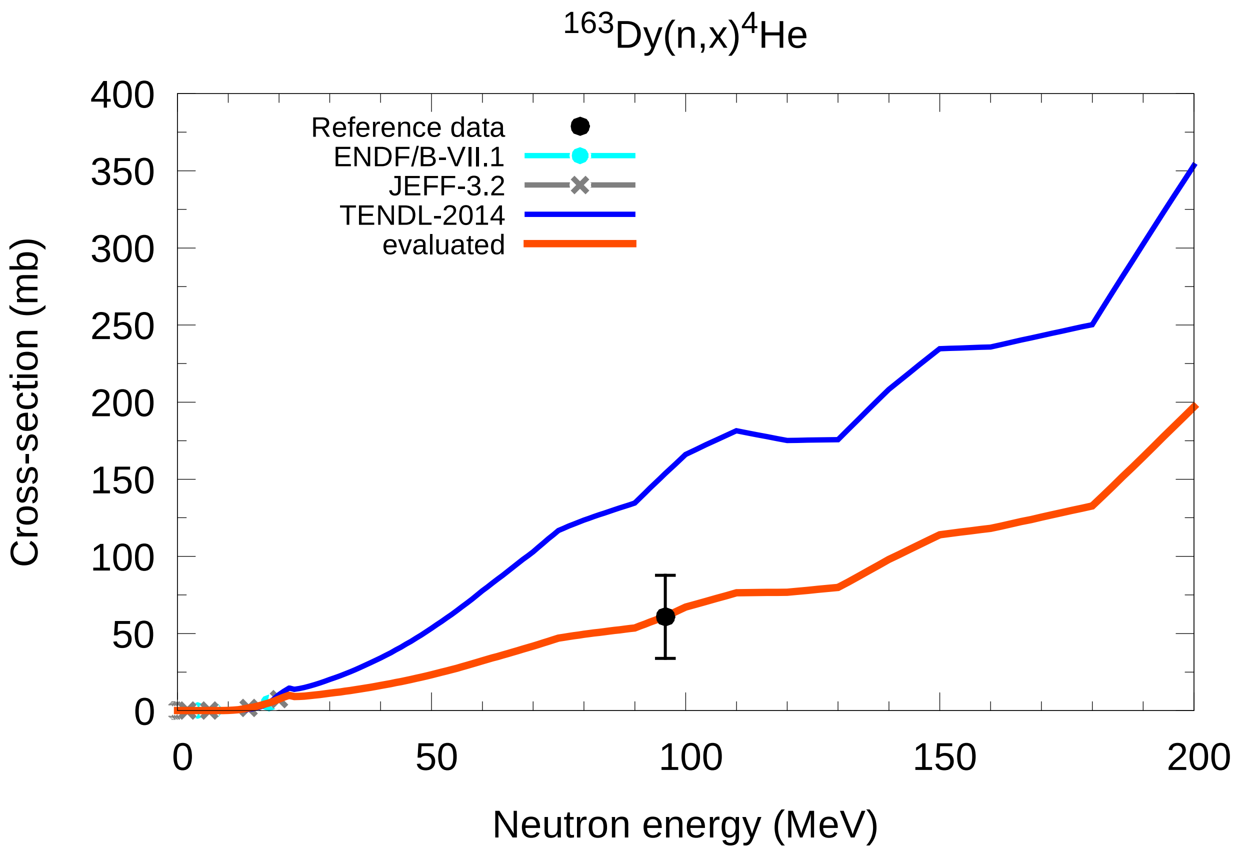
$^{160}Dy(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



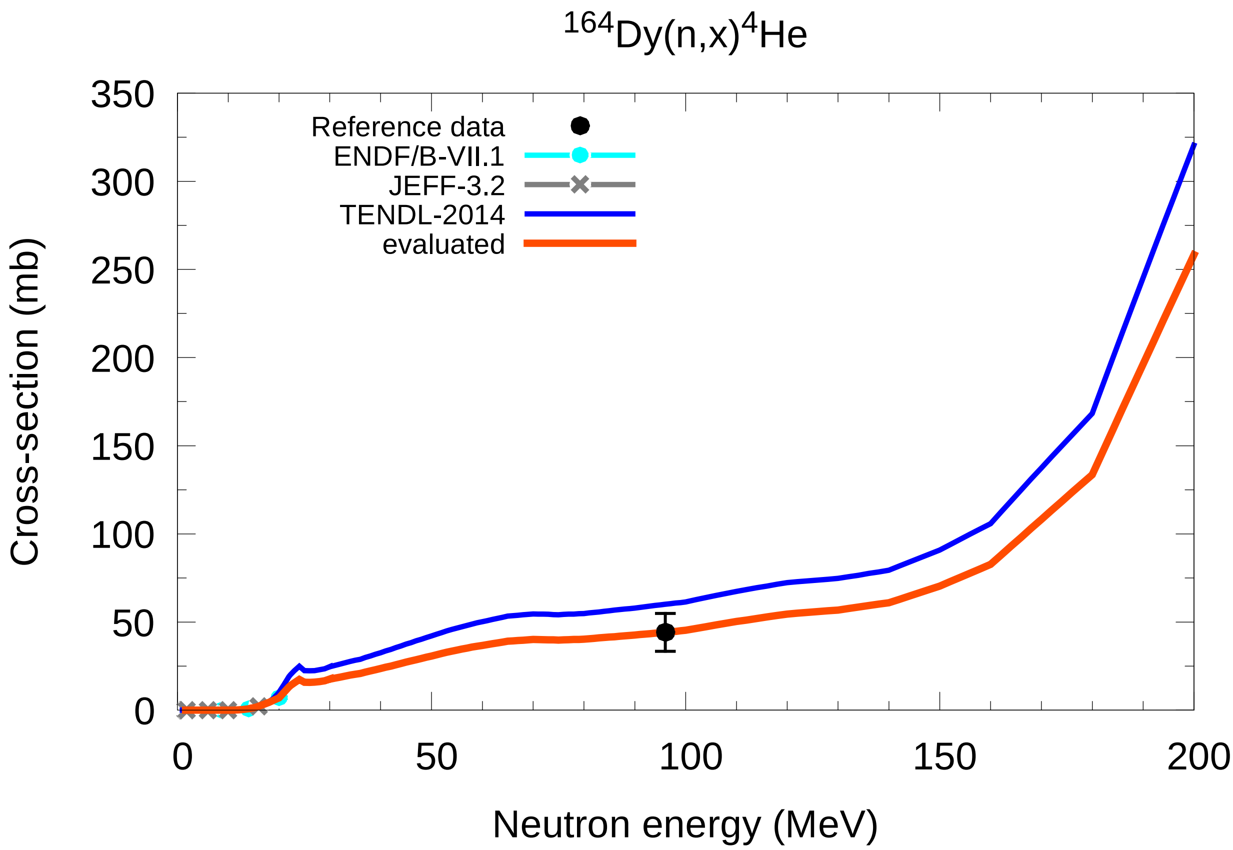
^{161}Dy(n,x)^{4}He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



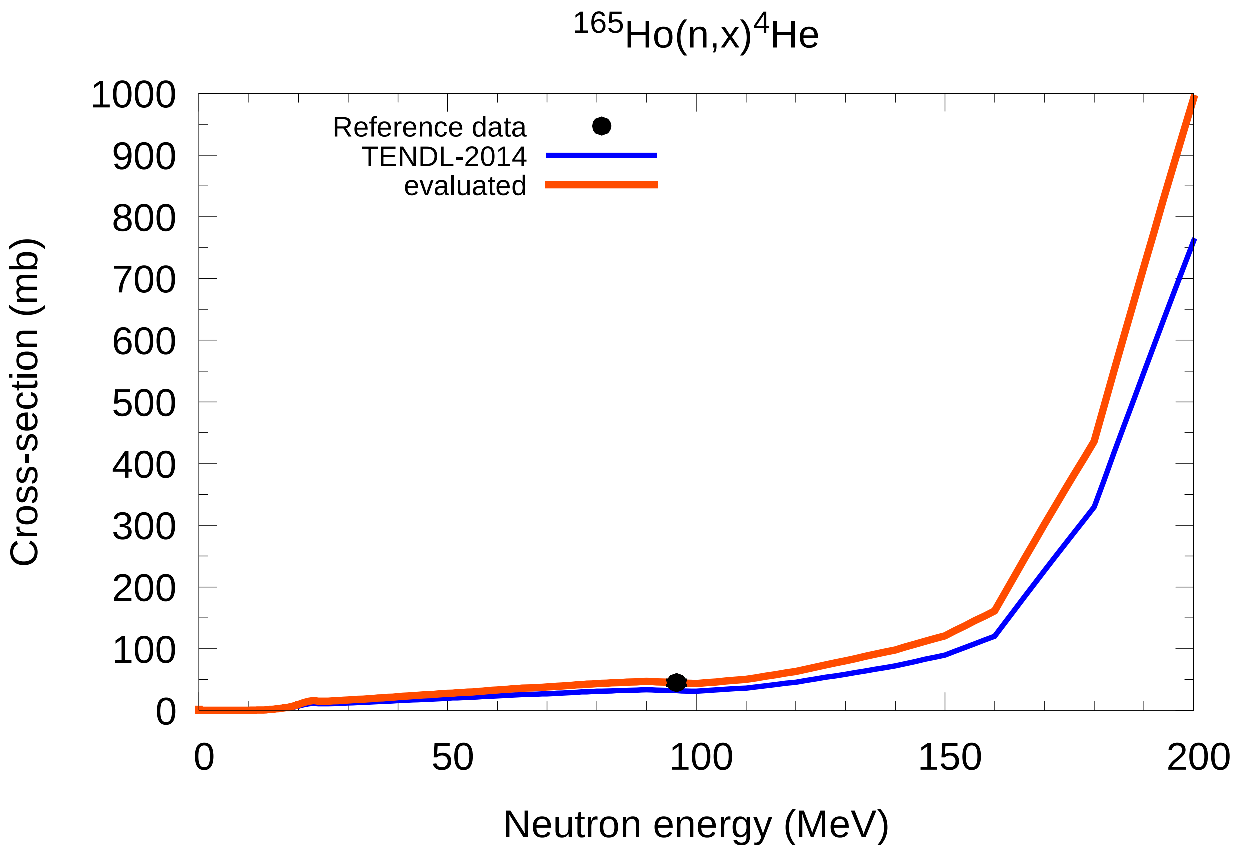
^{162}Dy(n,x)^{4}He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



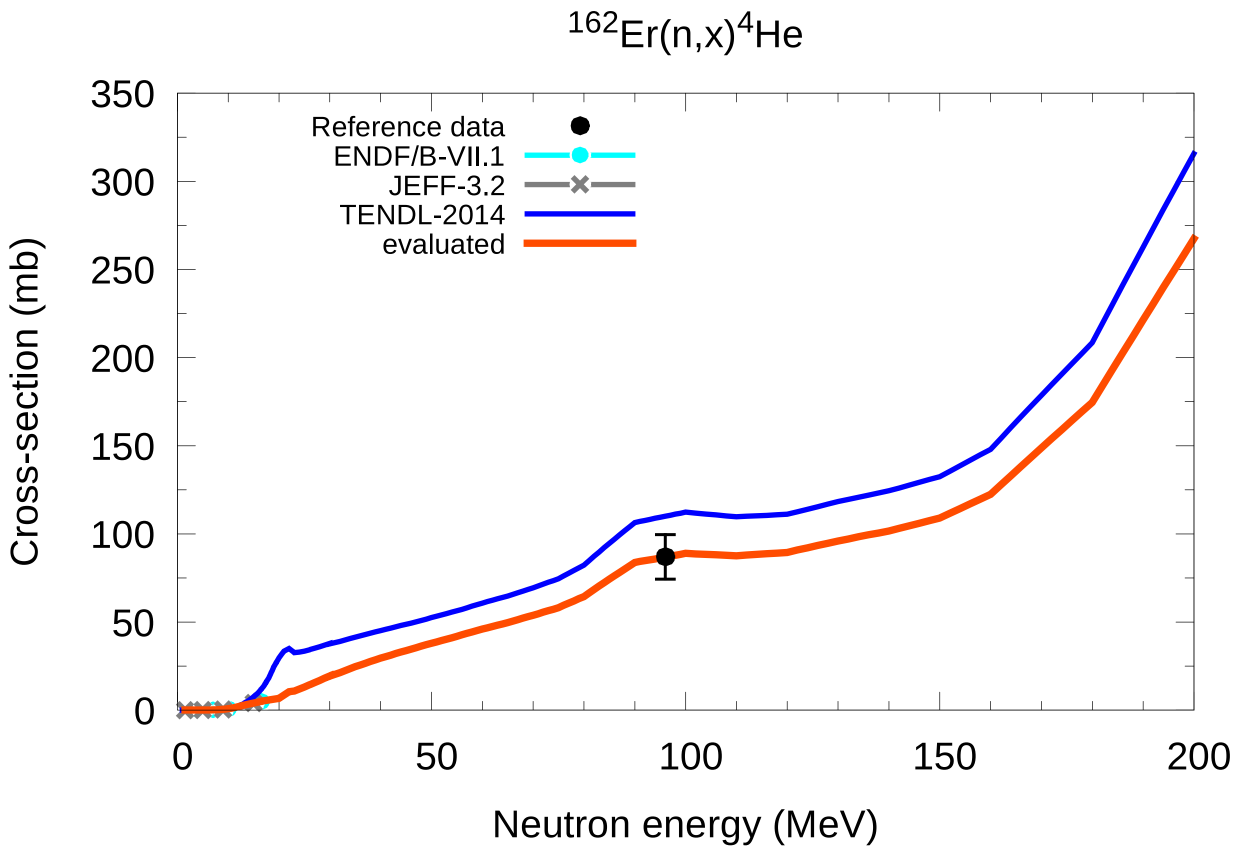
^{163}Dy(n,x)^{4}He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



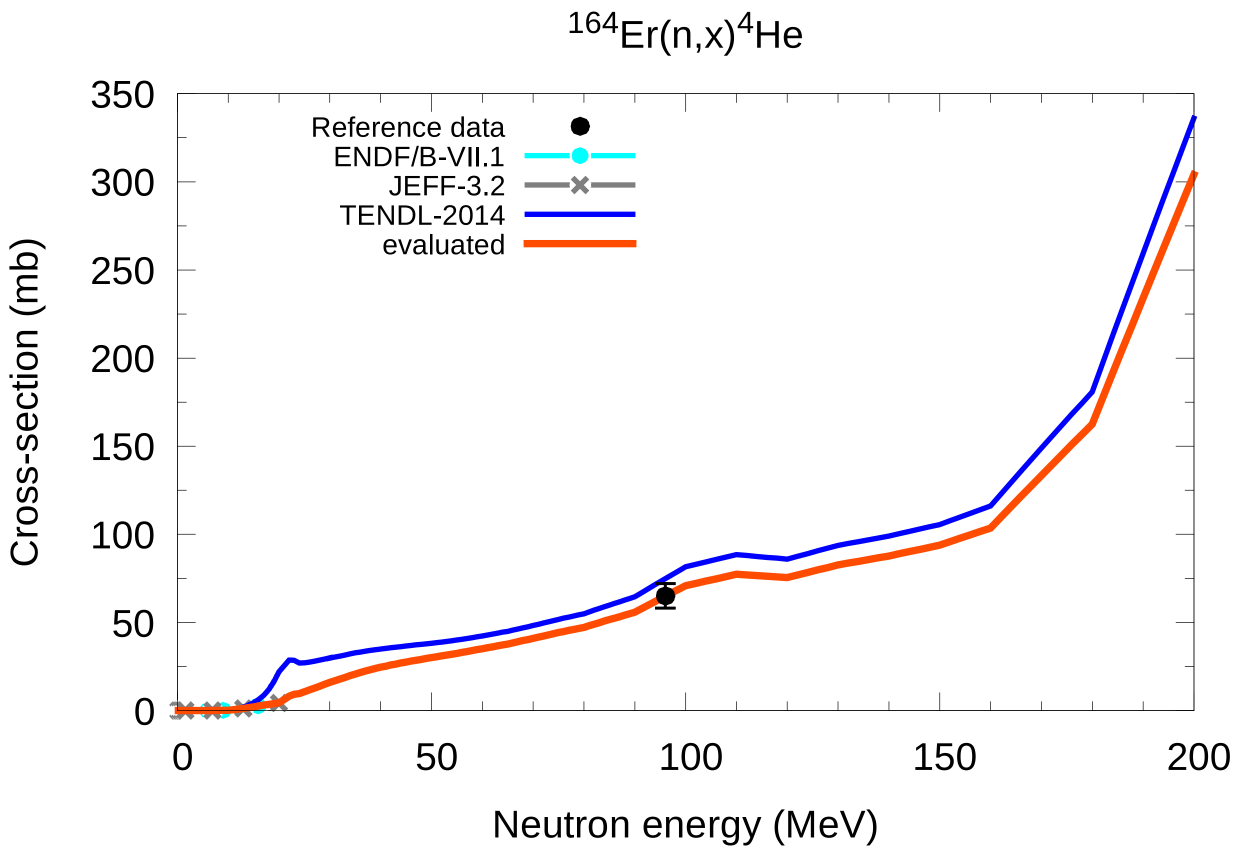
^{164}Dy(n,x)^{4}He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



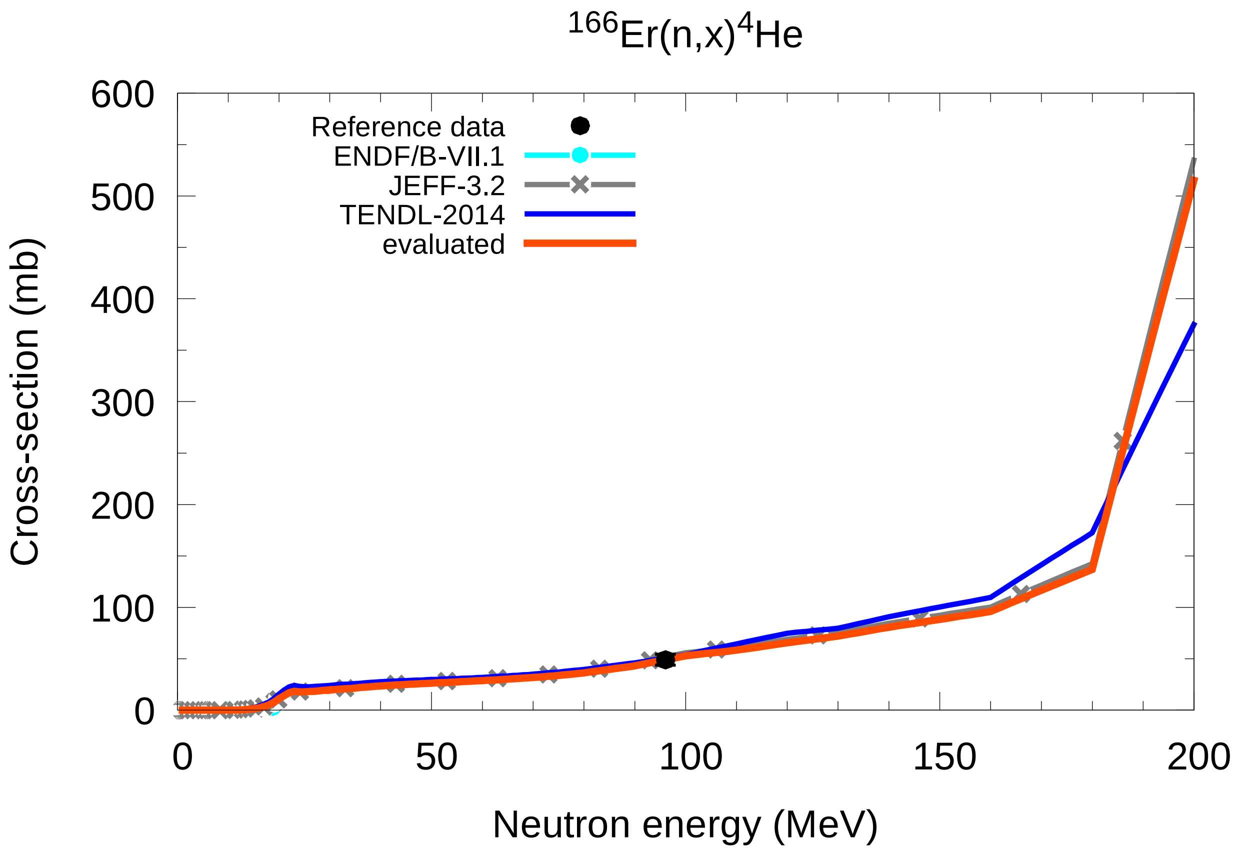
^{165}Ho(n,x)^{4}He
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
1000
0
50
100
150
200



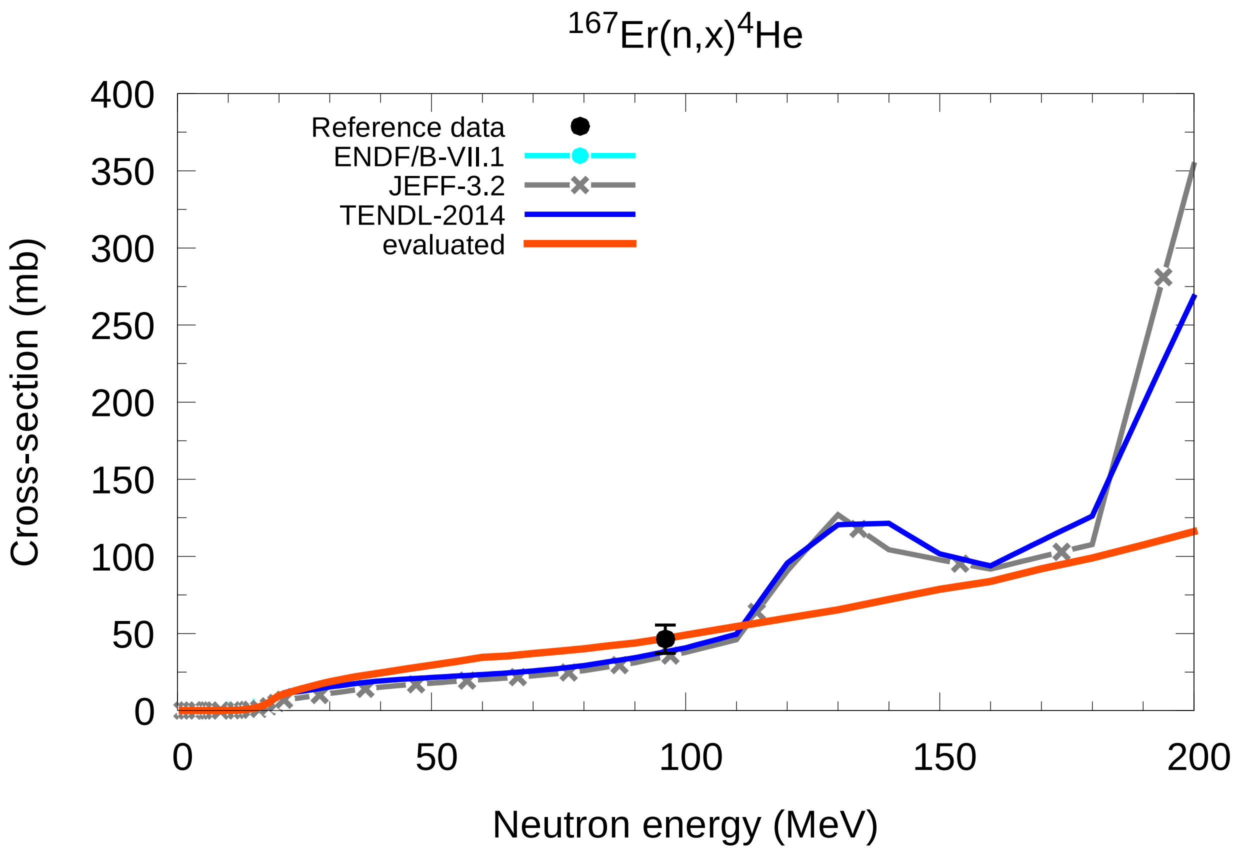
^{162}Er(n,x)^{4}He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
0
50
100
150
200



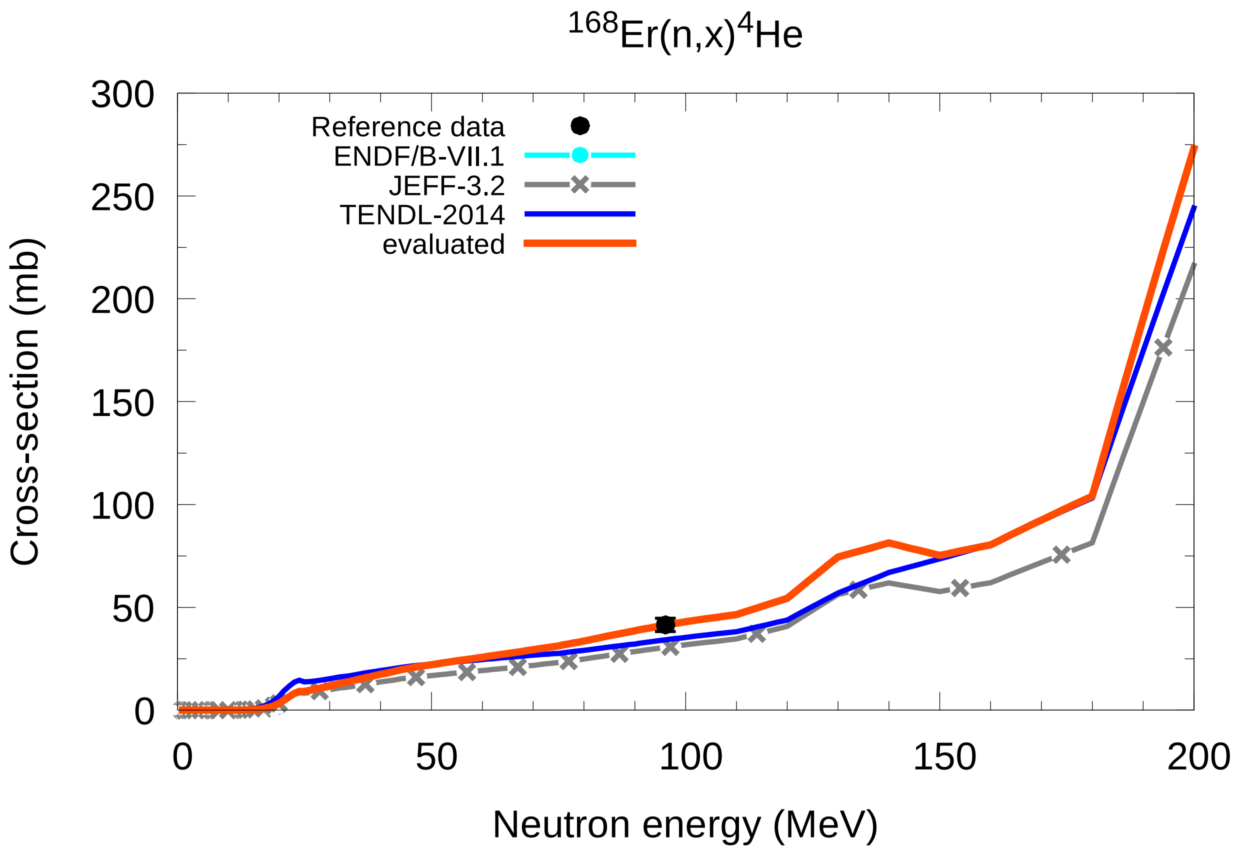
$^{164}Er(n,x)^4He$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300
350



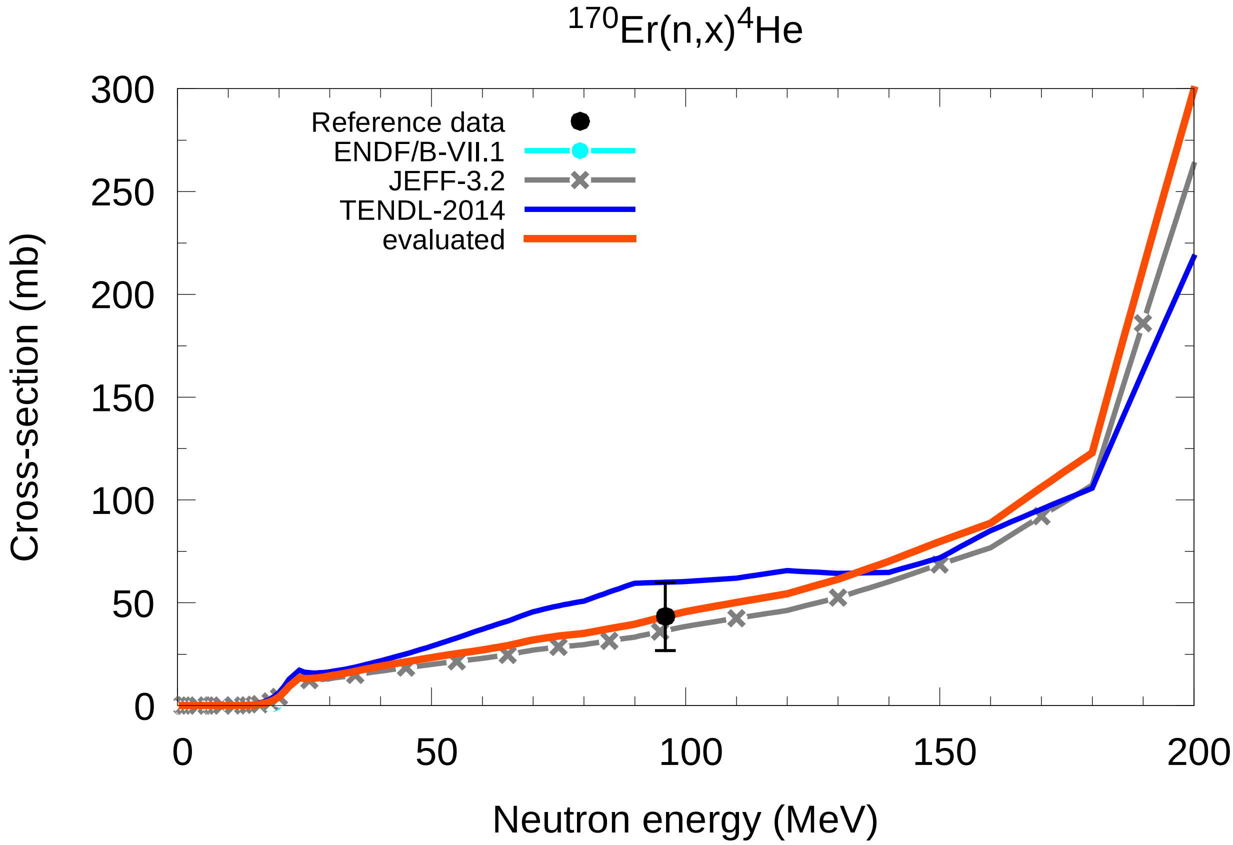
$^{166}Er(n,x)^4He$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
100
200
300
400
500
600



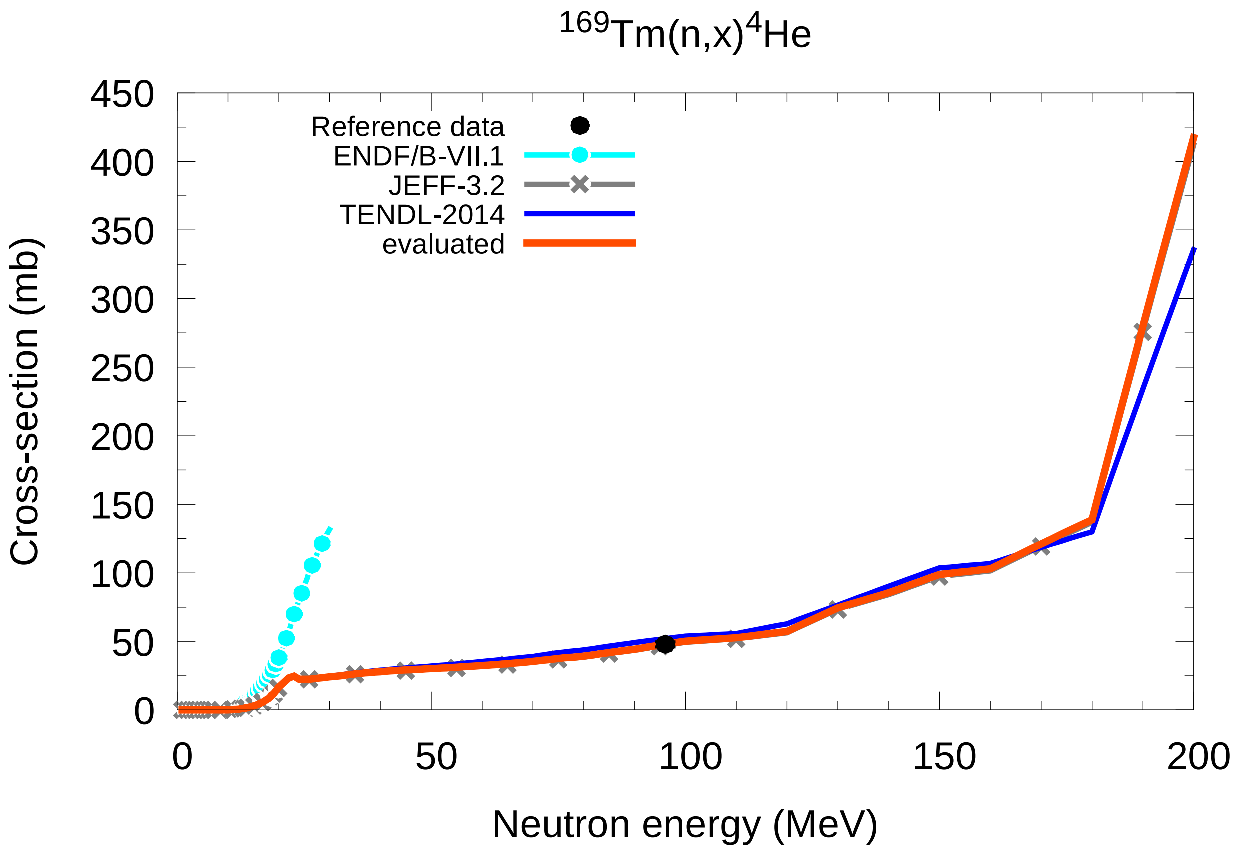
^{167}Er(n,x)^{4}He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400



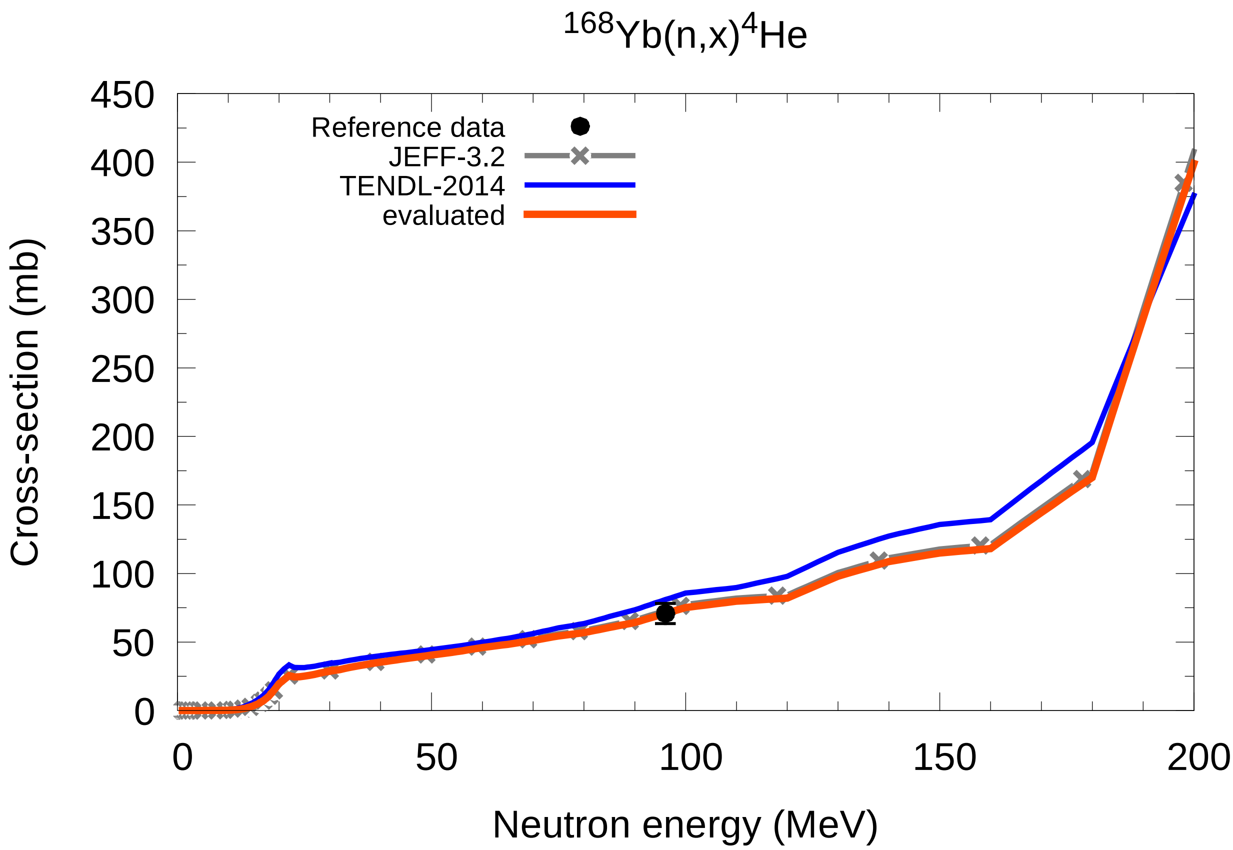
^{168}Er(n,x)^{4}He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



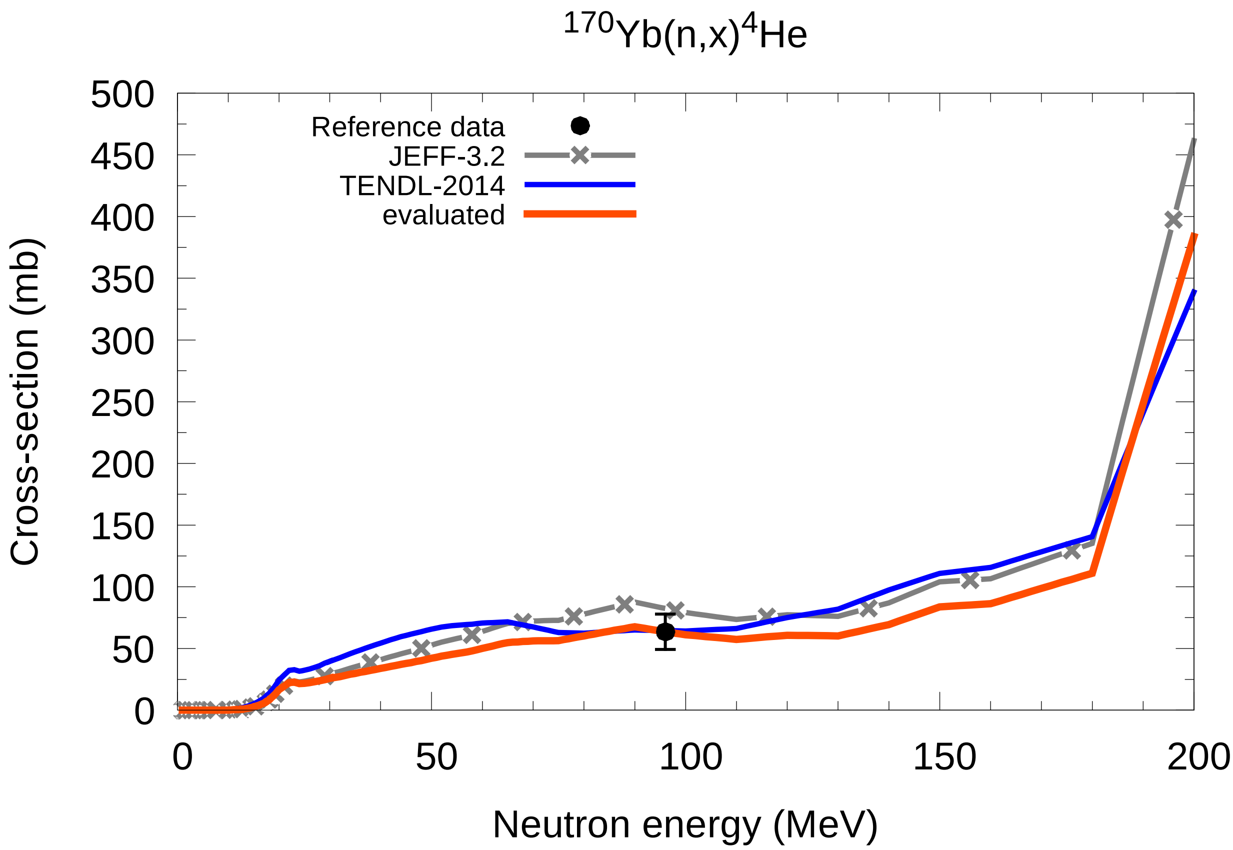
$^{170}Er(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



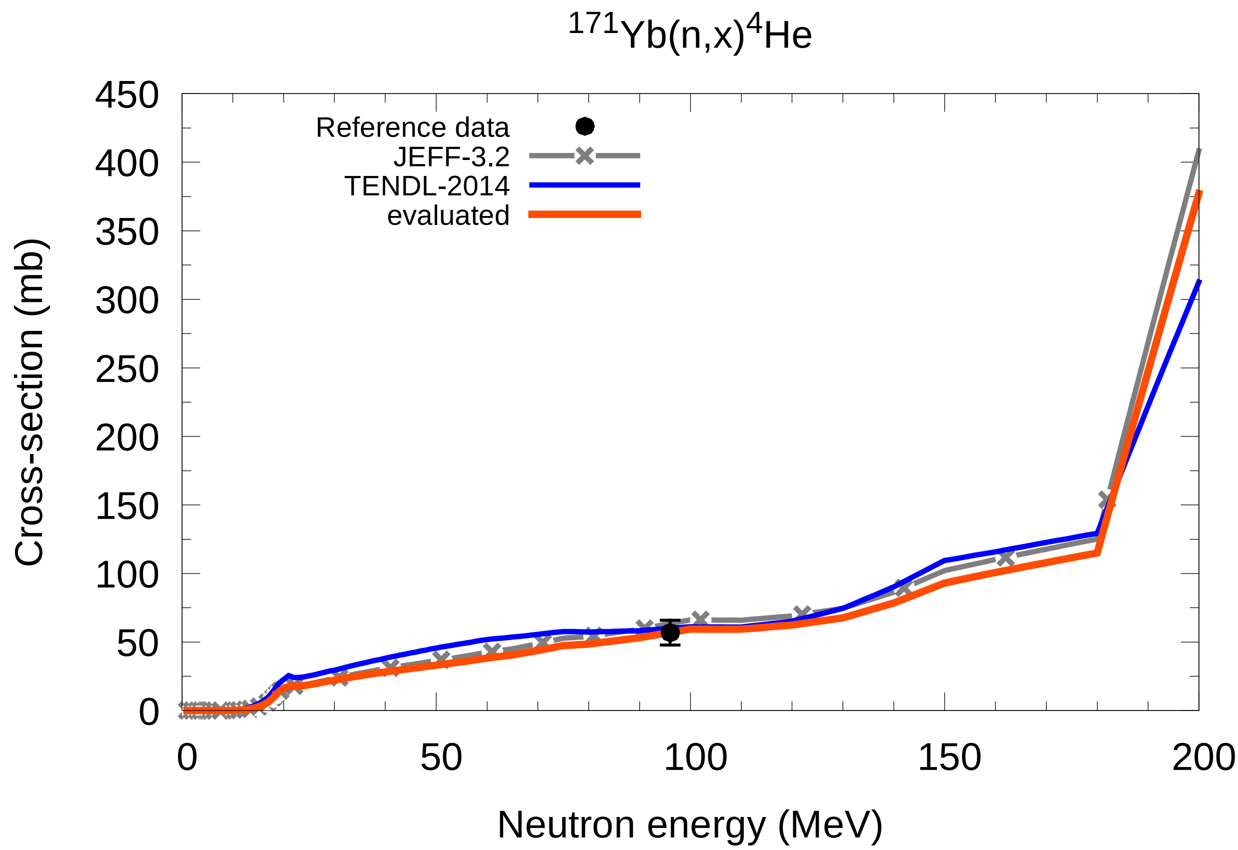
$^{169}Tm(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



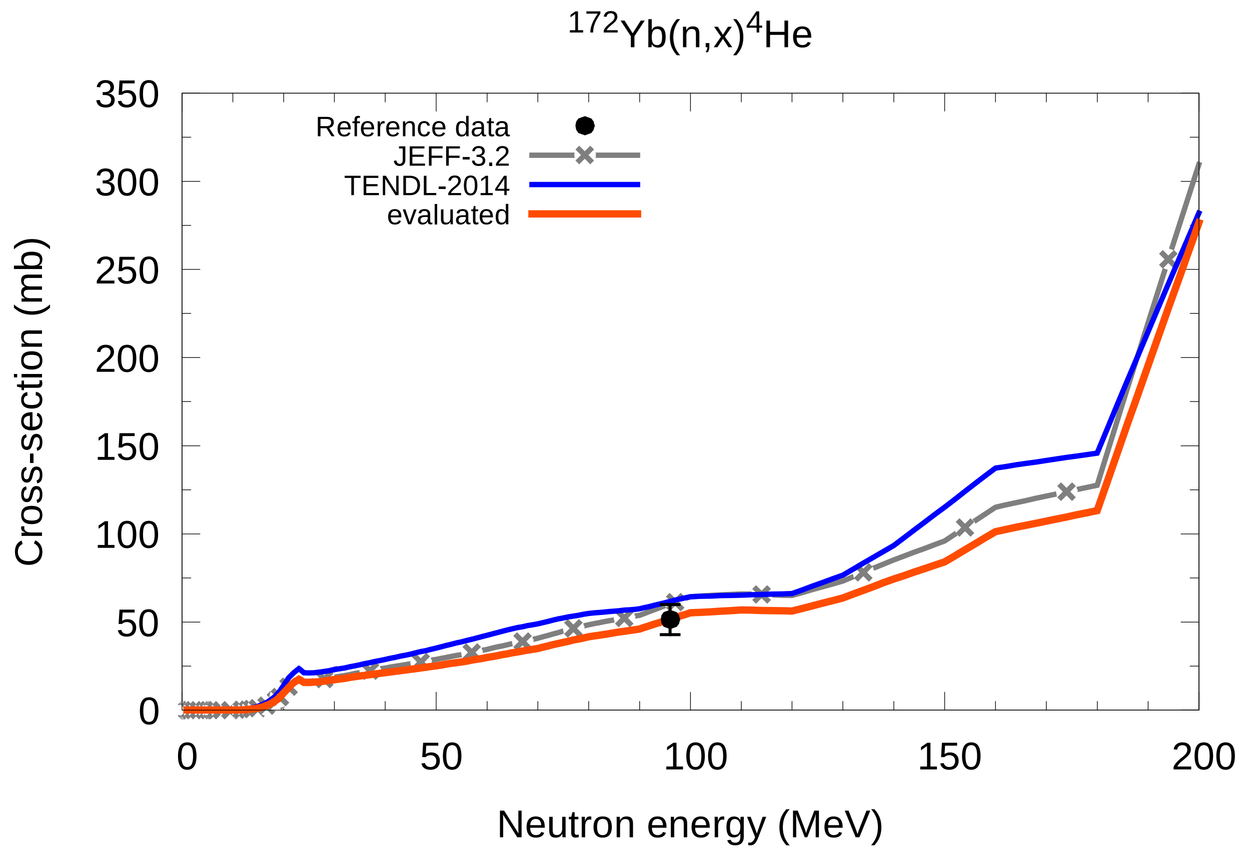
$^{168}Yb(n,x)^{4}He$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



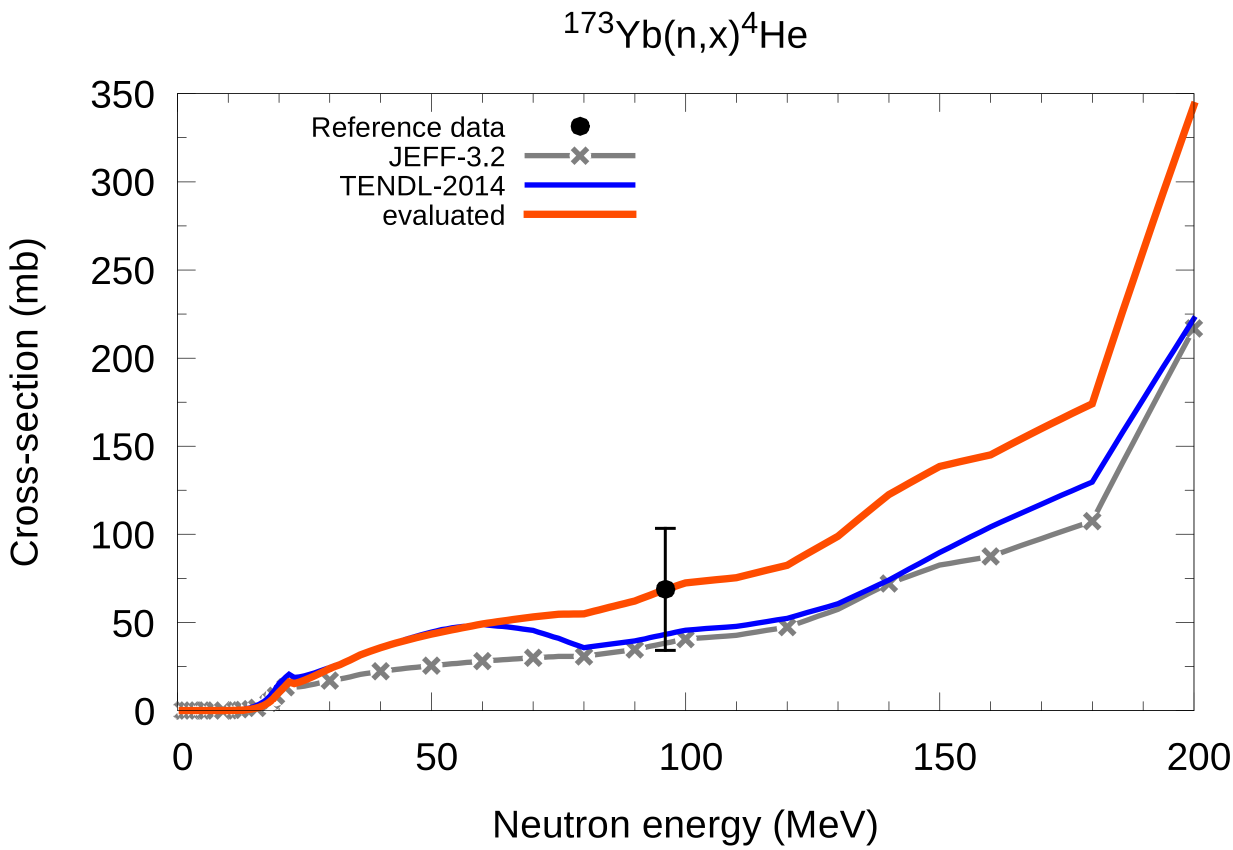
$^{170}Yb(n,x)^{4}He$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



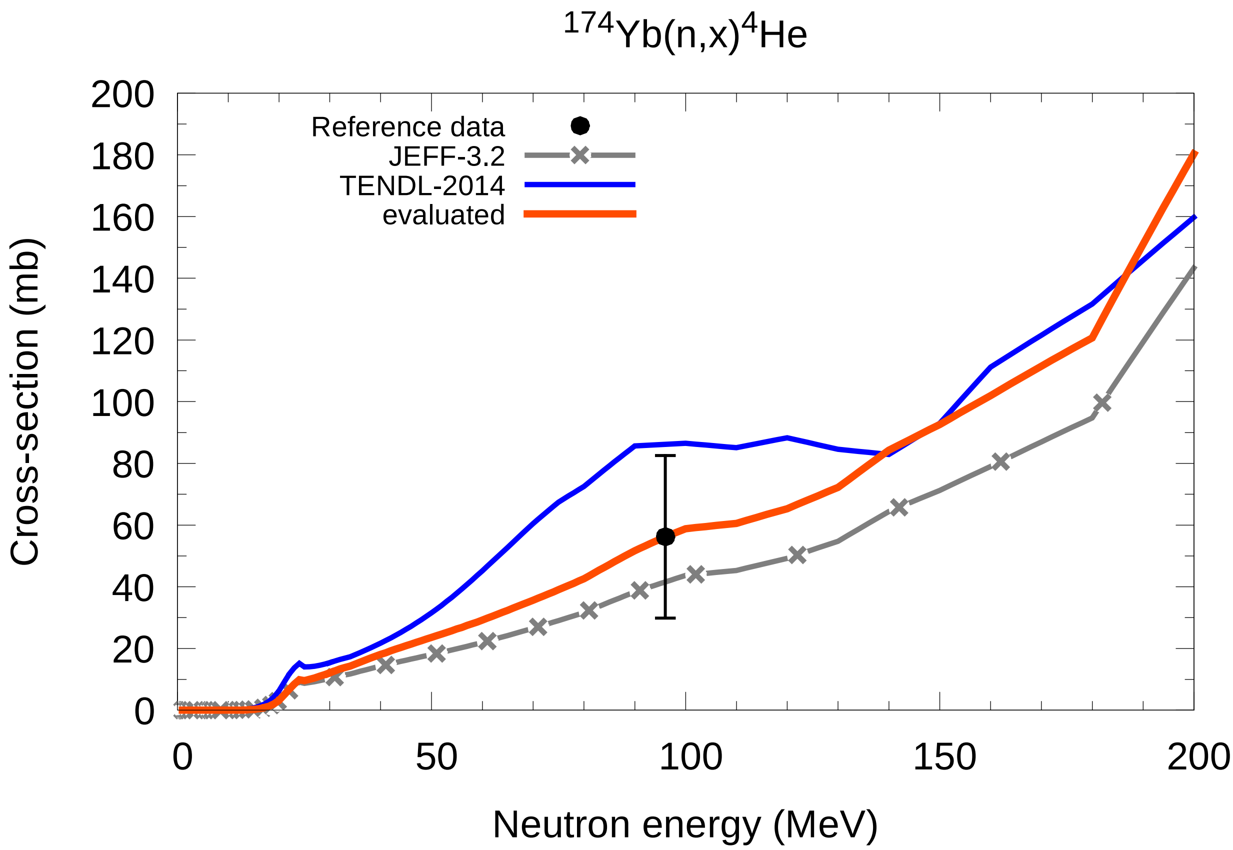
$^{171}Yb(n,x)^{4}He$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450



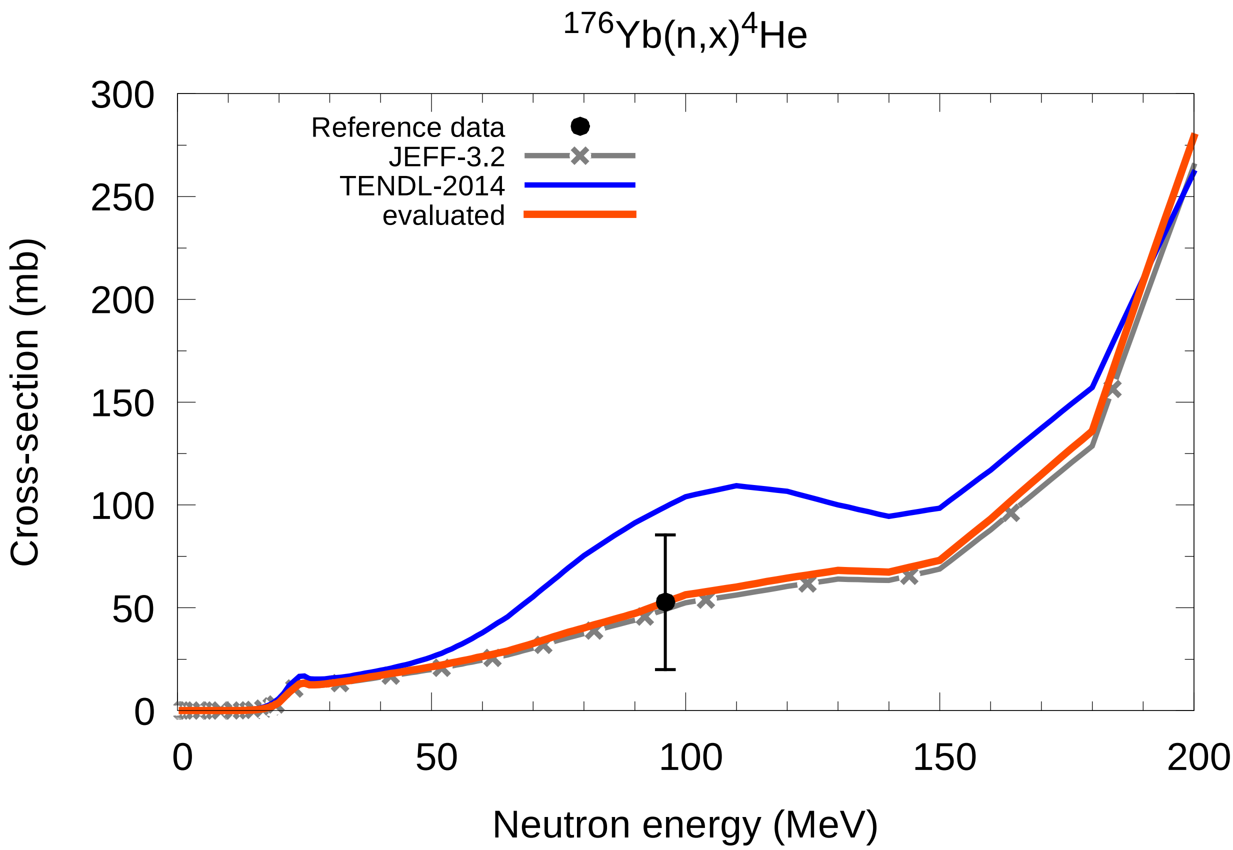
$^{172}Yb(n,x)^{4}He$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



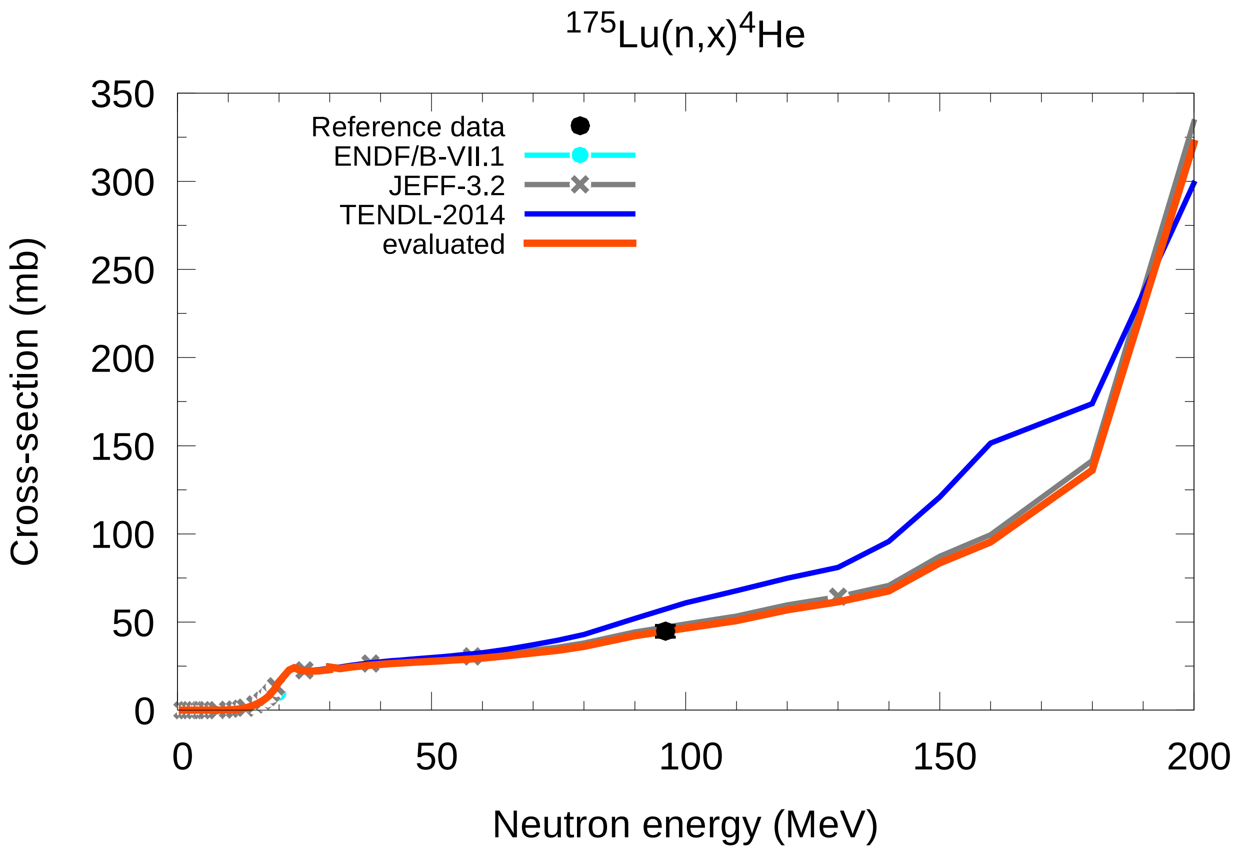
$^{173}Yb(n,x)^{4}He$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



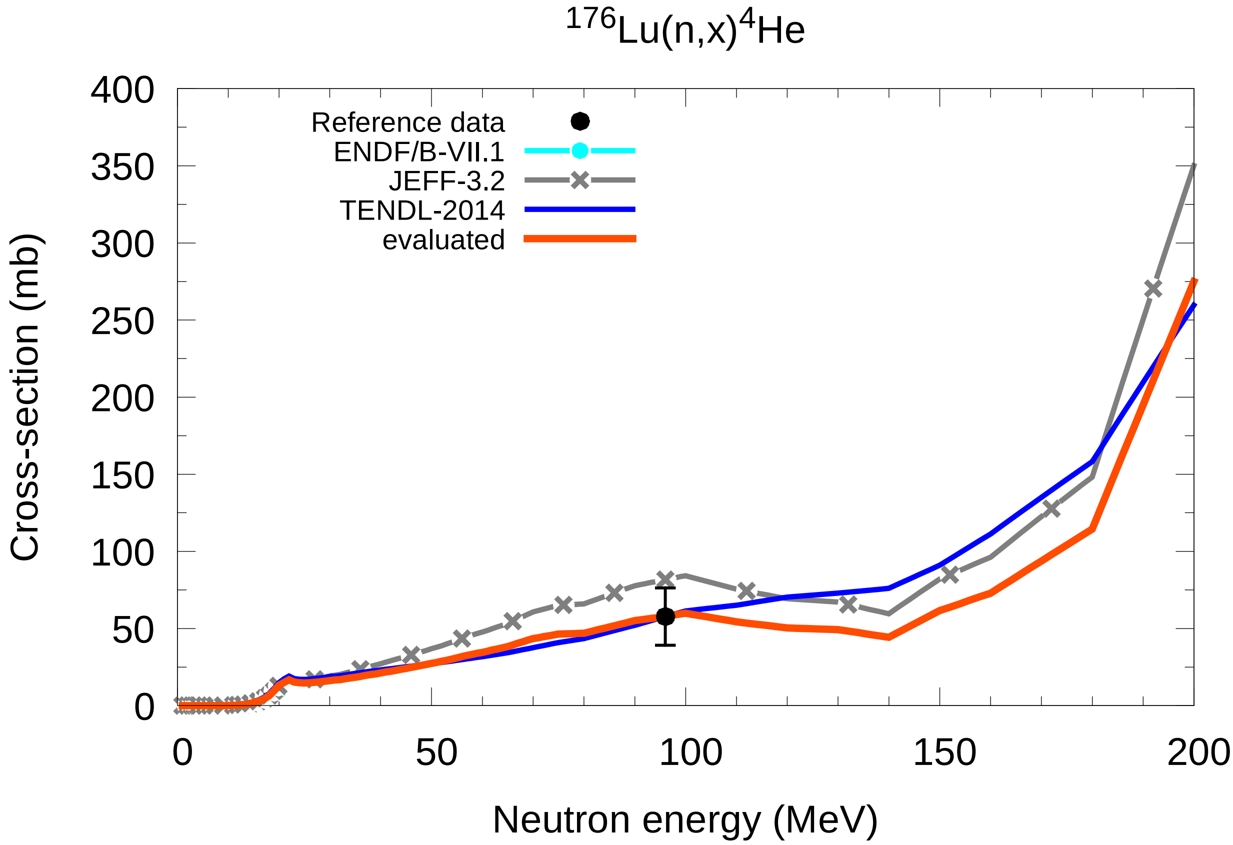
$^{174}Yb(n,x)^{4}He$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200



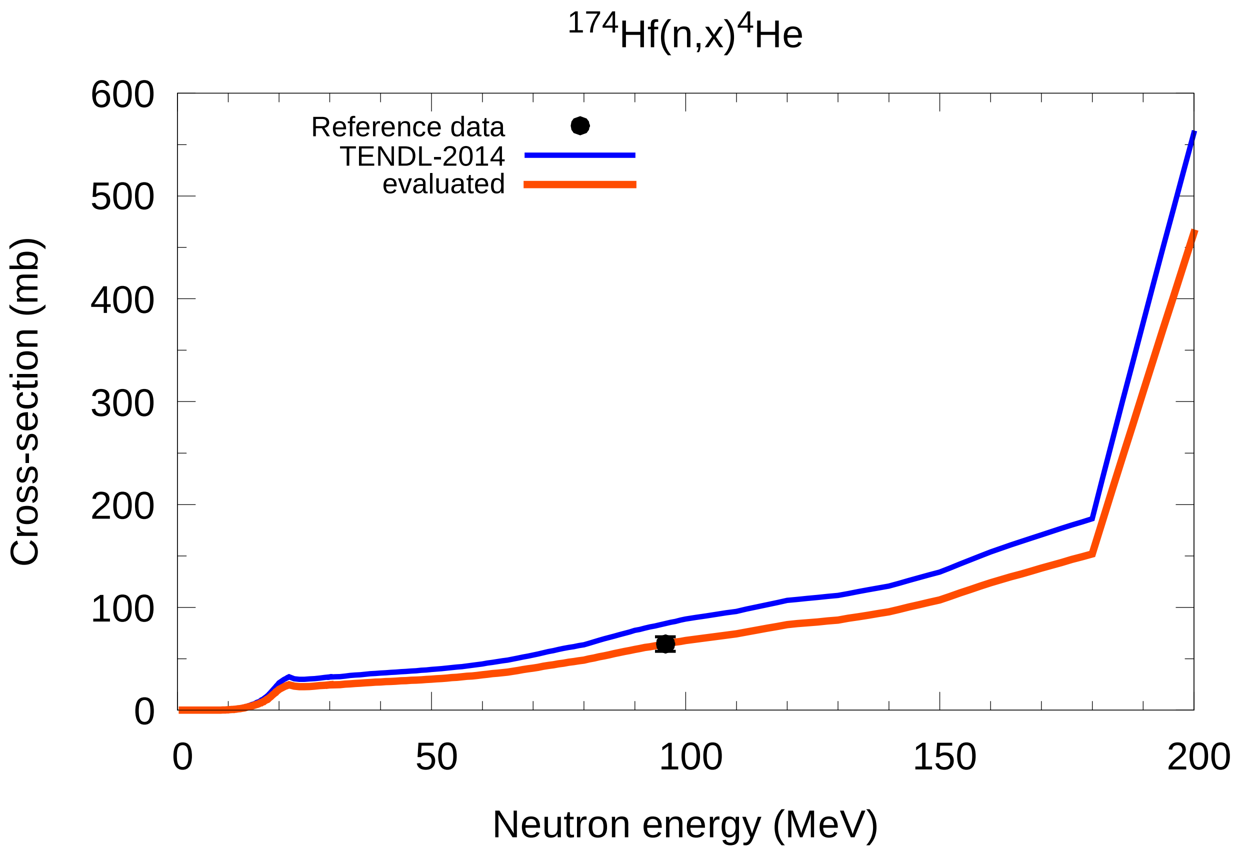
^{176}Yb(n,x)^{4}He
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



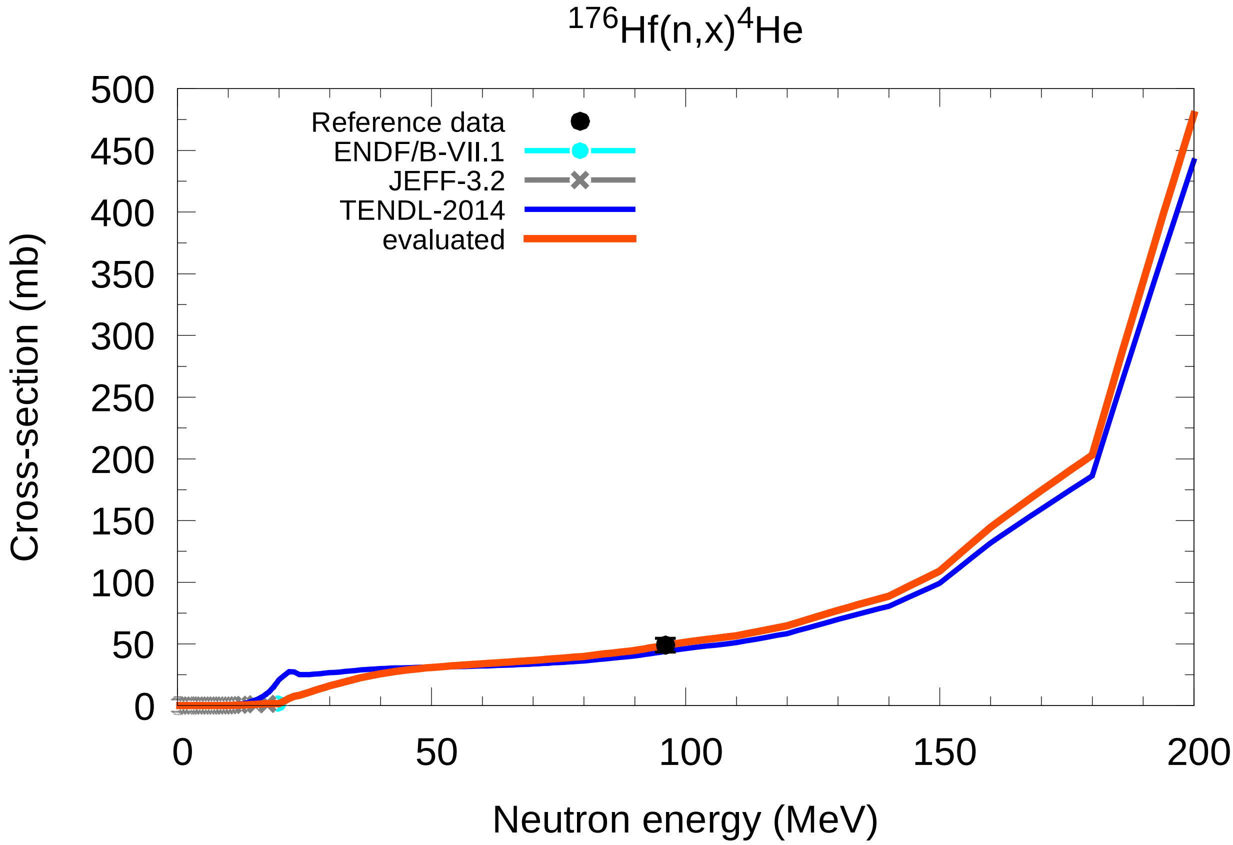
^{175}Lu(n,x)^{4}He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



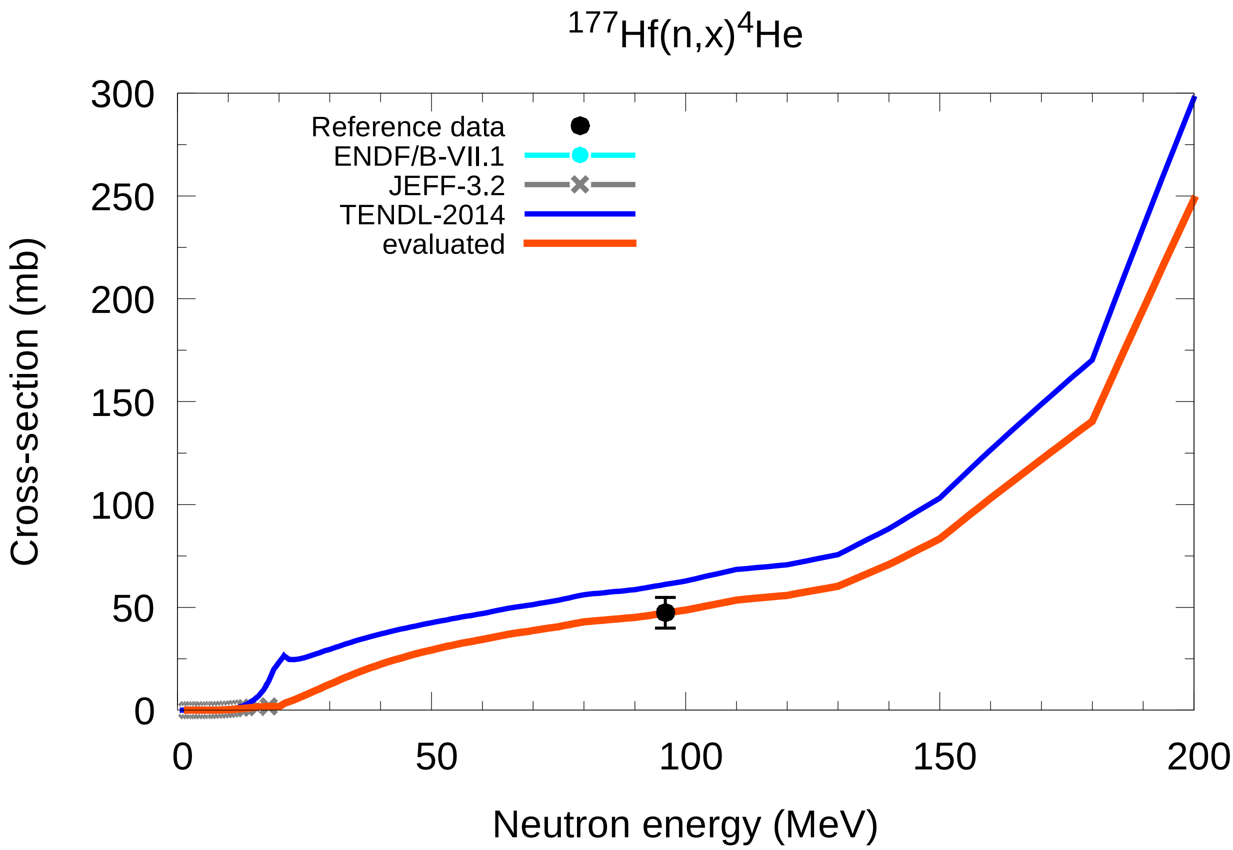
$^{176}Lu(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
0
50
100
150
200



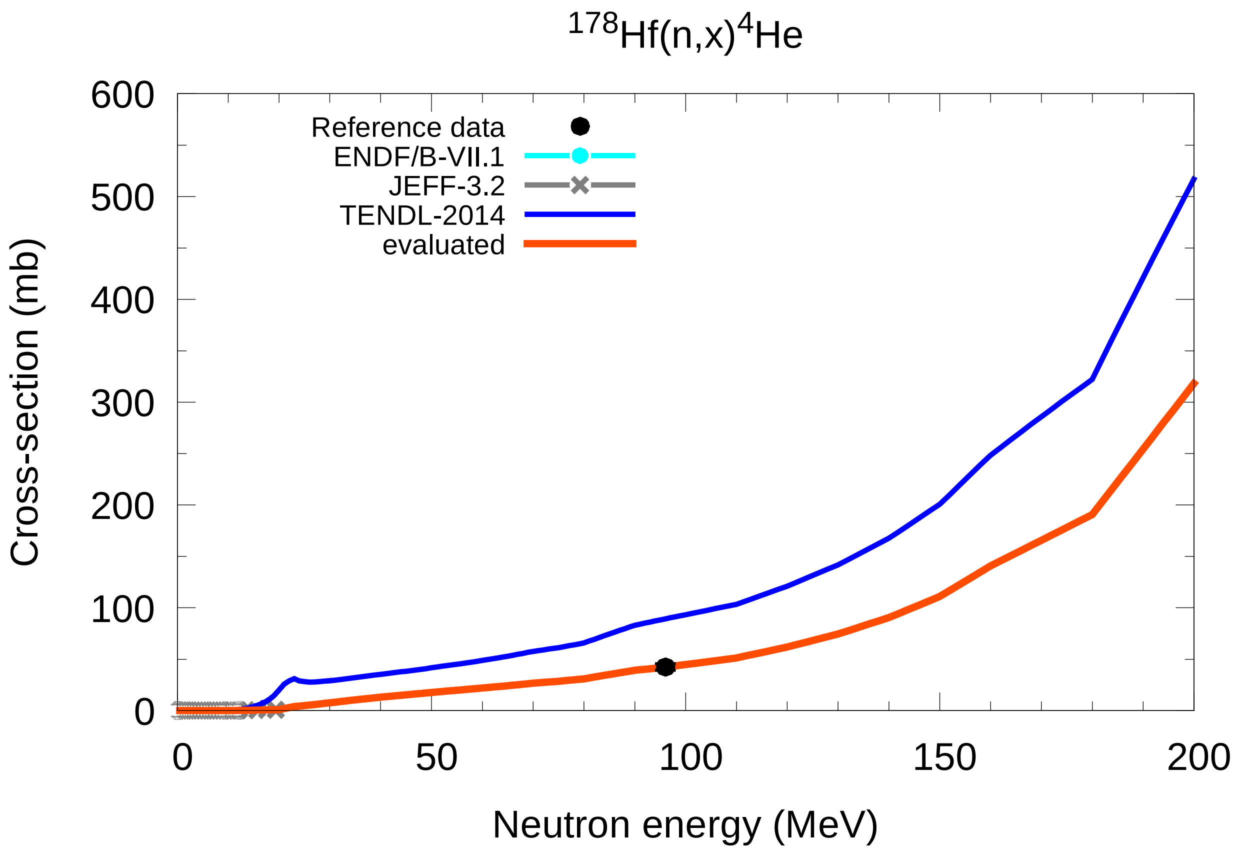
$^{174}Hf(n,x)^{4}He$
Reference data
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



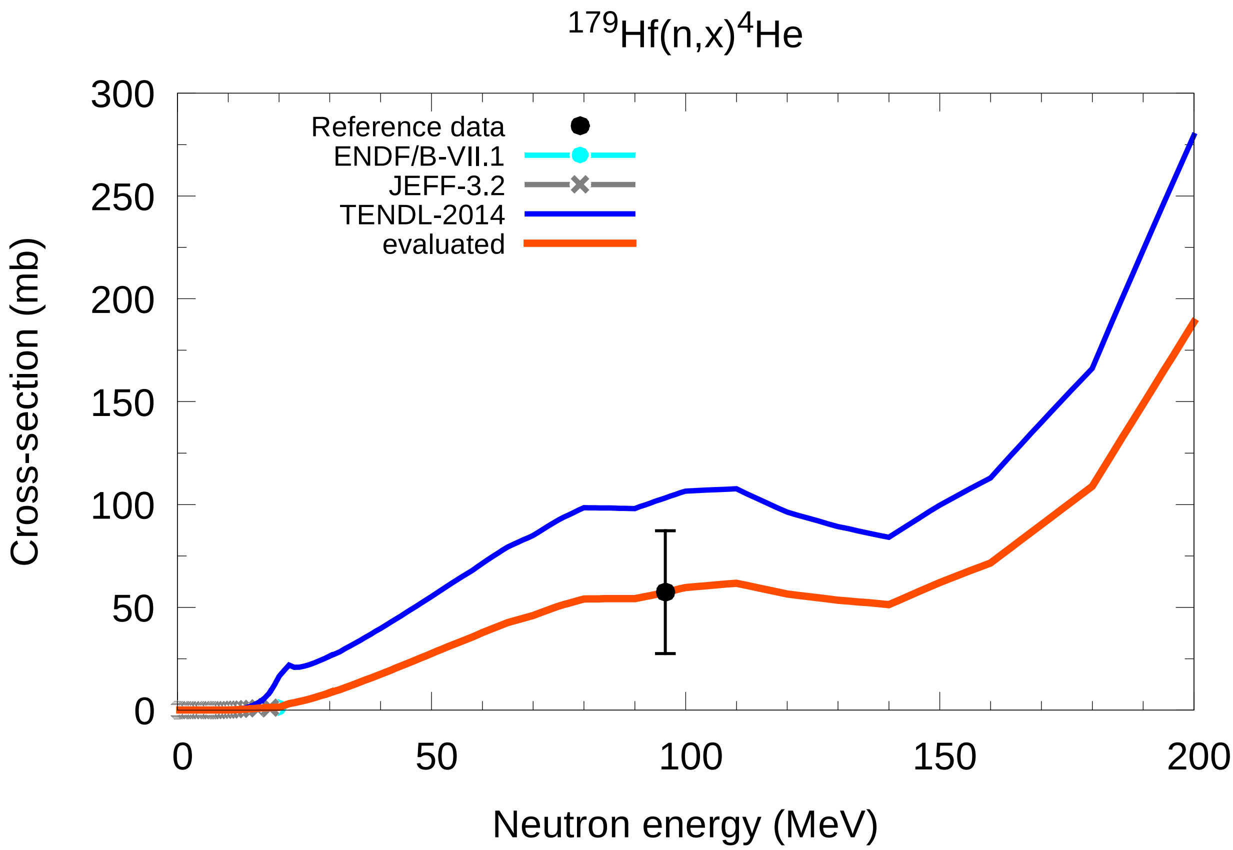
$^{176}Hf(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
450
500



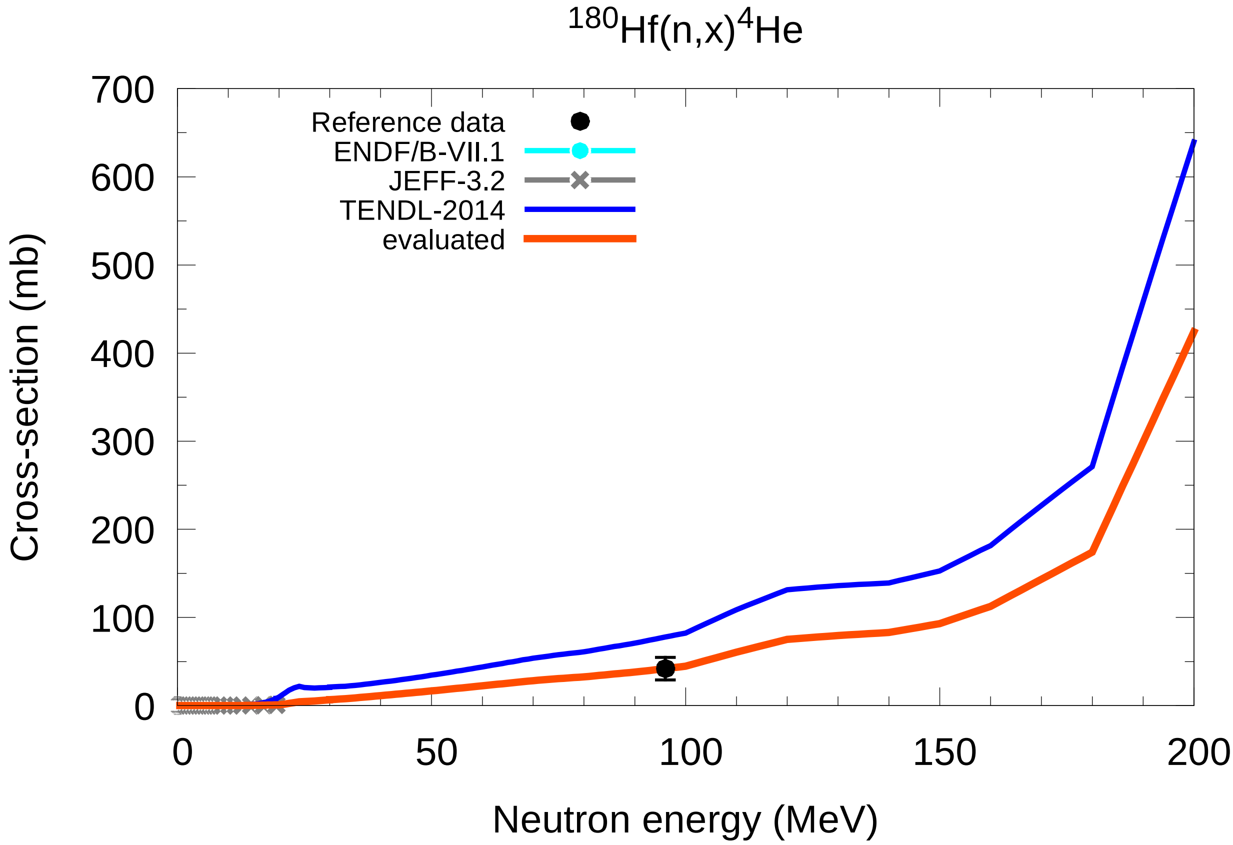
$^{177}Hf(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



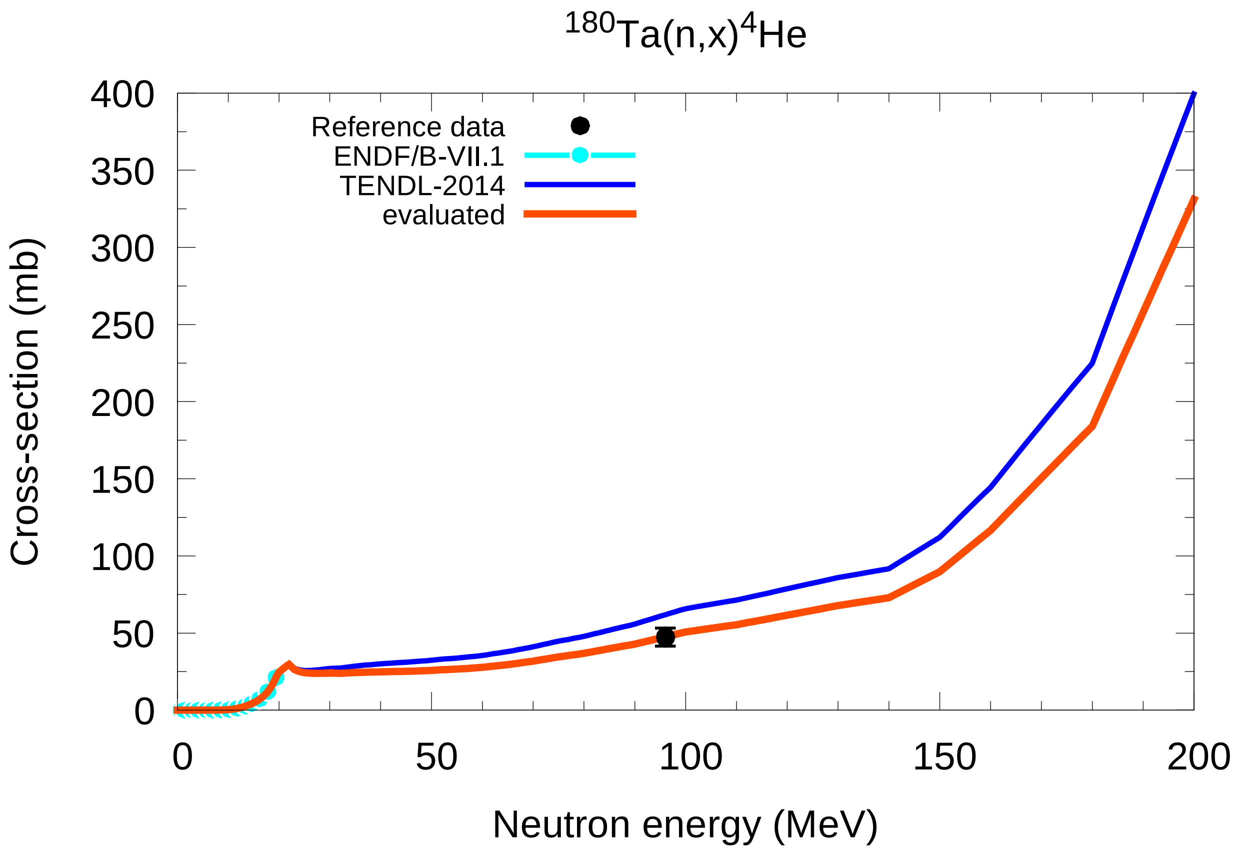
^{178}Hf(n,x)^{4}He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
0
50
100
150
200



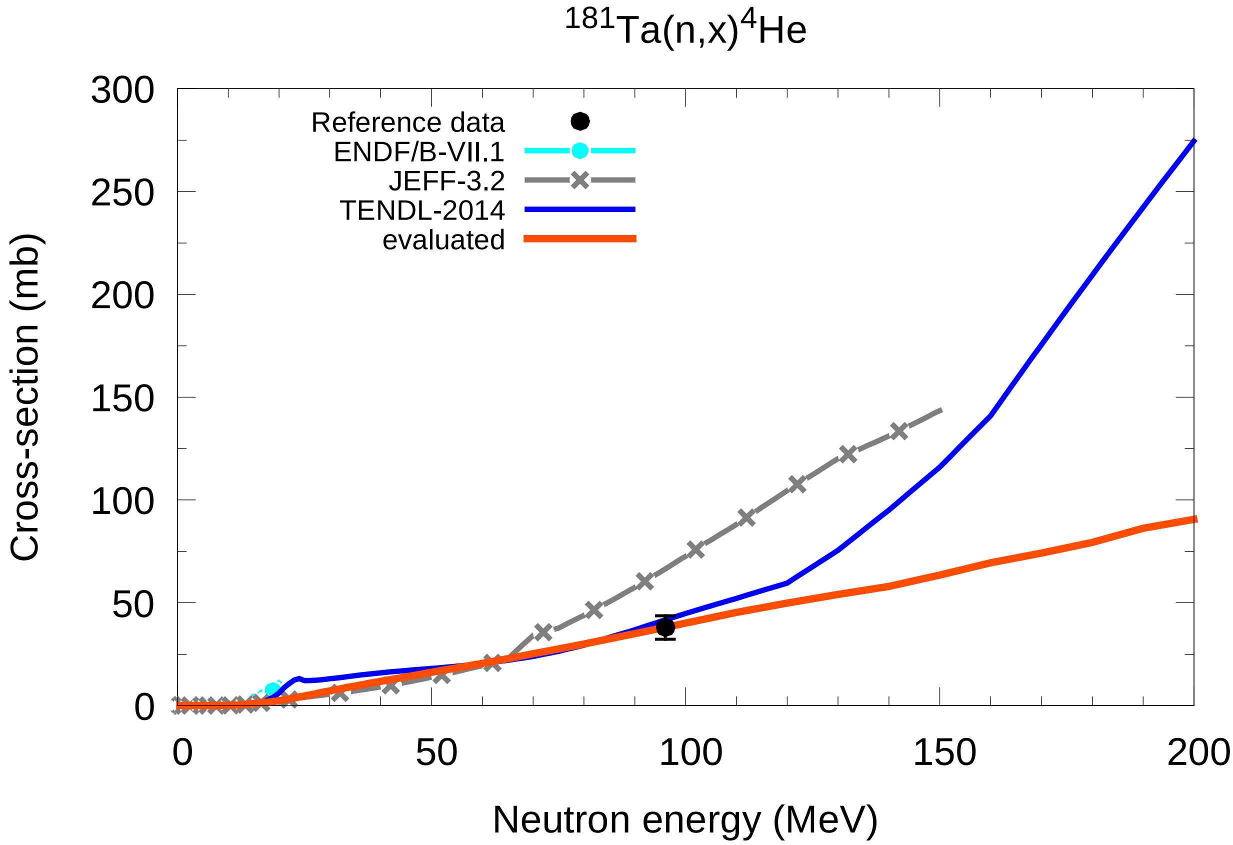
^{179}Hf(n,x)^{4}He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
0
50
100
150
200



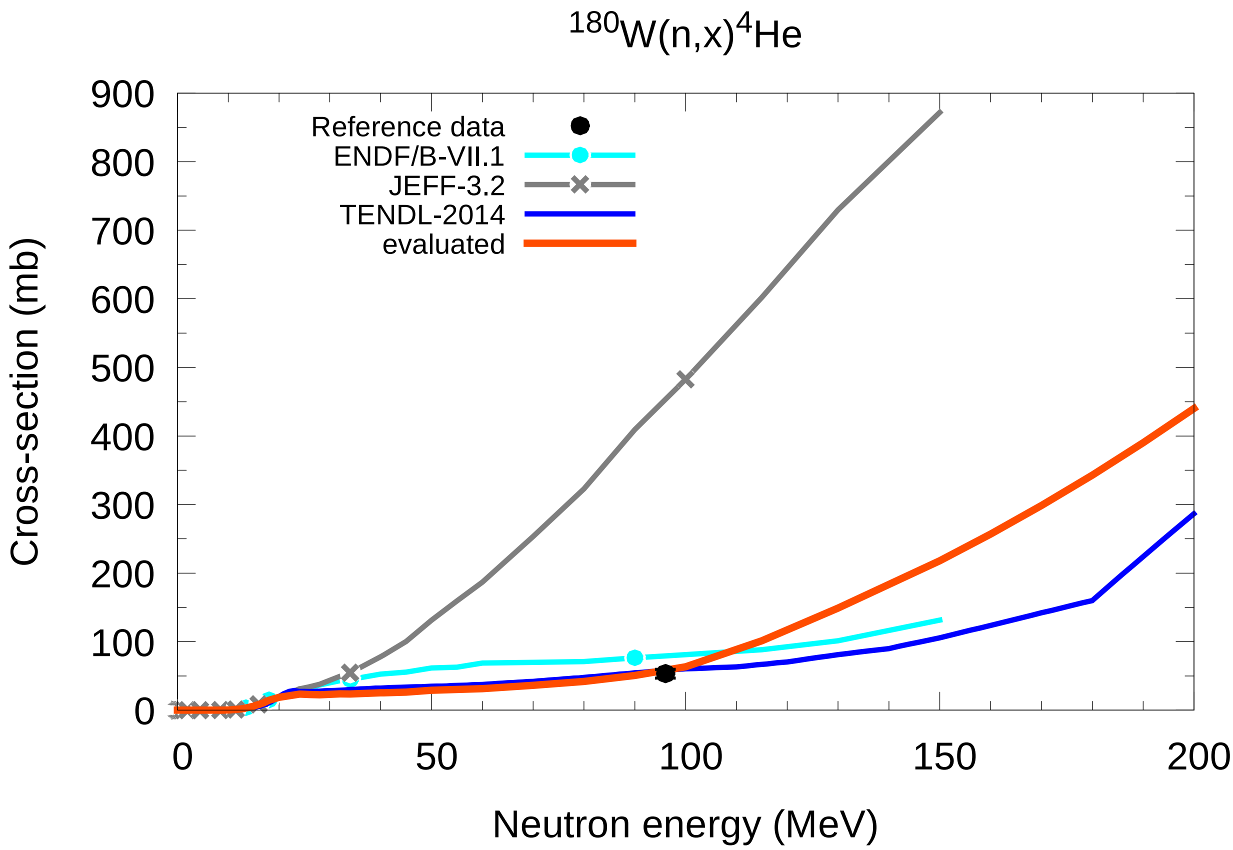
180Hf(n,x)4He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
0
50
100
150
200



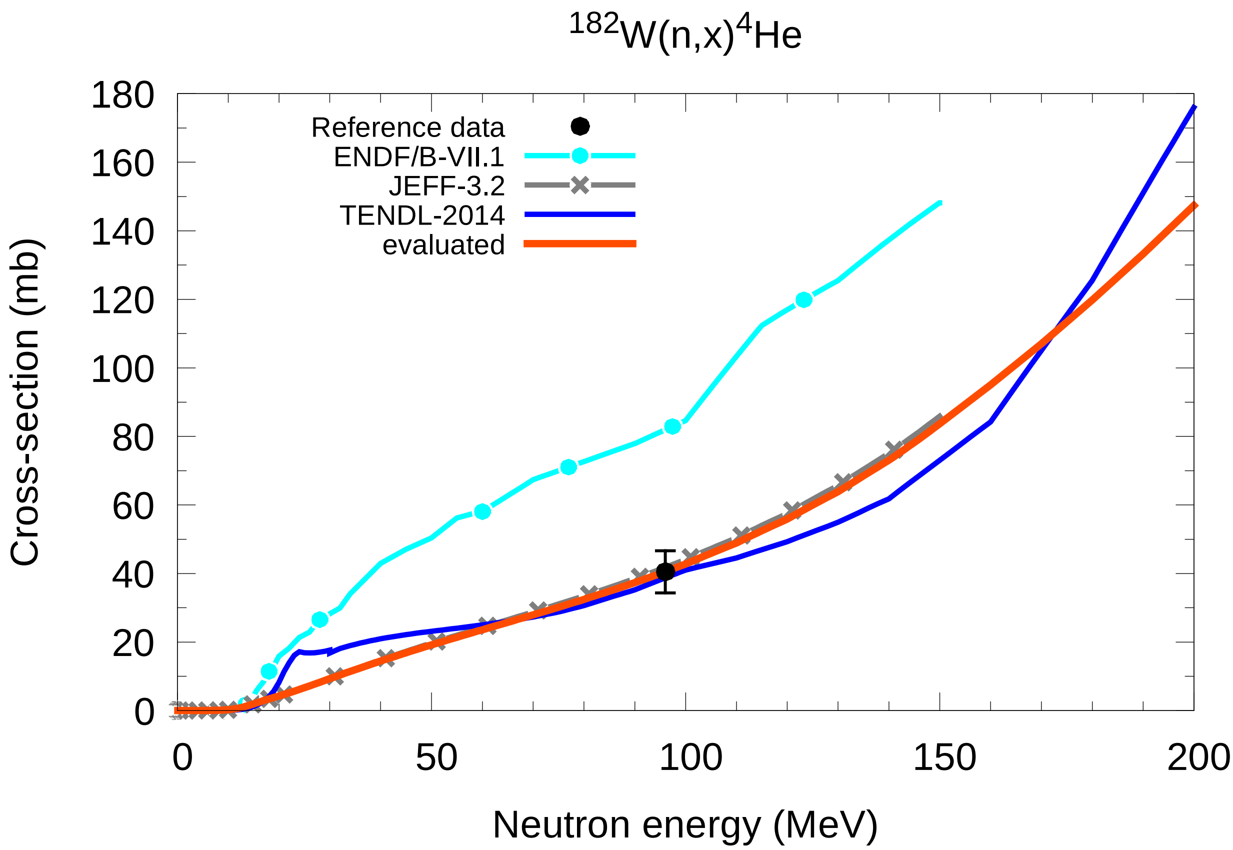
180Ta(n,x)4He
Reference data
ENDF/B-VII.1
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
400
0
50
100
150
200



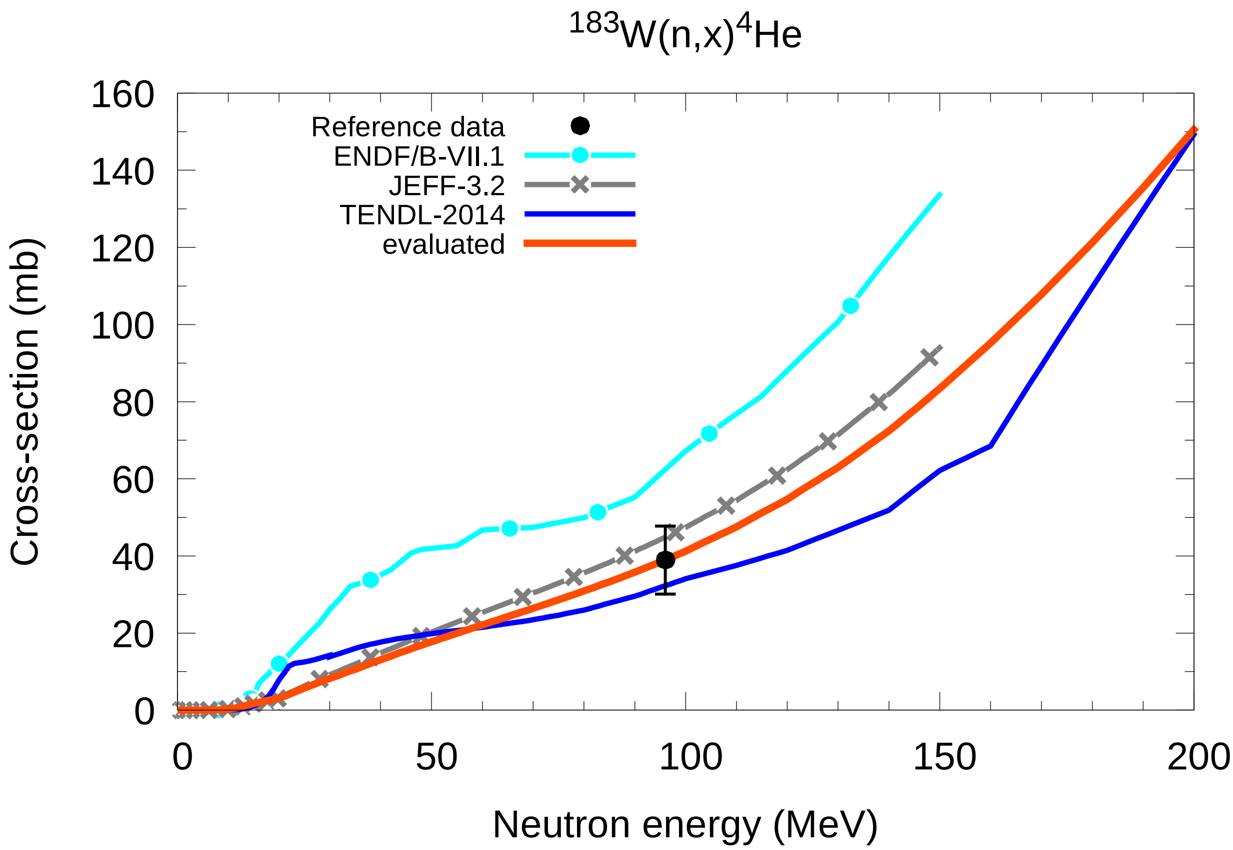
181Ta(n,x)4He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
0
50
100
150
200



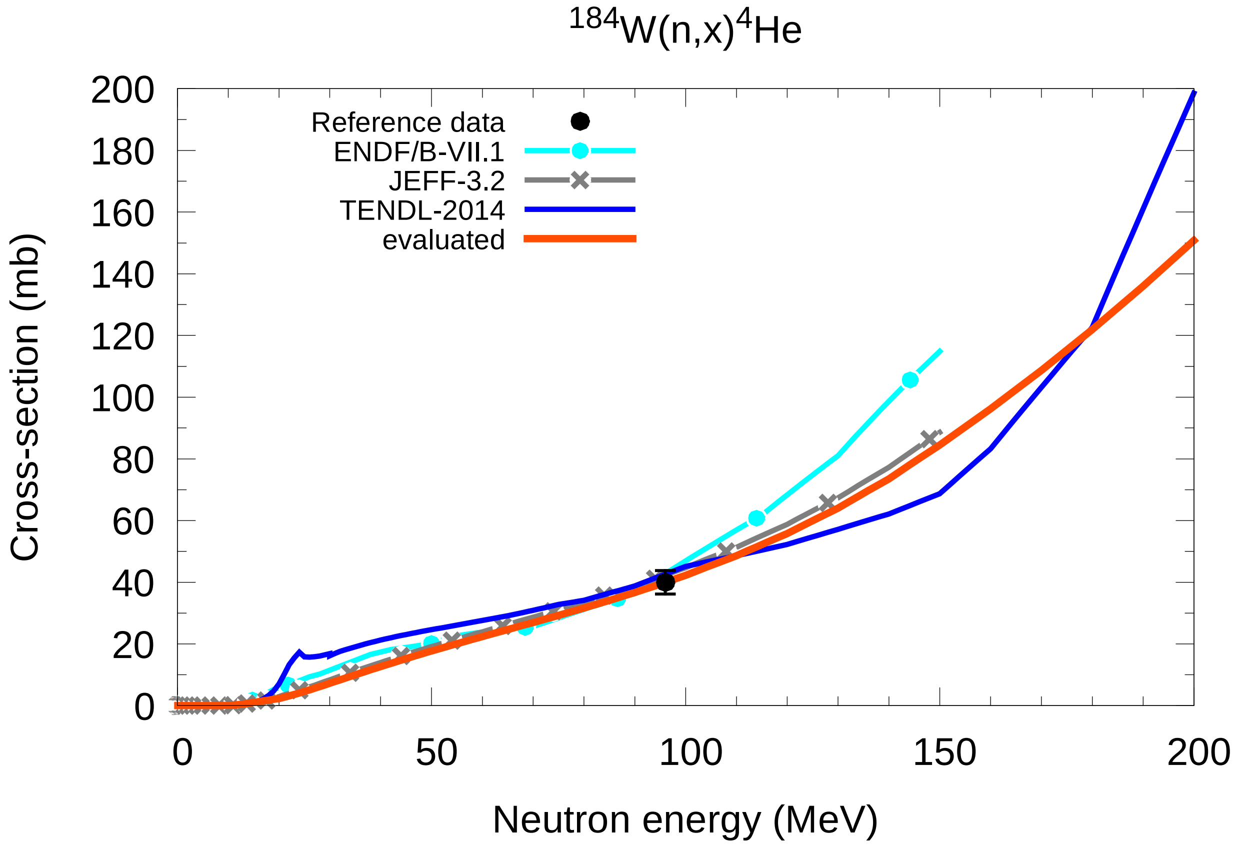
180W(n,x)4He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
100
200
300
400
500
600
700
800
900
0
50
100
150
200



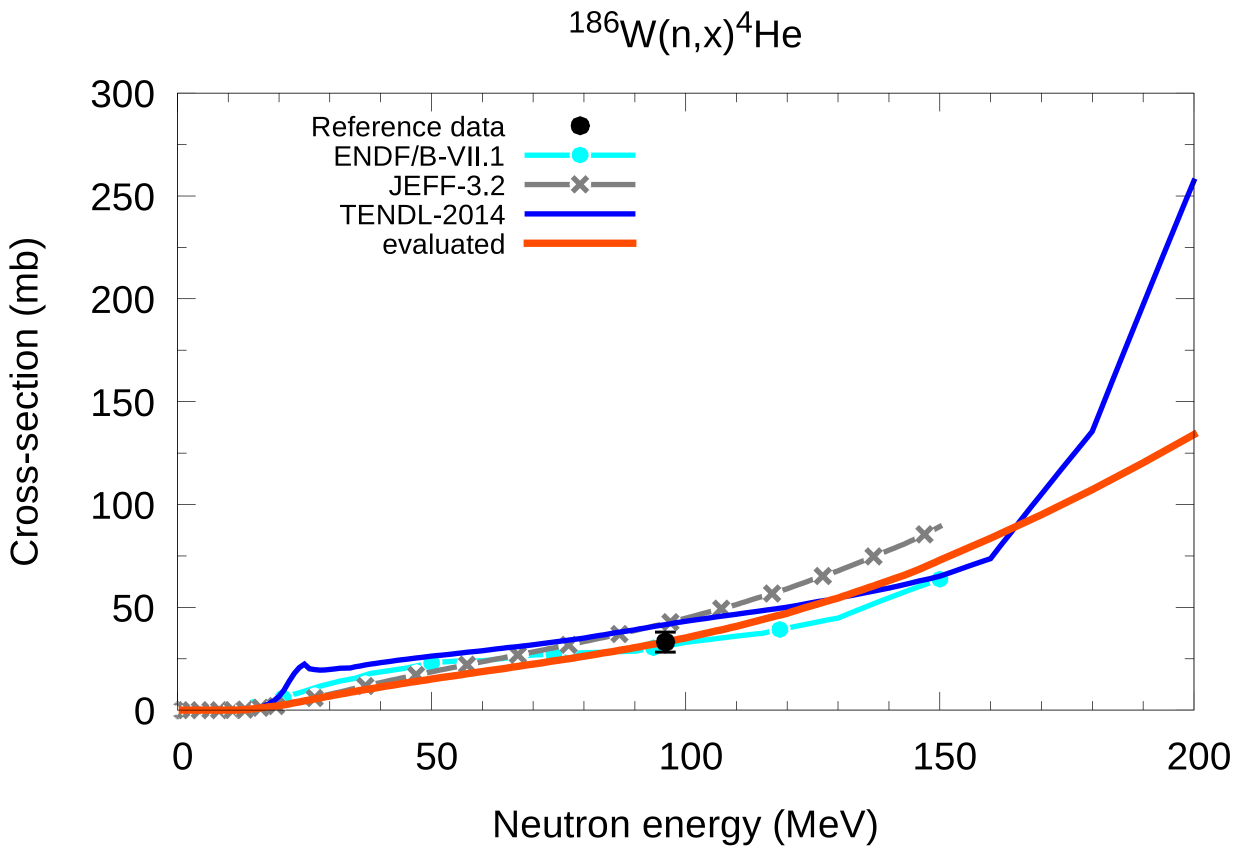
$^{182}W(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
0
50
100
150
200



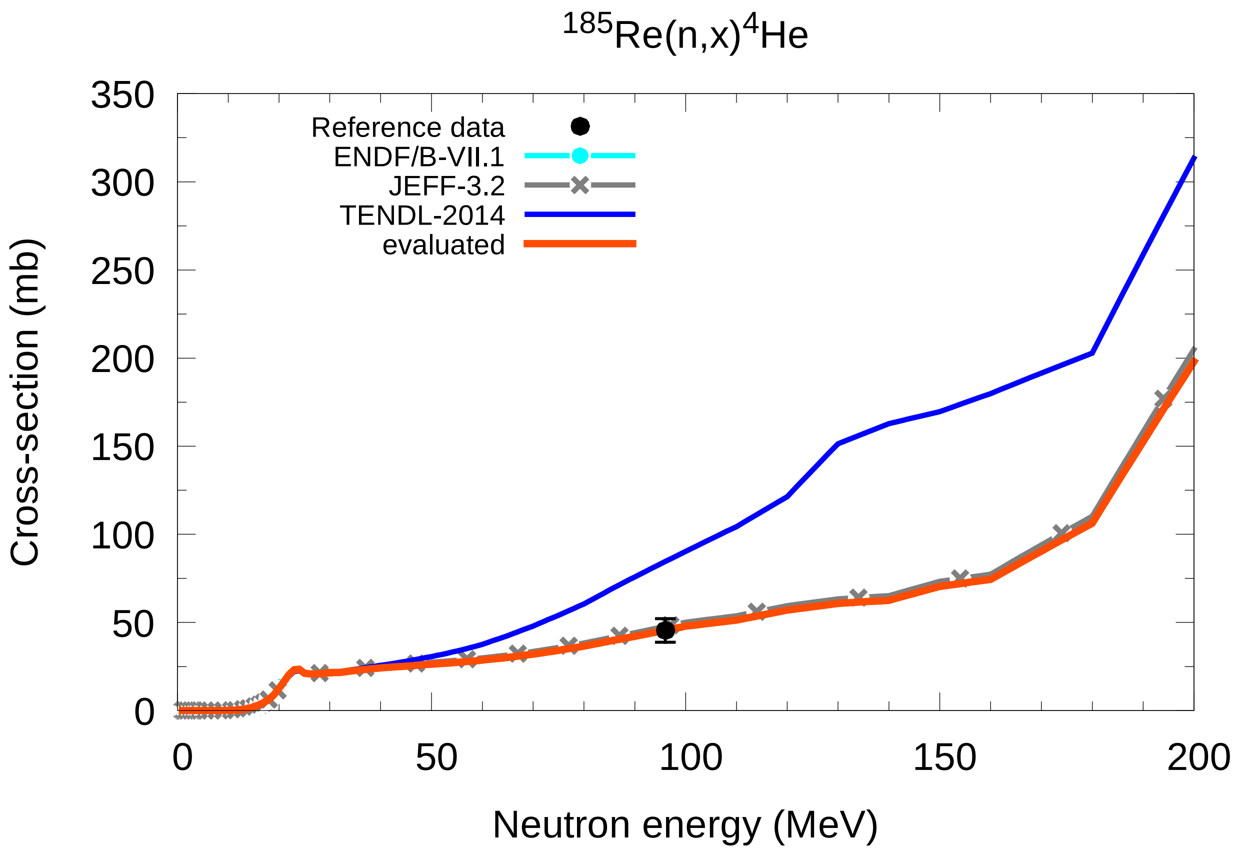
$^{183}W(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
0
50
100
150
200

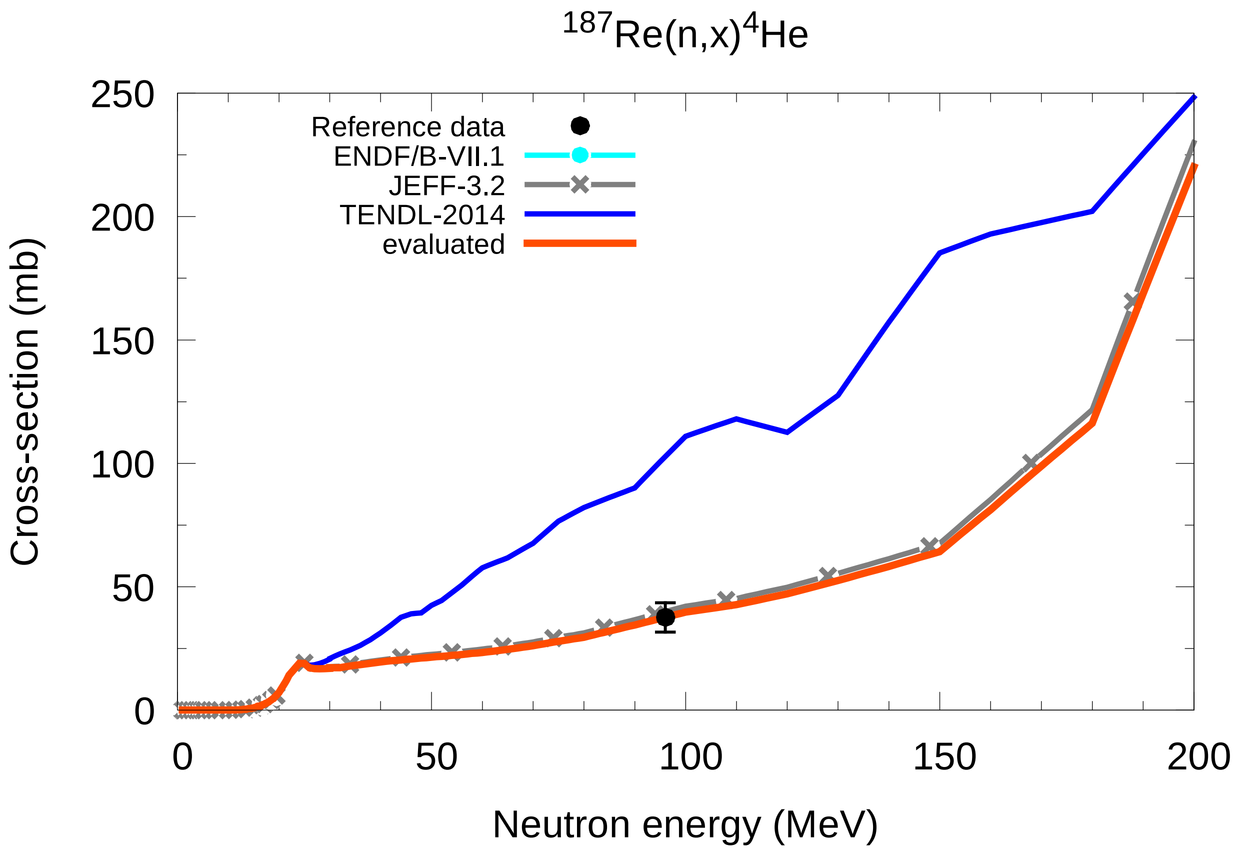


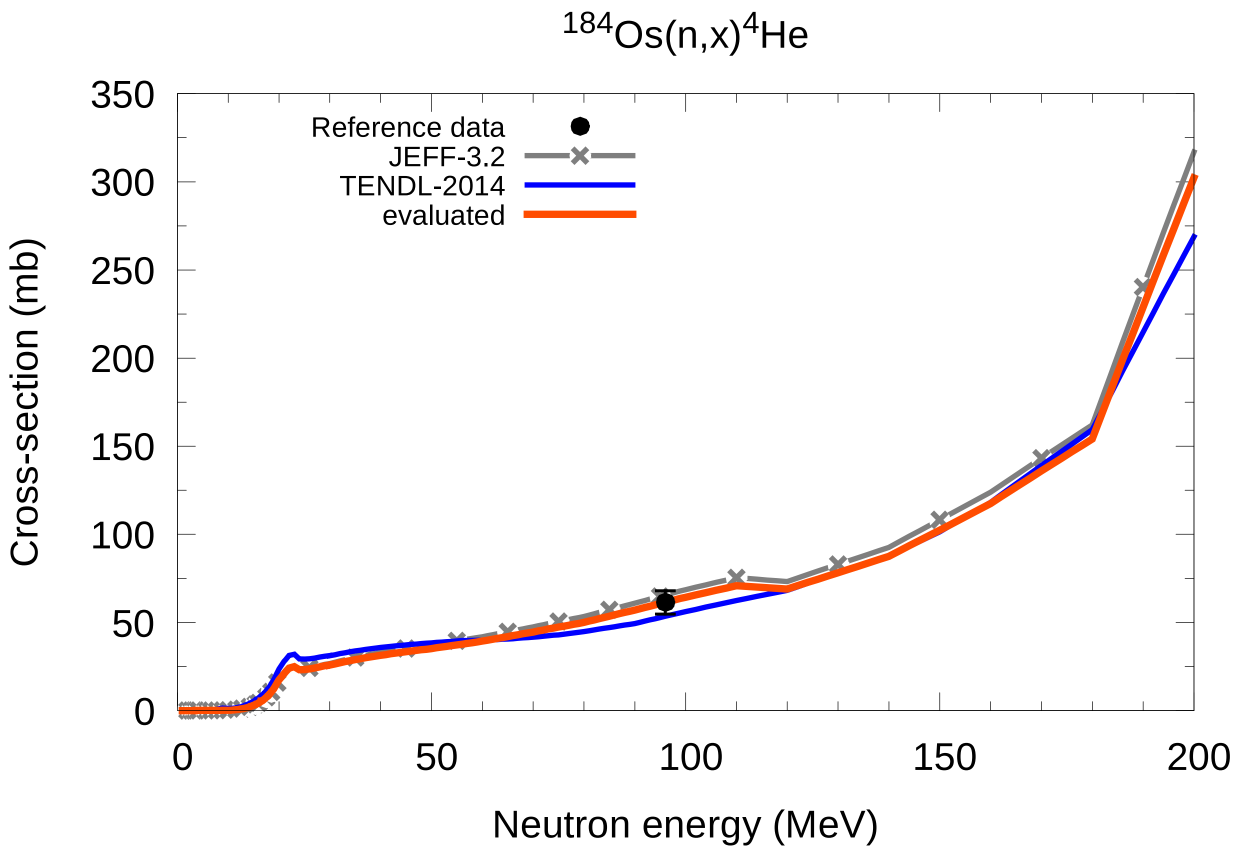
$^{184}W(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200



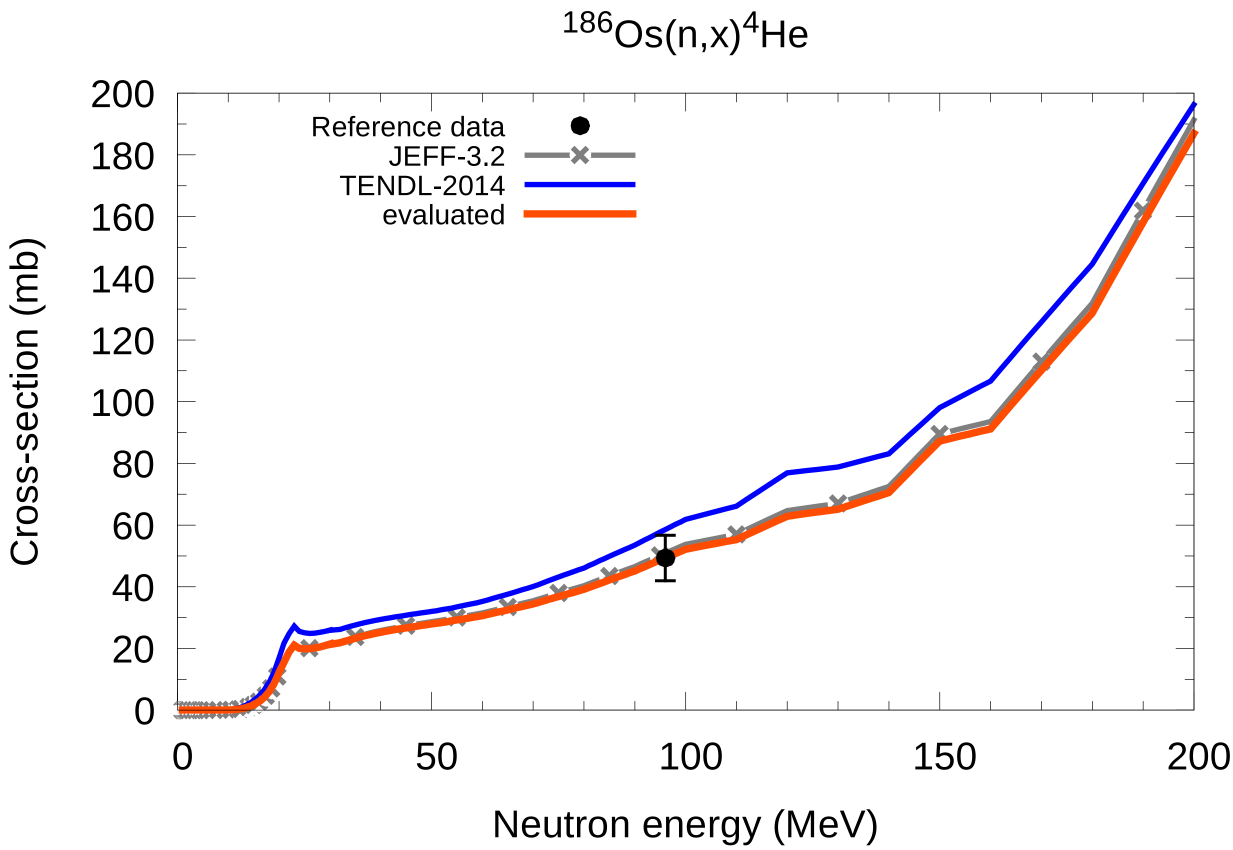
$^{186}W(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
0
50
100
150
200


185Re(n,x)4He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350

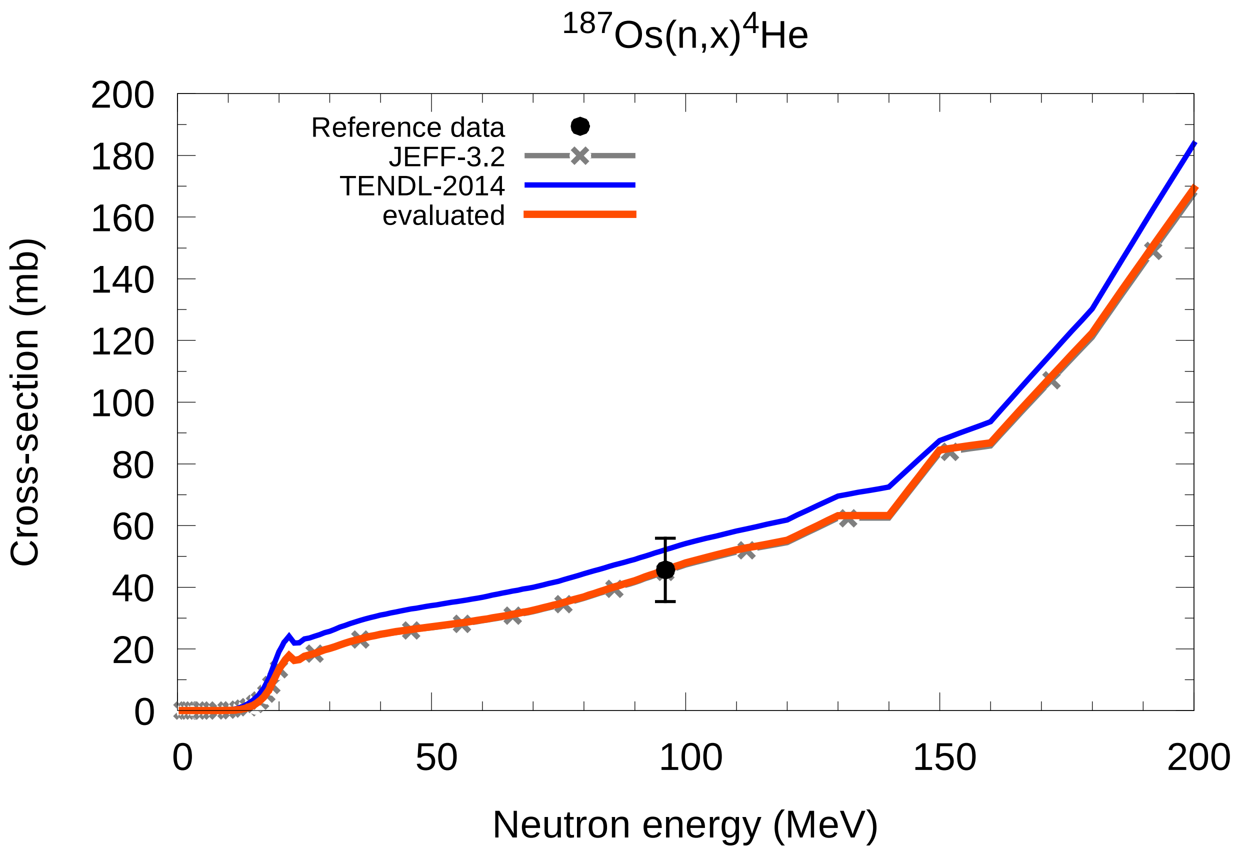

187Re(n,x)4He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



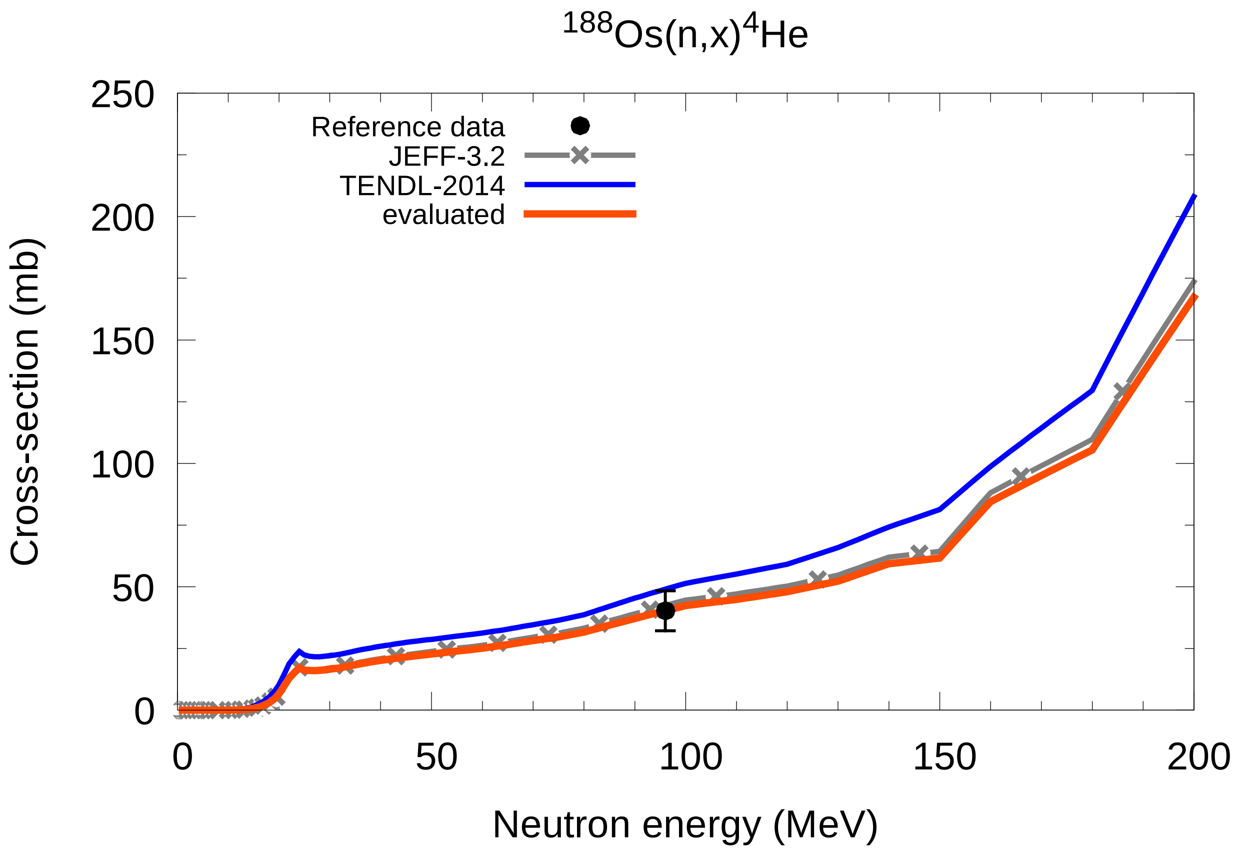
$^{184}Os(n,x)^{4}He$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



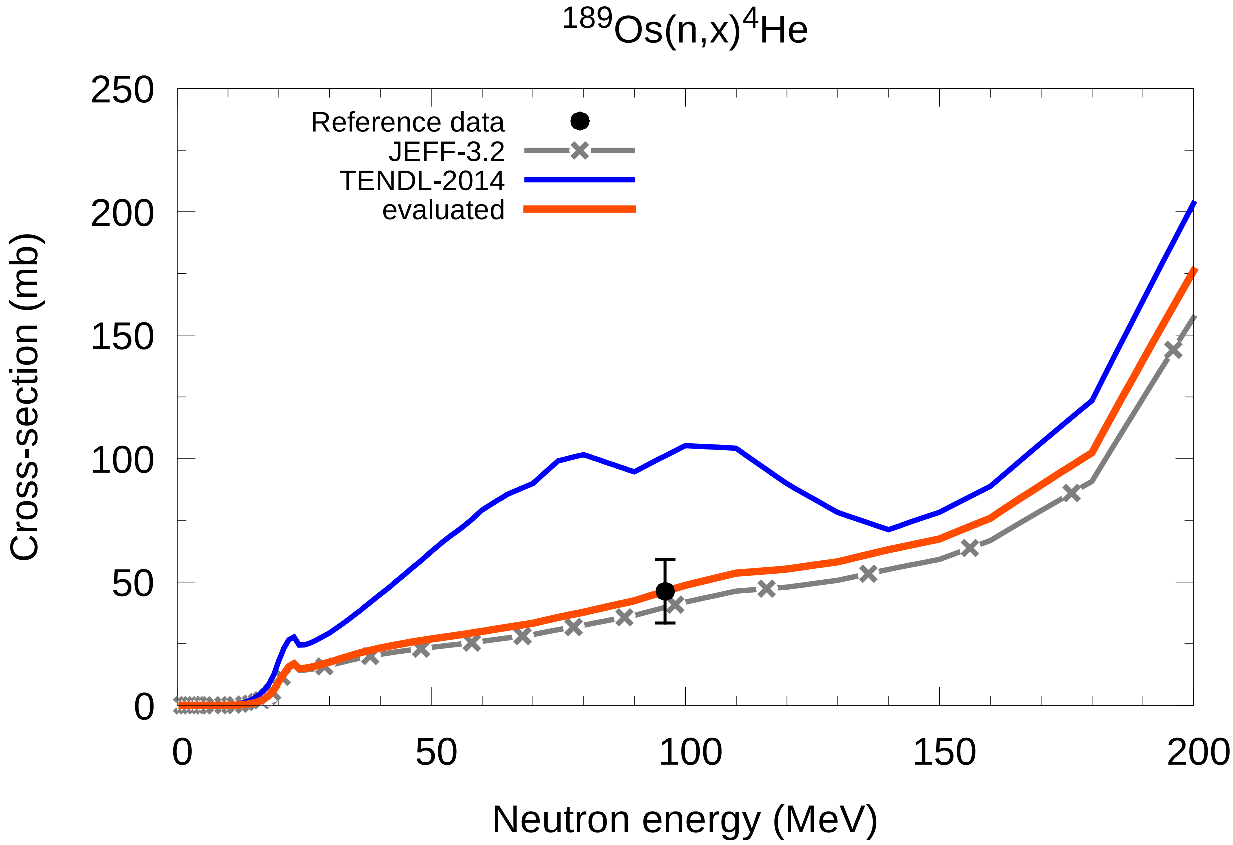
$^{186}Os(n,x)^{4}He$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200



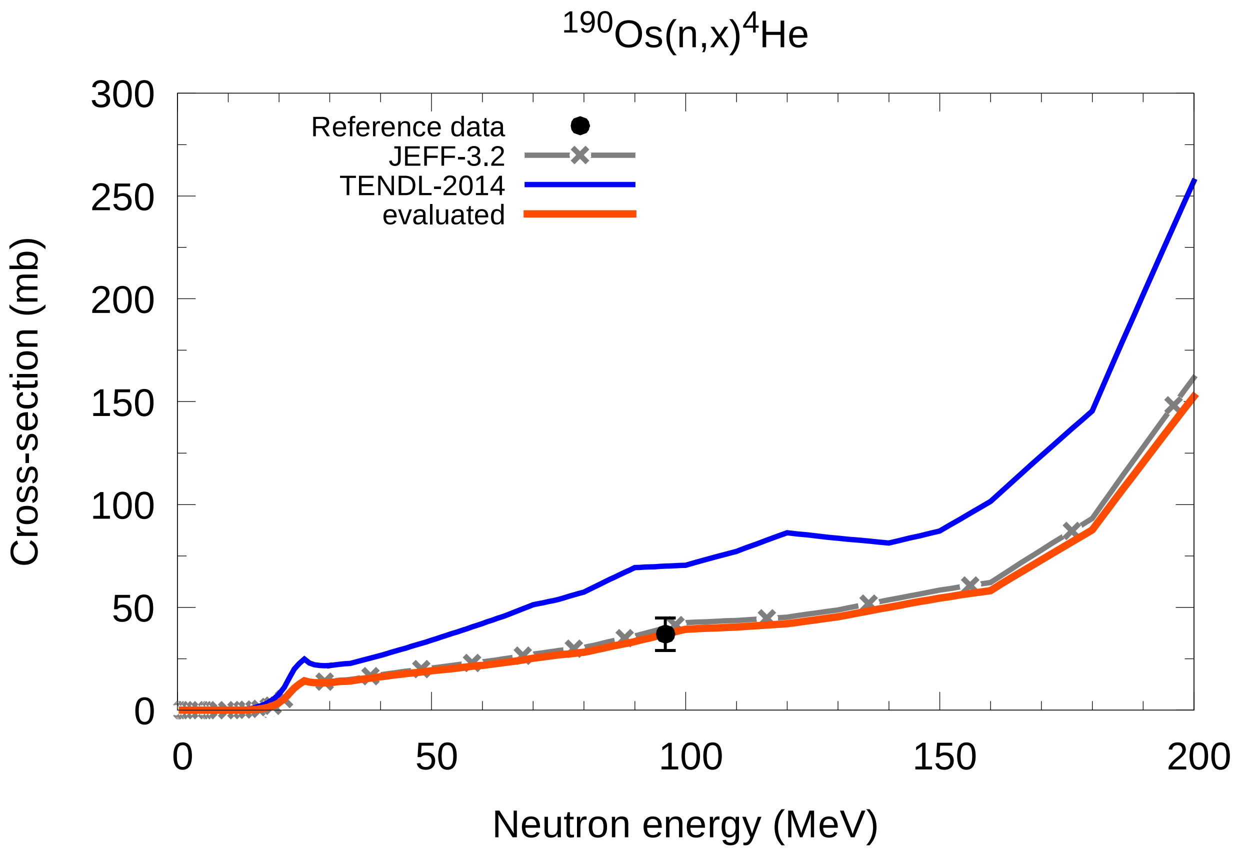
$^{187}Os(n,x)^{4}He$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200



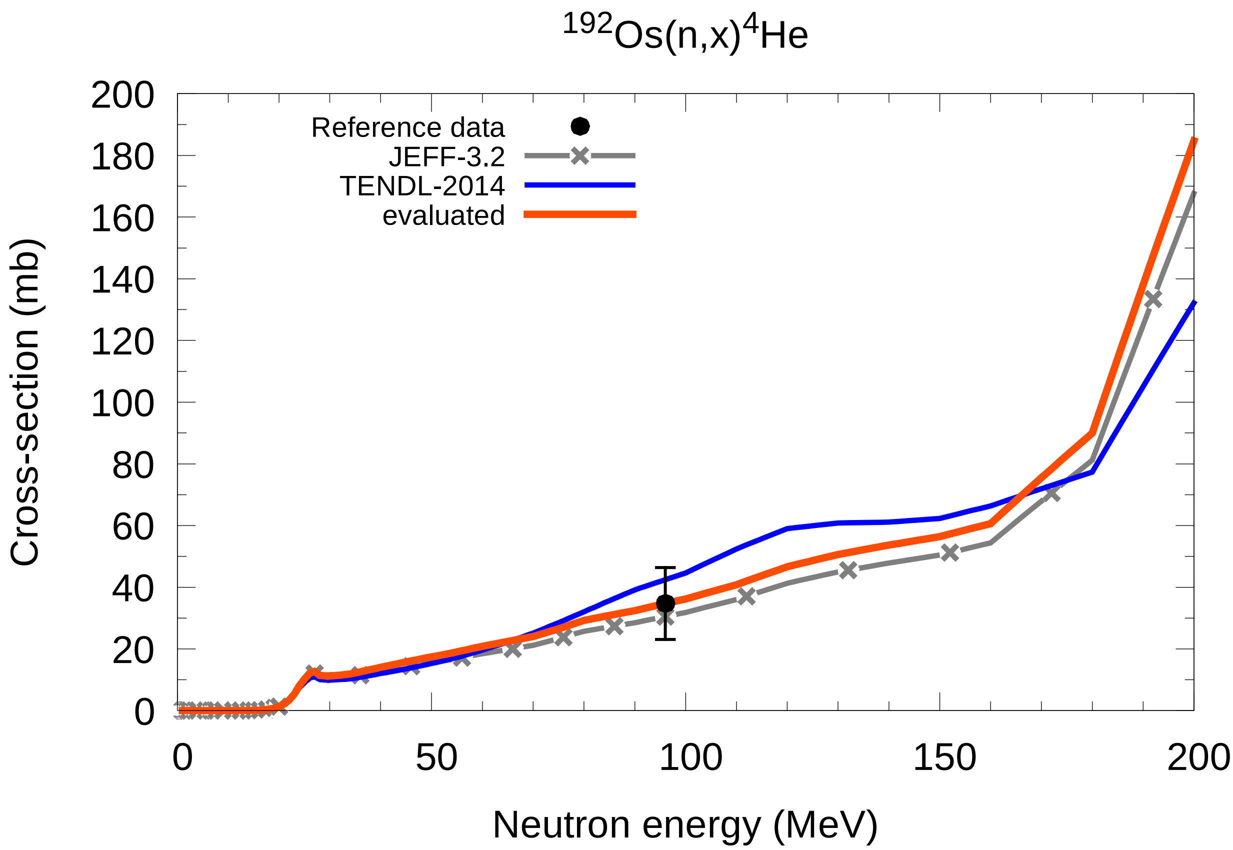
$^{188}Os(n,x)^{4}He$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
0
50
100
150
200



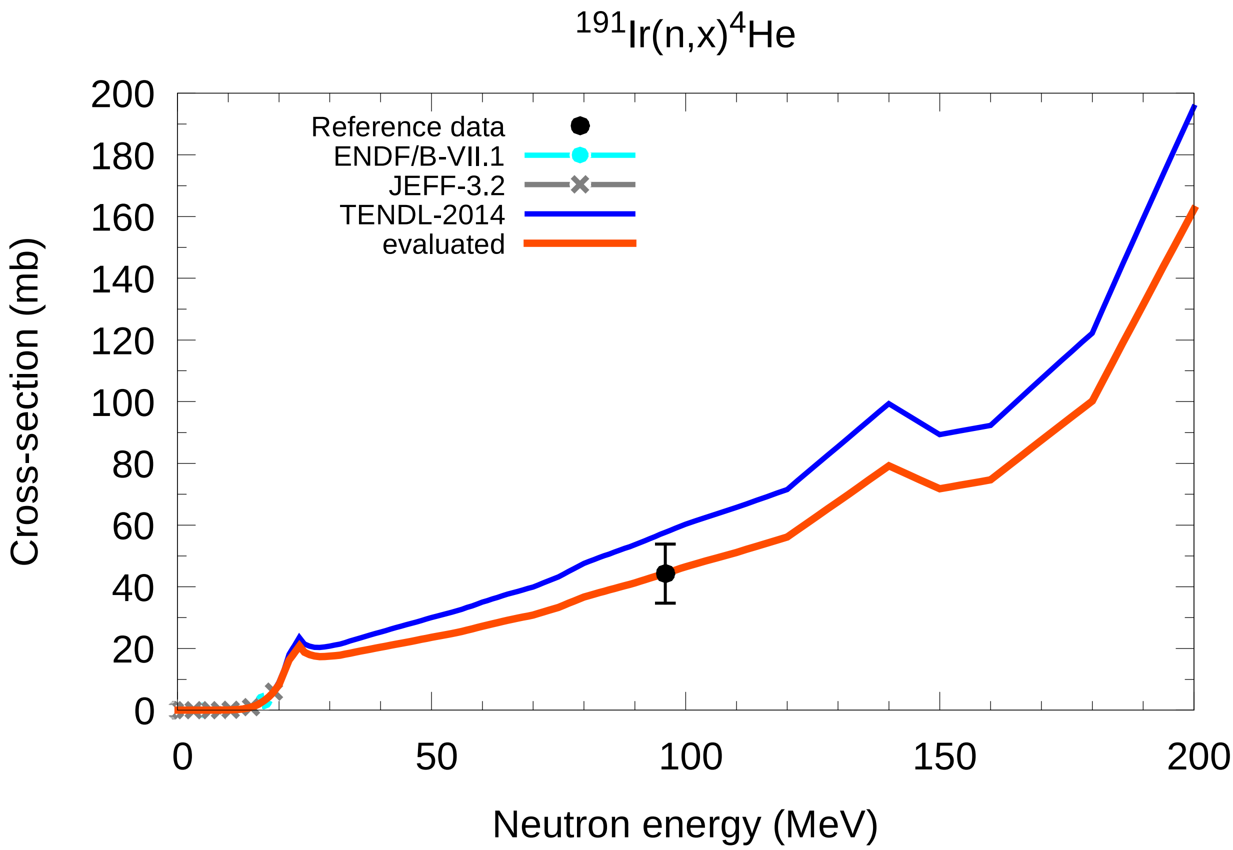
^{189}Os(n,x)^{4}He
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



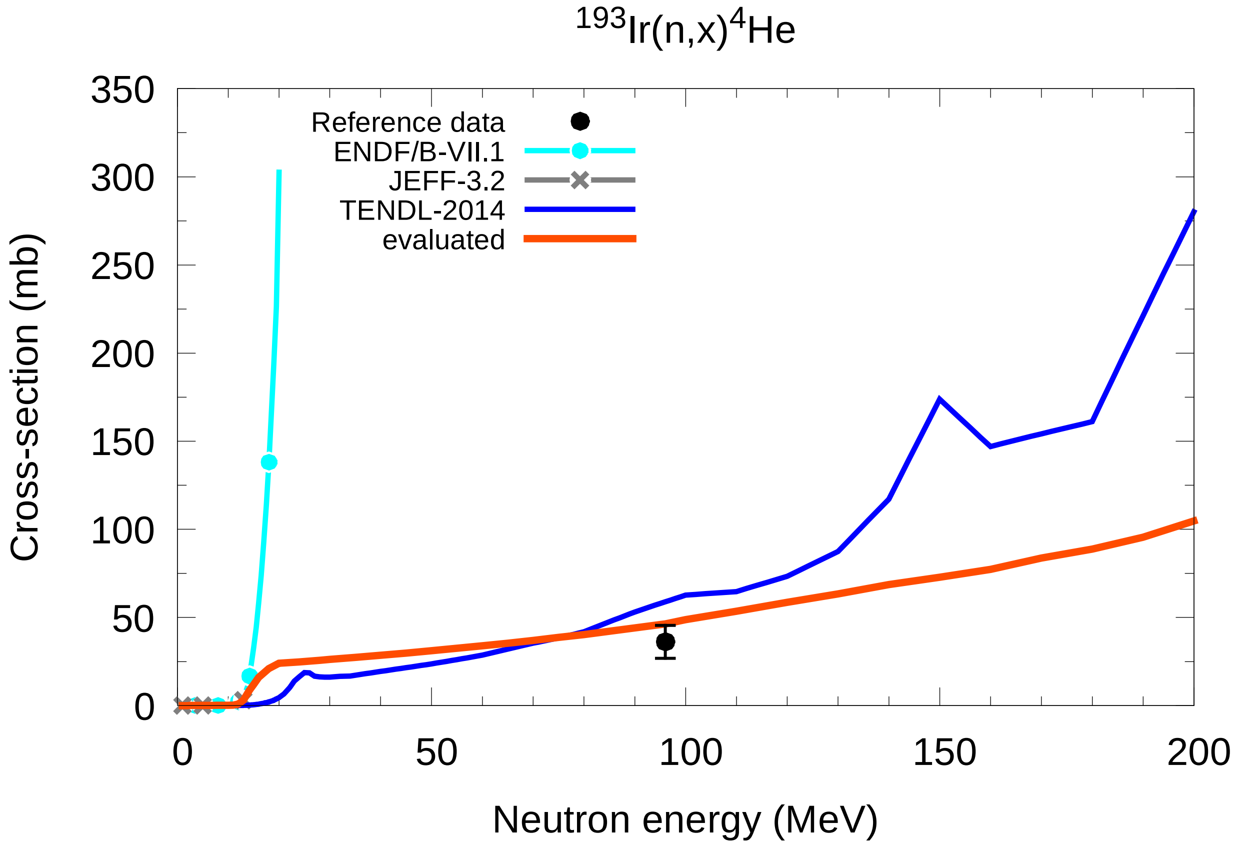
^{190}Os(n,x)^{4}He
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



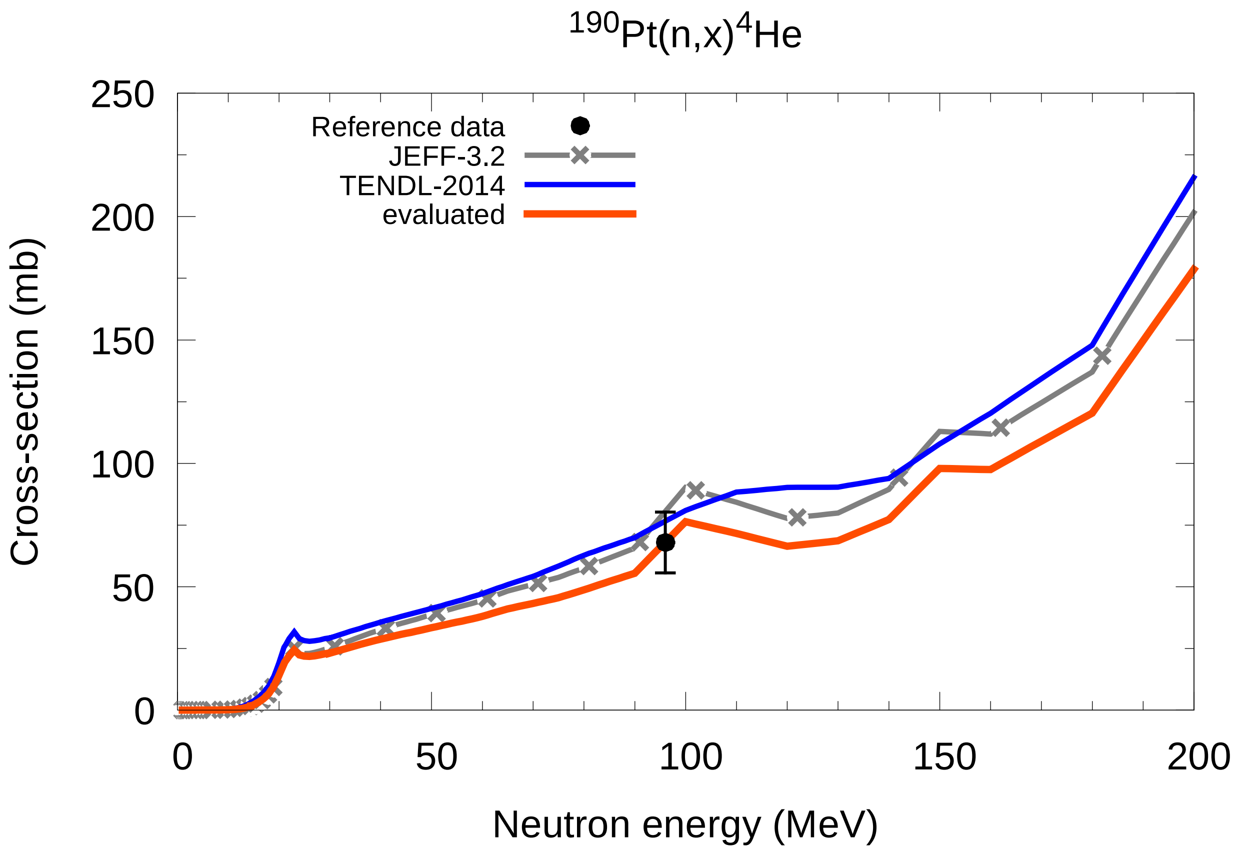
$^{192}Os(n,x)^{4}He$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200



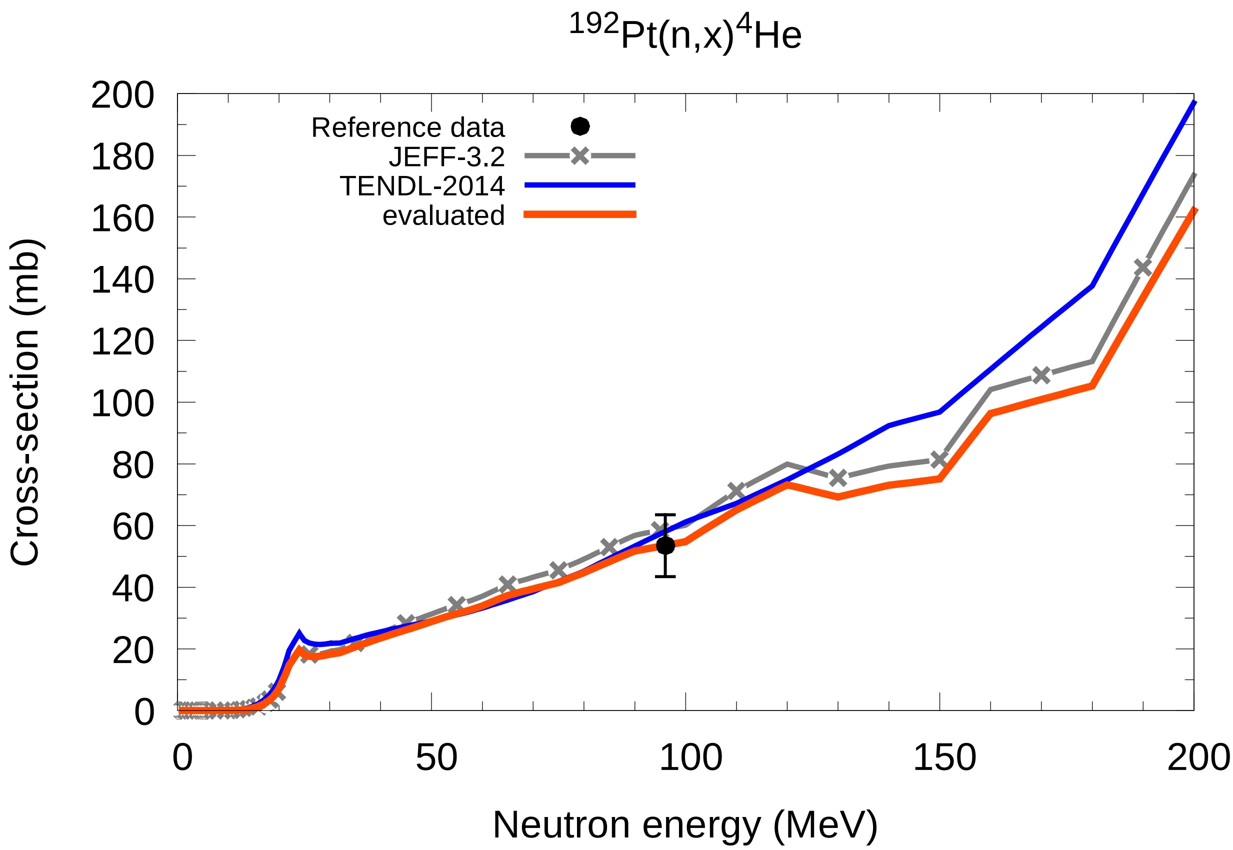
$^{191}Ir(n,x)^{4}He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200



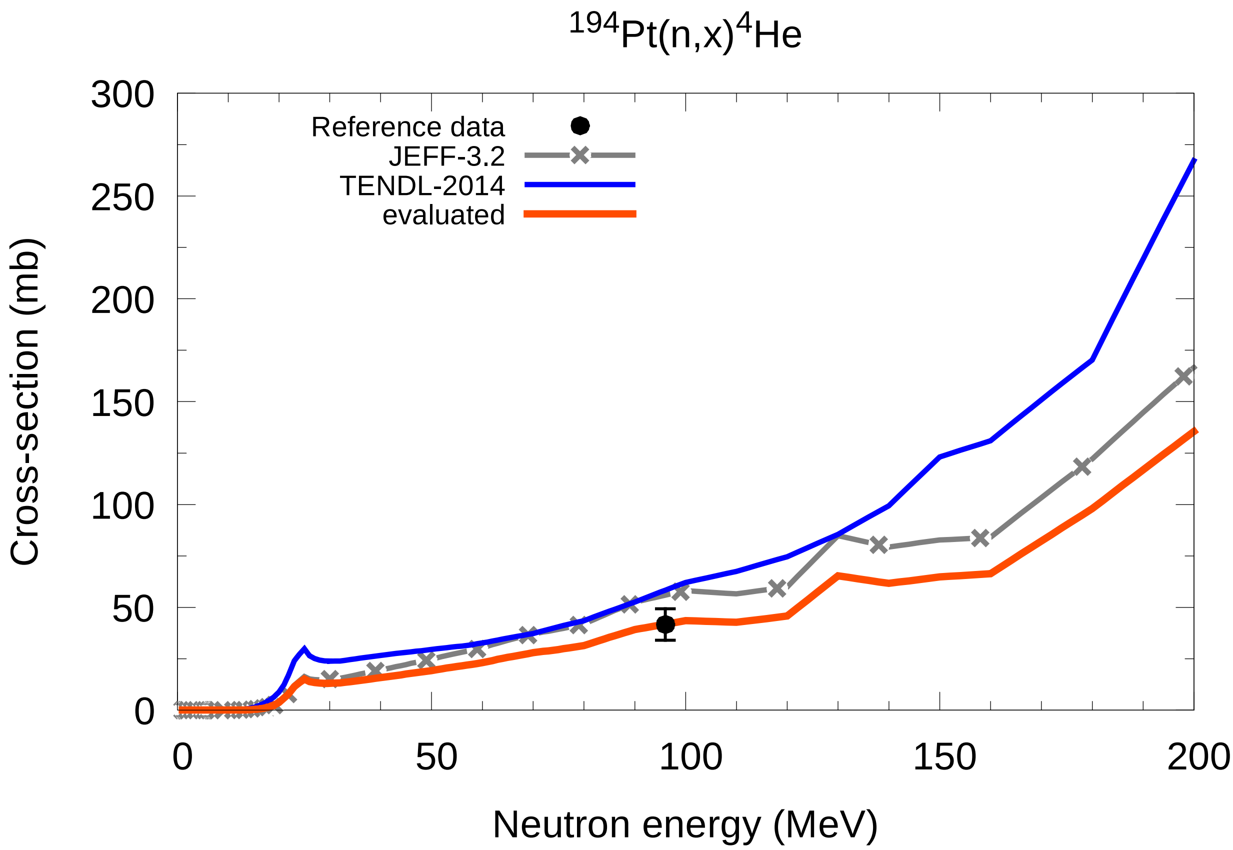
193Ir(n,x)4He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



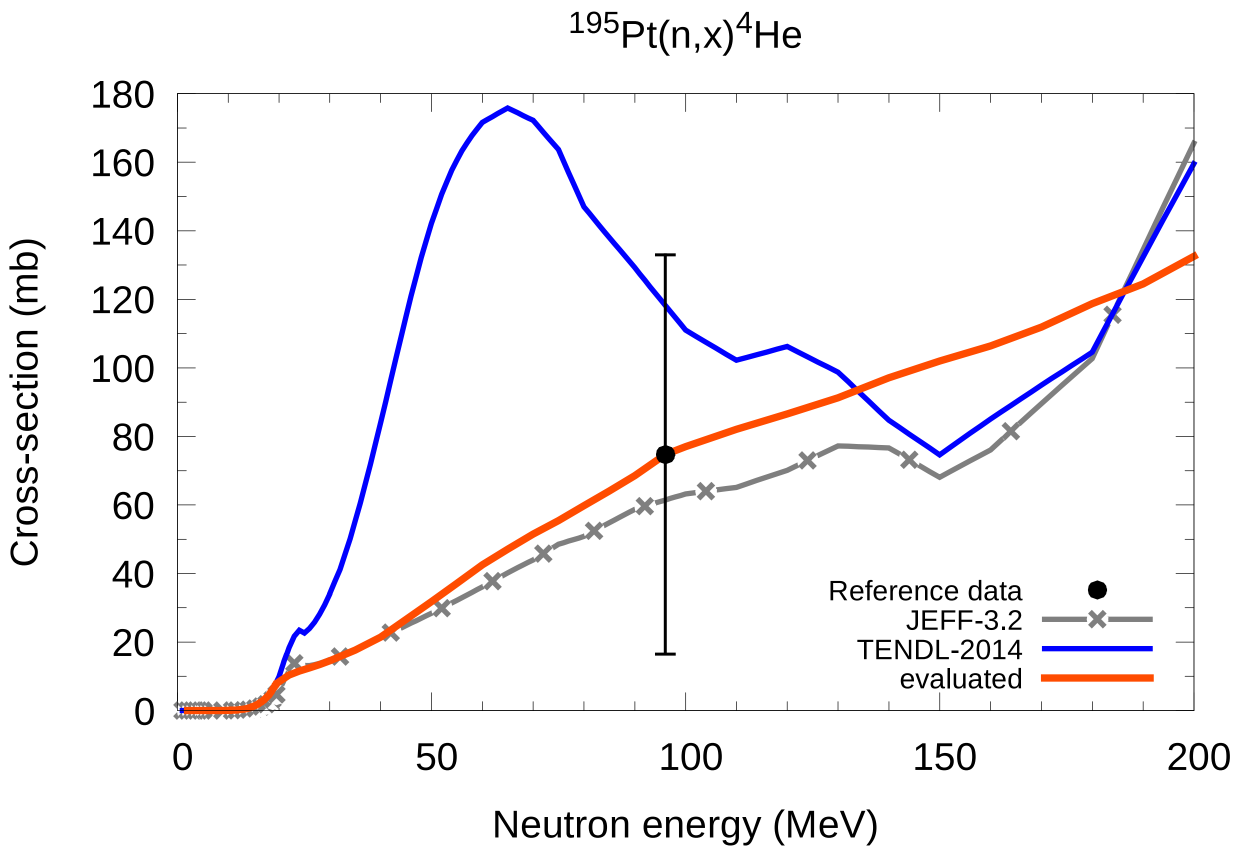
190Pt(n,x)4He
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250

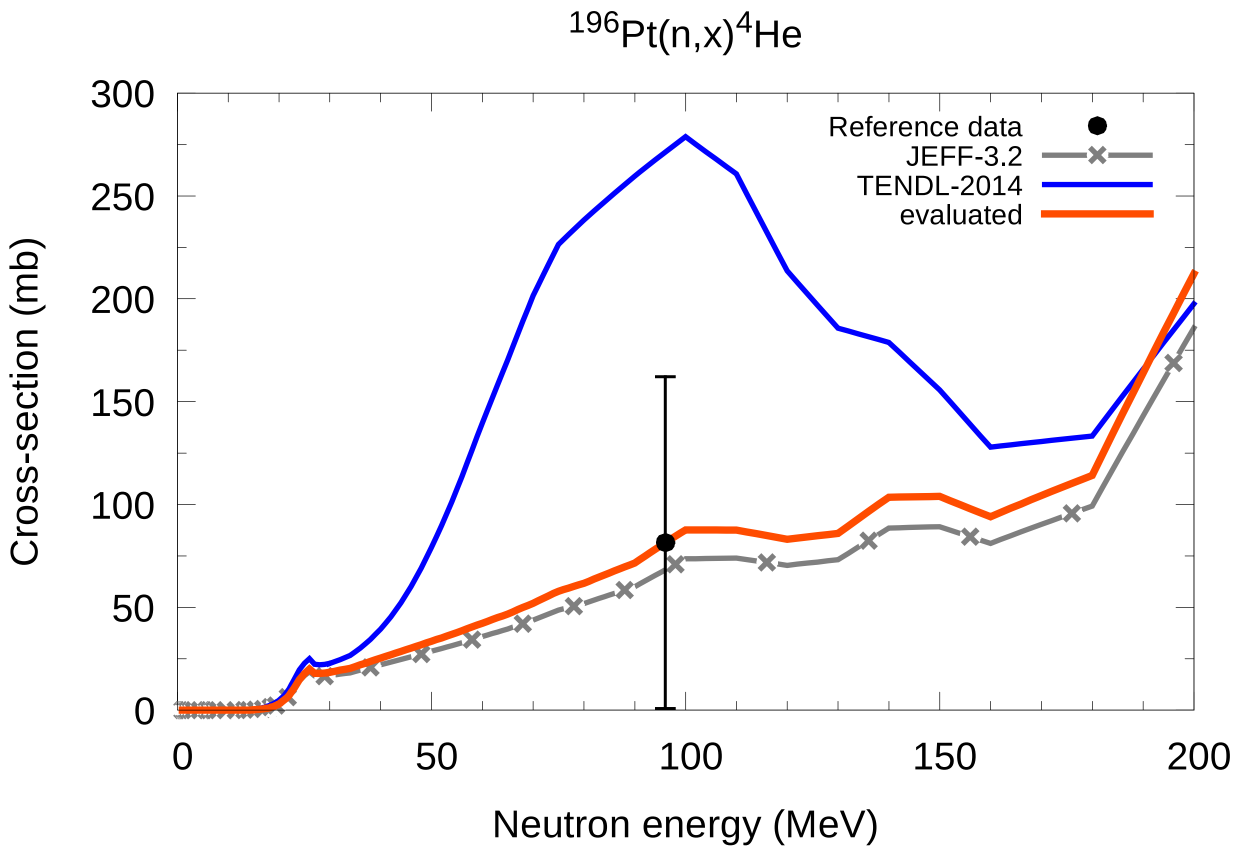


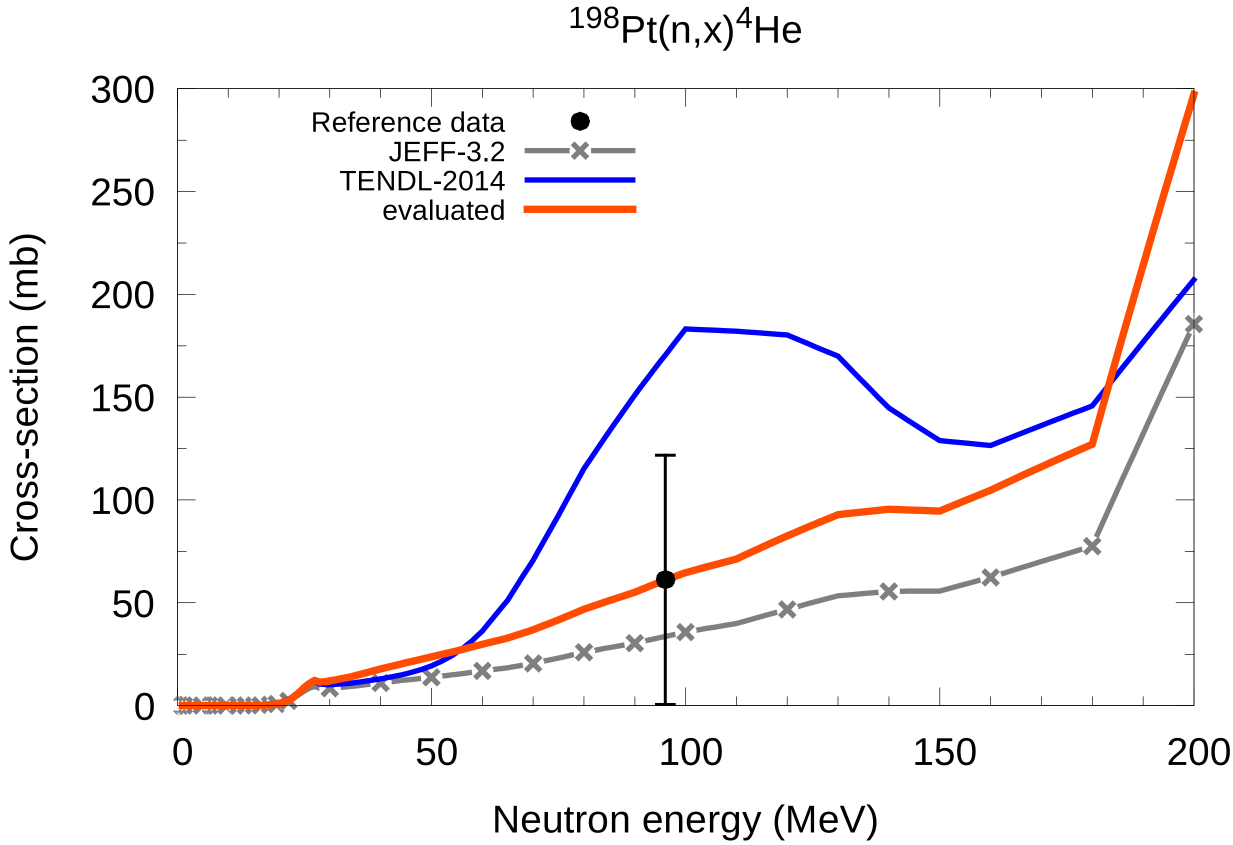
$^{192}Pt(n,x)^{4}He$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200
0
50
100
150
200



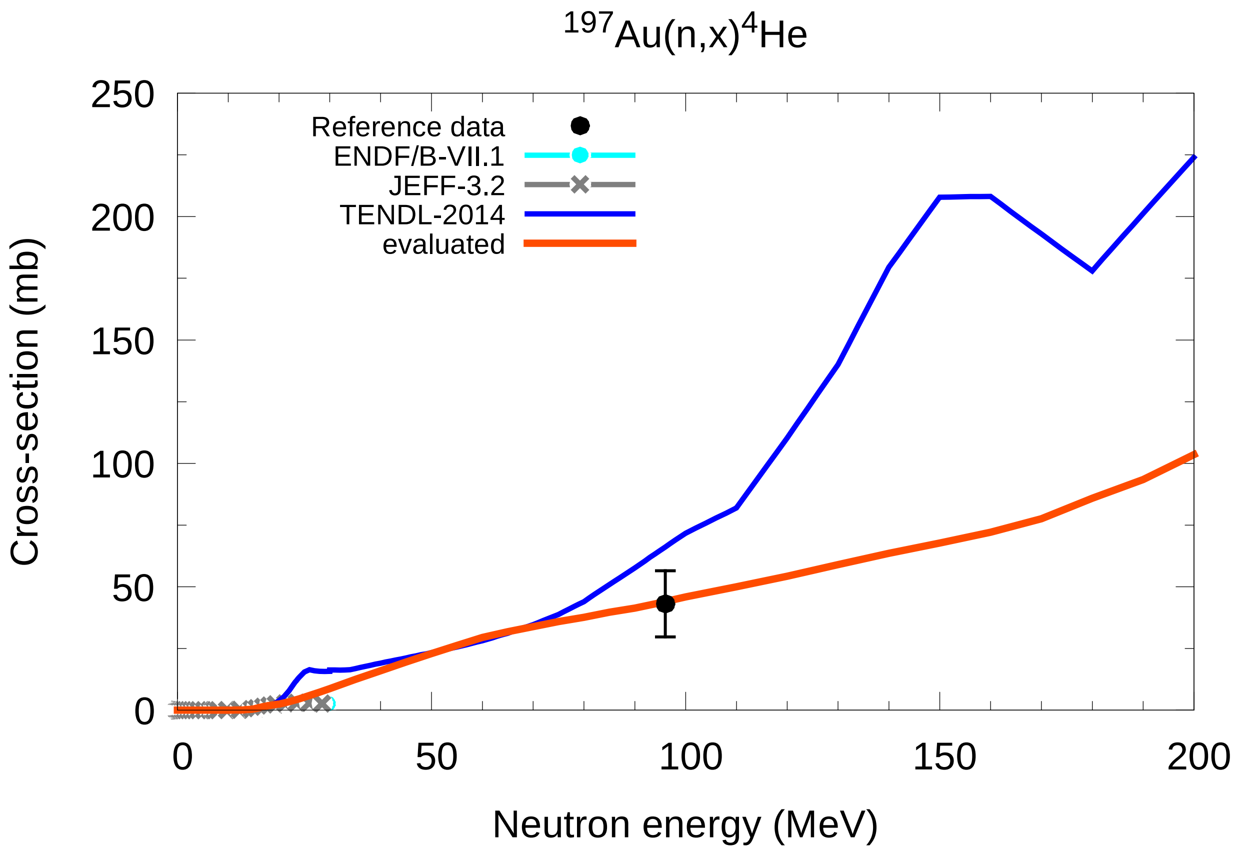
$^{194}Pt(n,x)^{4}He$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
0
50
100
150
200


^{195}Pt(n,x)^{4}He
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
0
50
100
150
200
Reference data
JEFF-3.2
TENDL-2014
evaluated

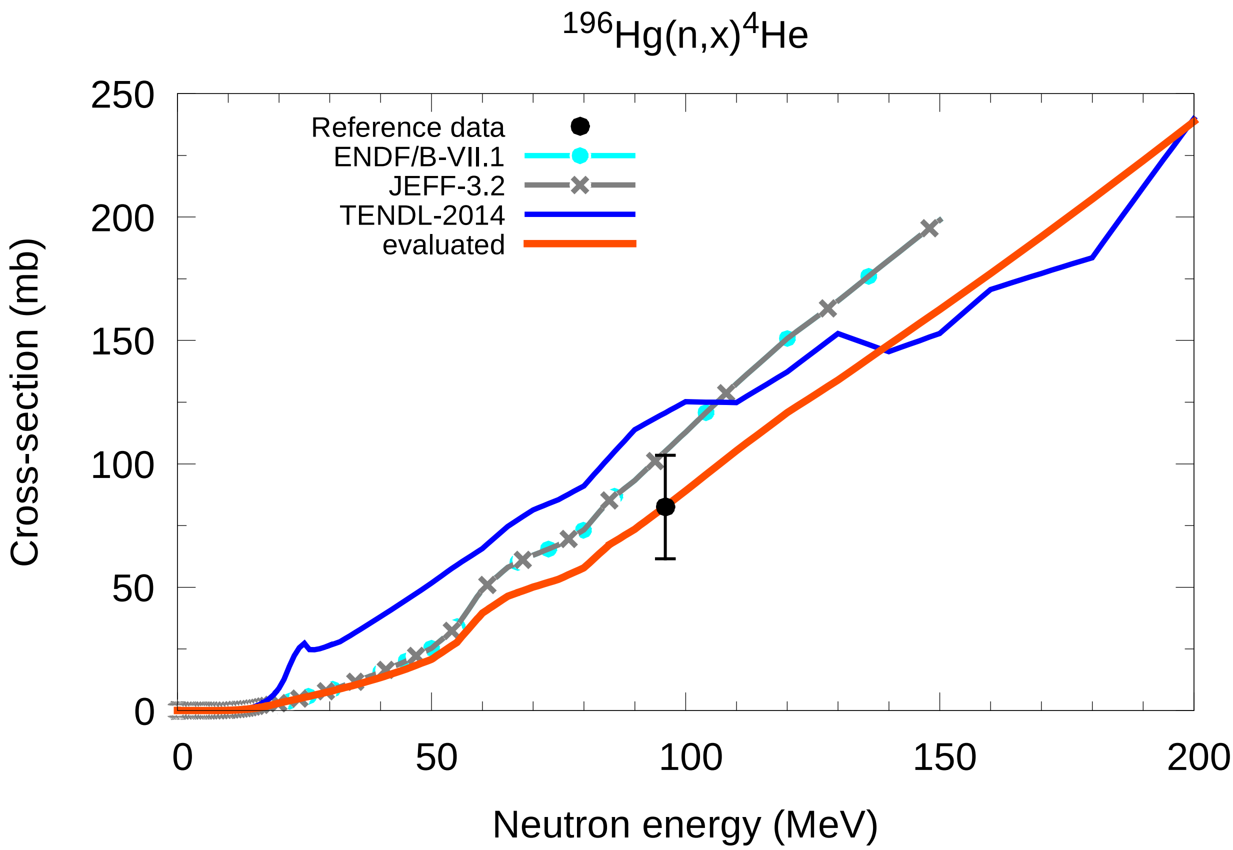

^{196}Pt(n,x)^{4}He
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
0
50
100
150
200
Reference data
JEFF-3.2
TENDL-2014
evaluated



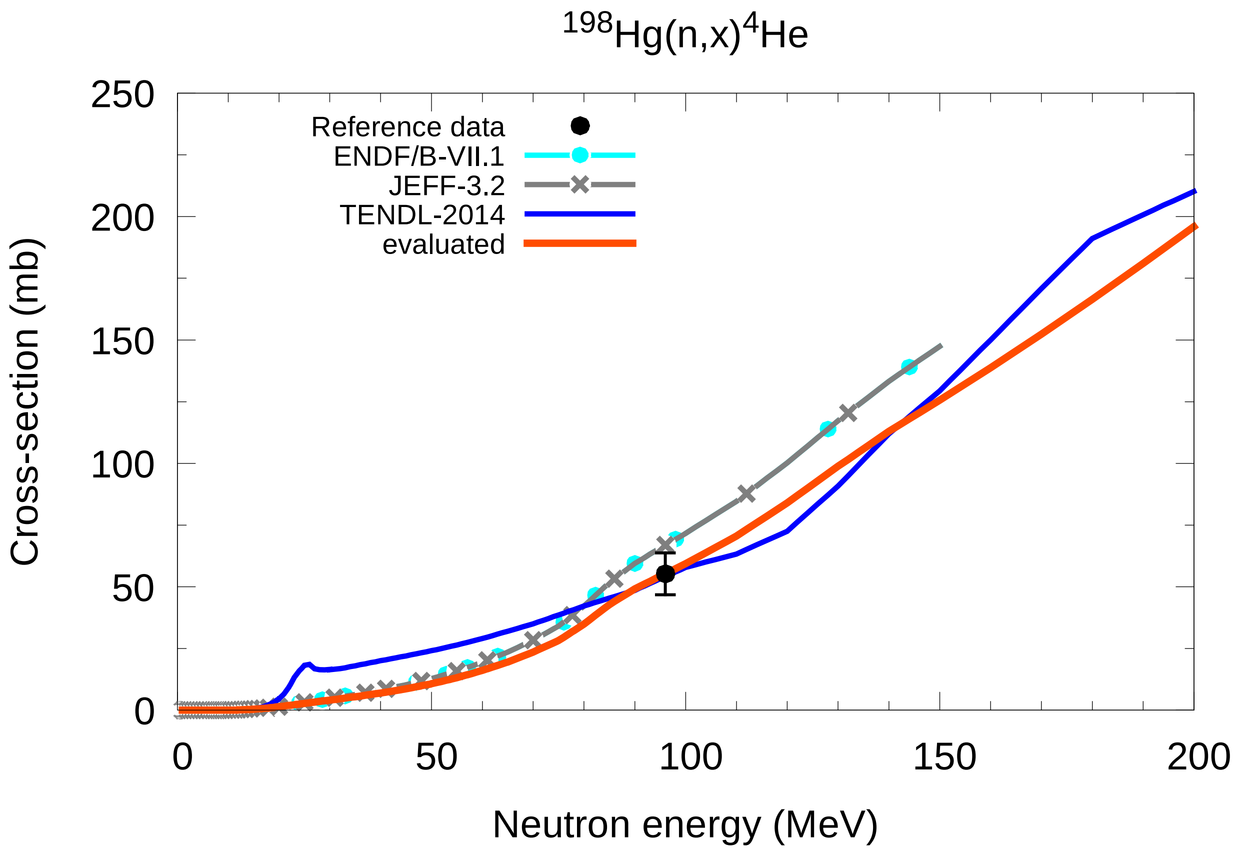
$^{198}Pt(n,x)^4He$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
300
250
200
150
100
50
0
0
50
100
150
200
Neutron energy (MeV)



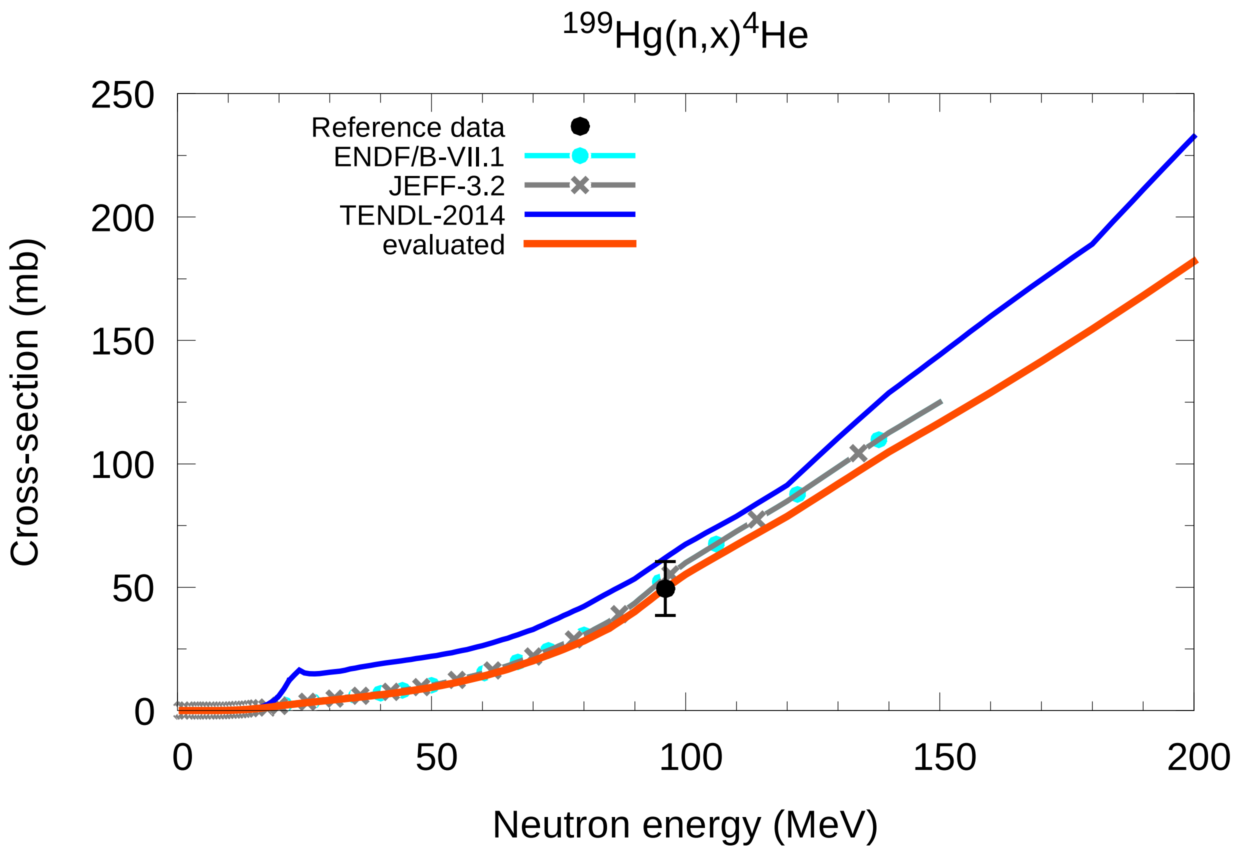
$^{197}Au(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
250
200
150
100
50
0
0
50
100
150
200
Neutron energy (MeV)



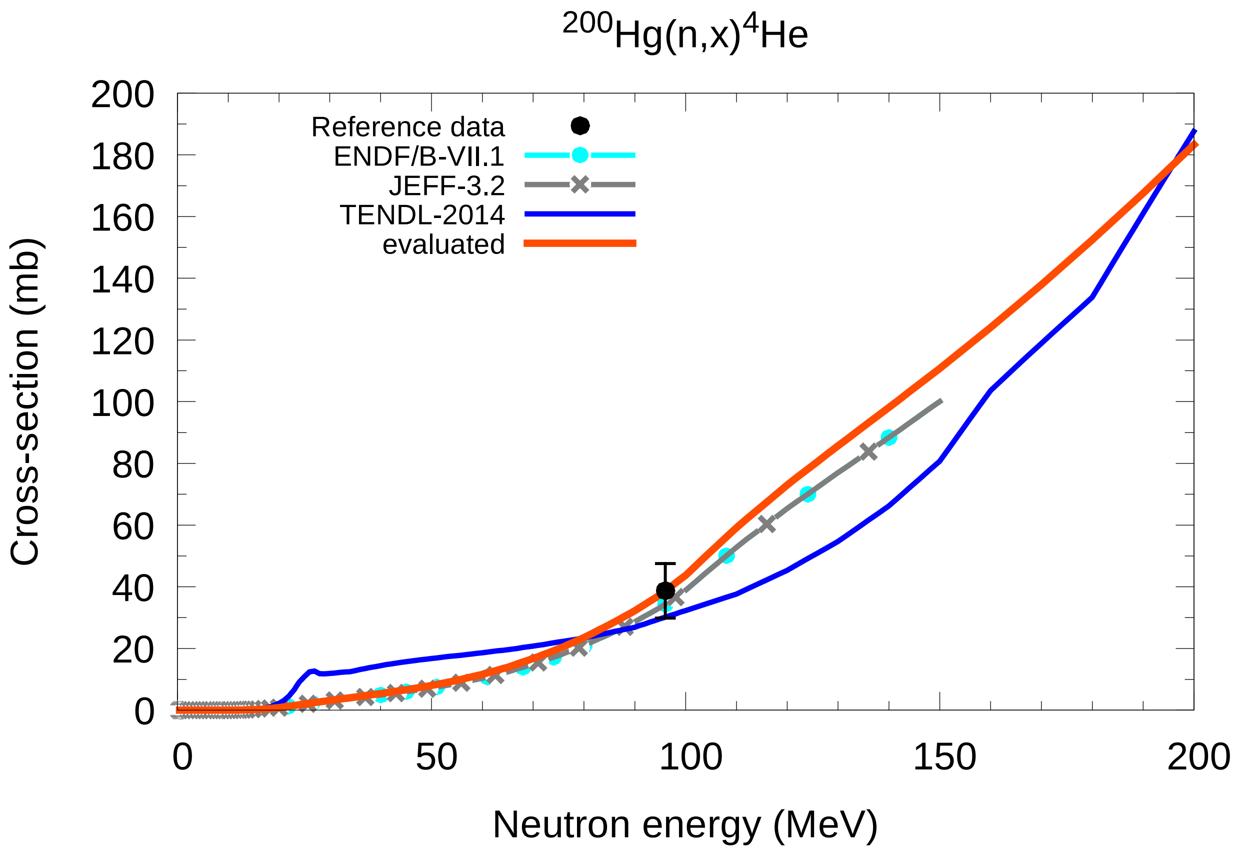
^{196}Hg(n,x)^{4}He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



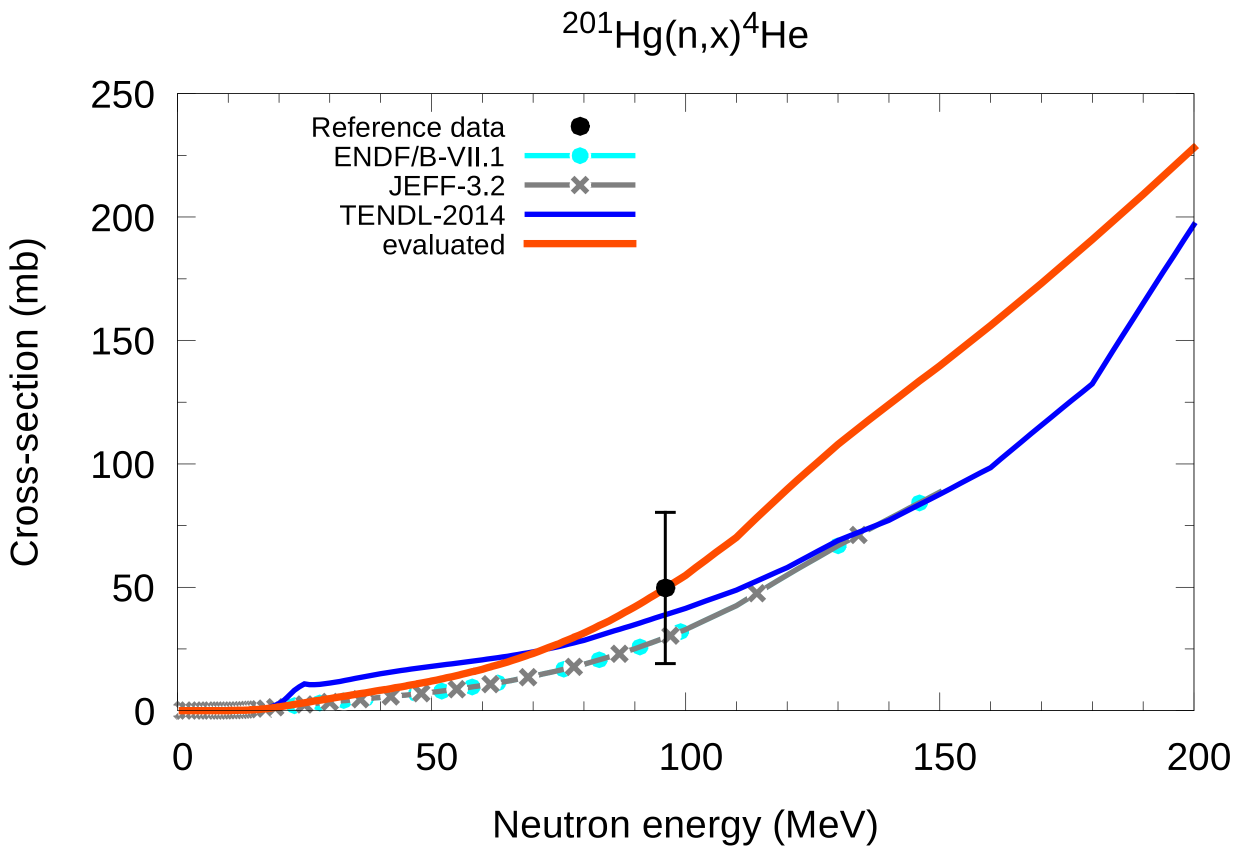
^{198}Hg(n,x)^{4}He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



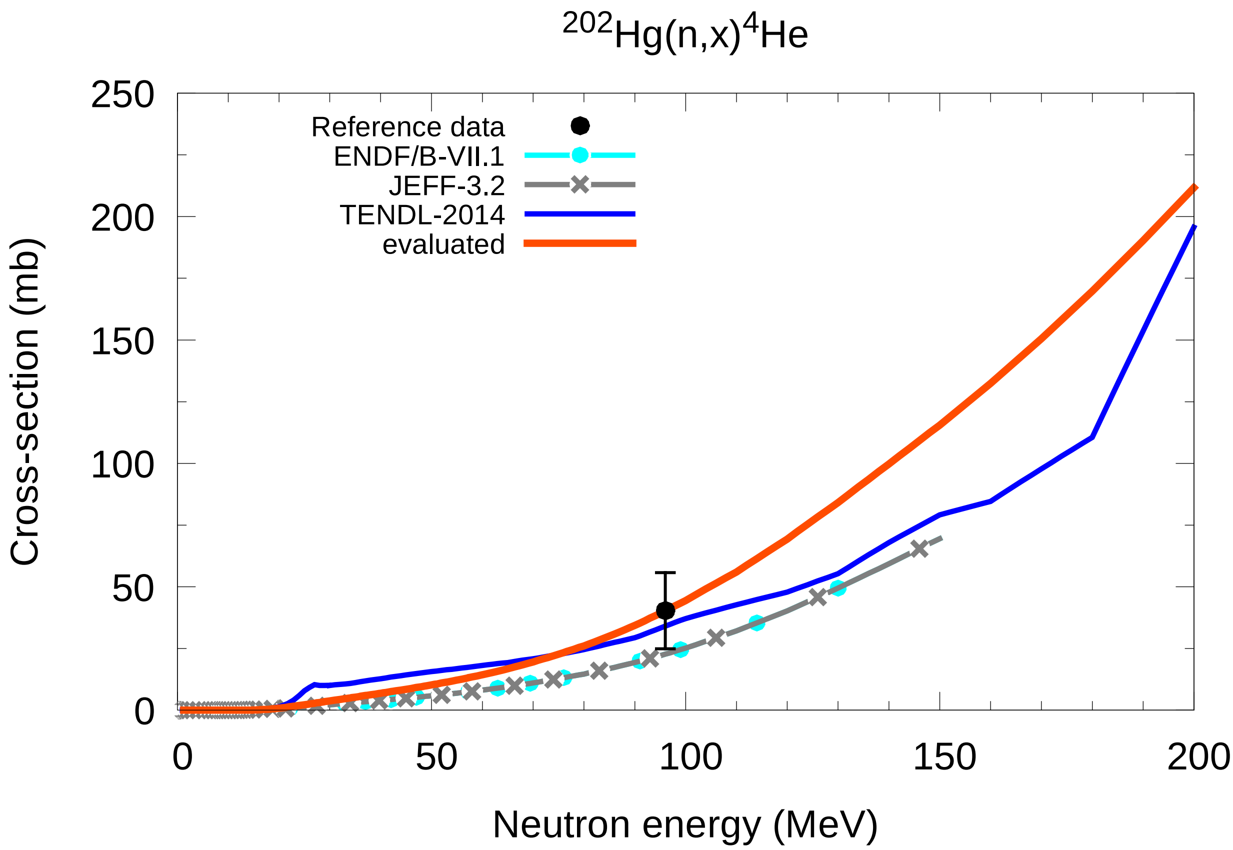
^{199}Hg(n,x)^{4}He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



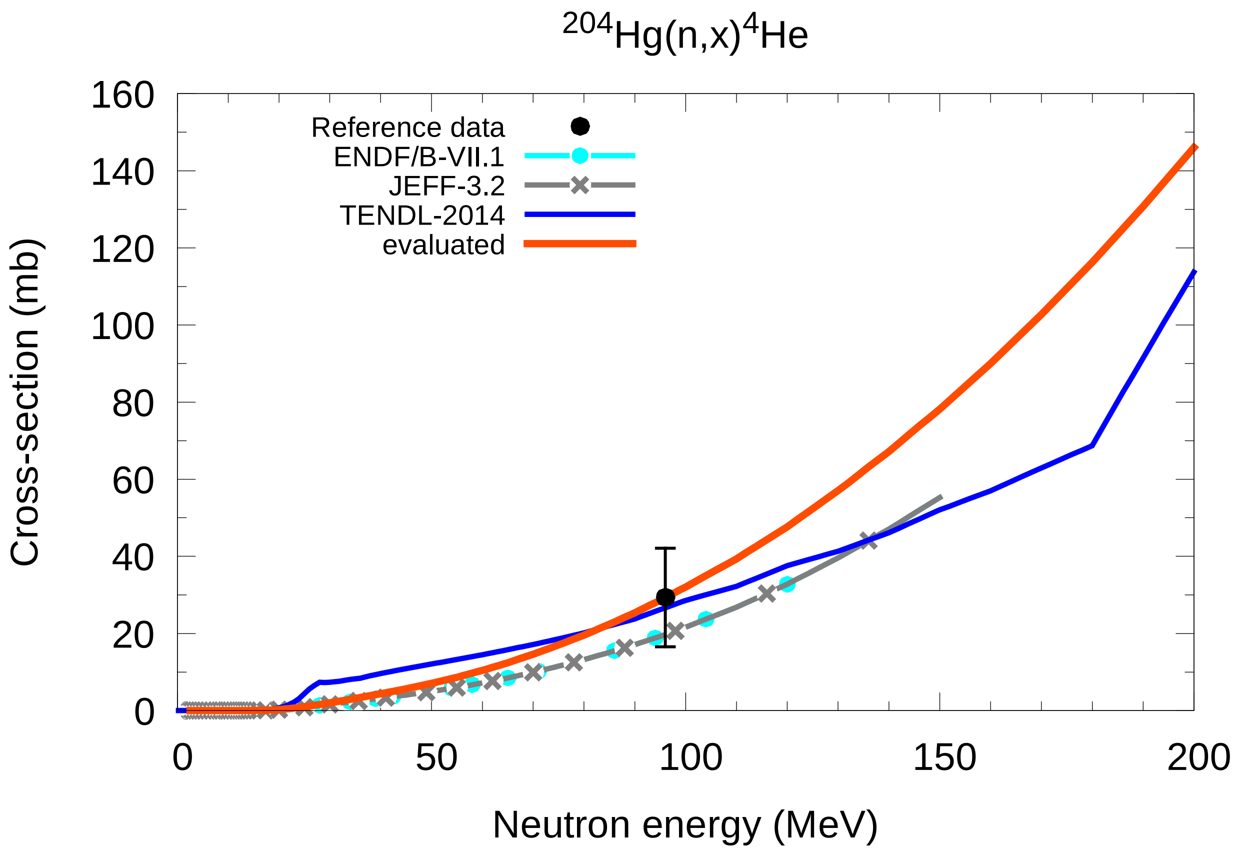
^{200}Hg(n,x)^{4}He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
180
200
50
150



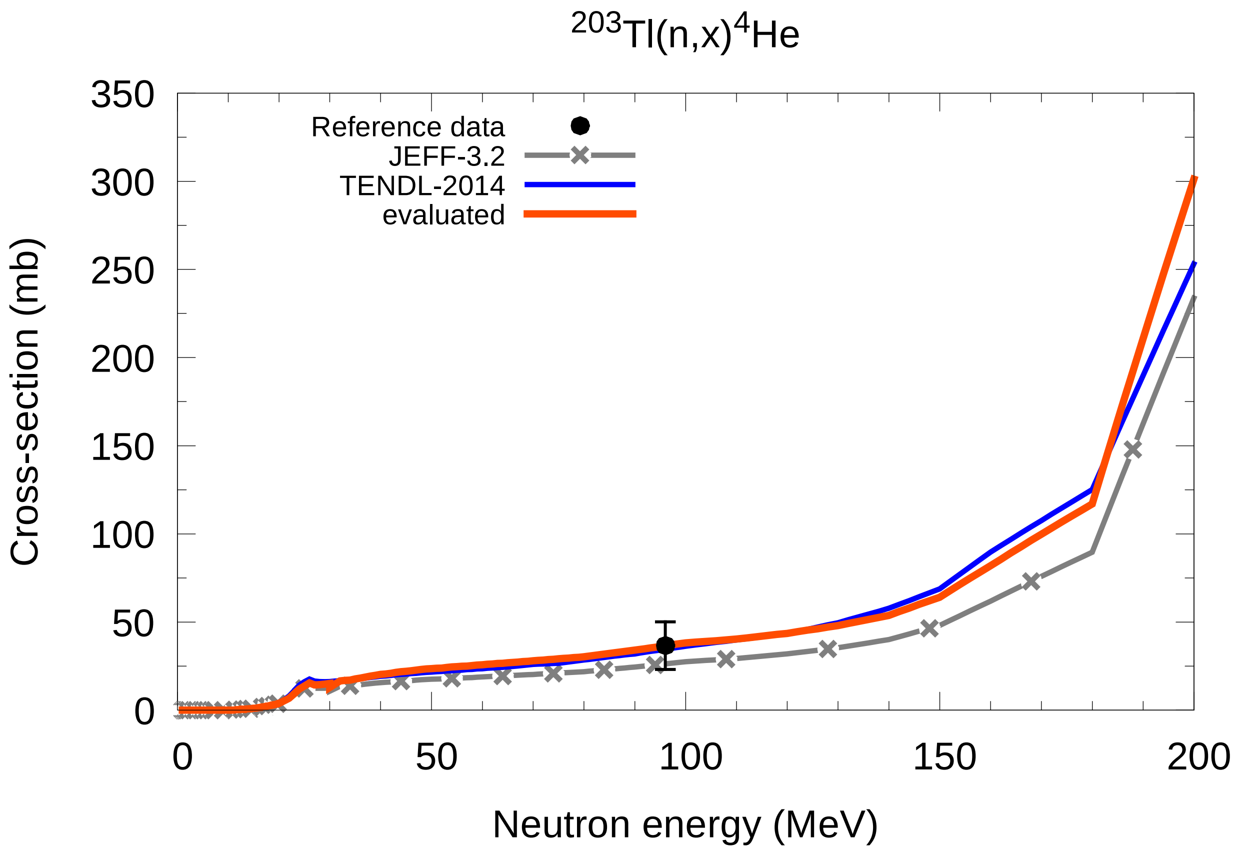
201Hg(n,x)4He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



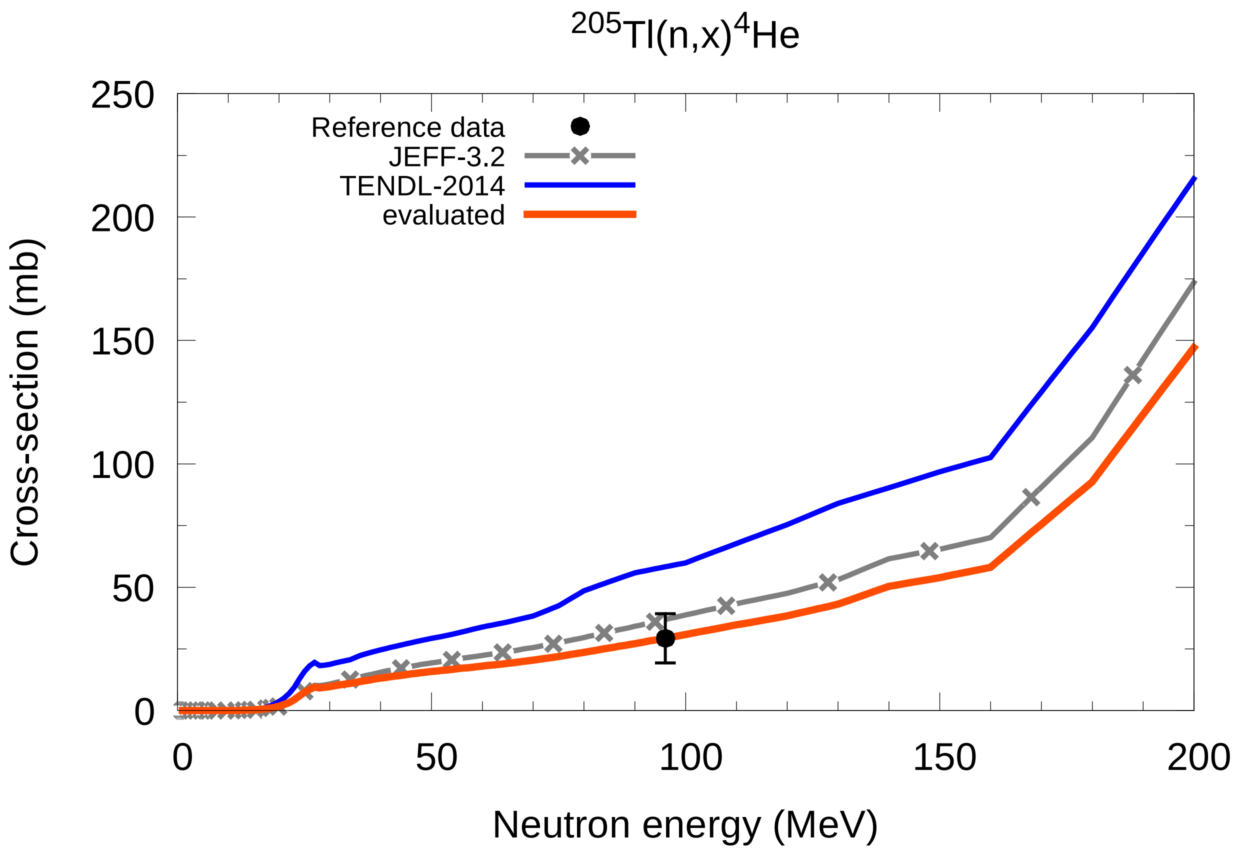
202Hg(n,x)4He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



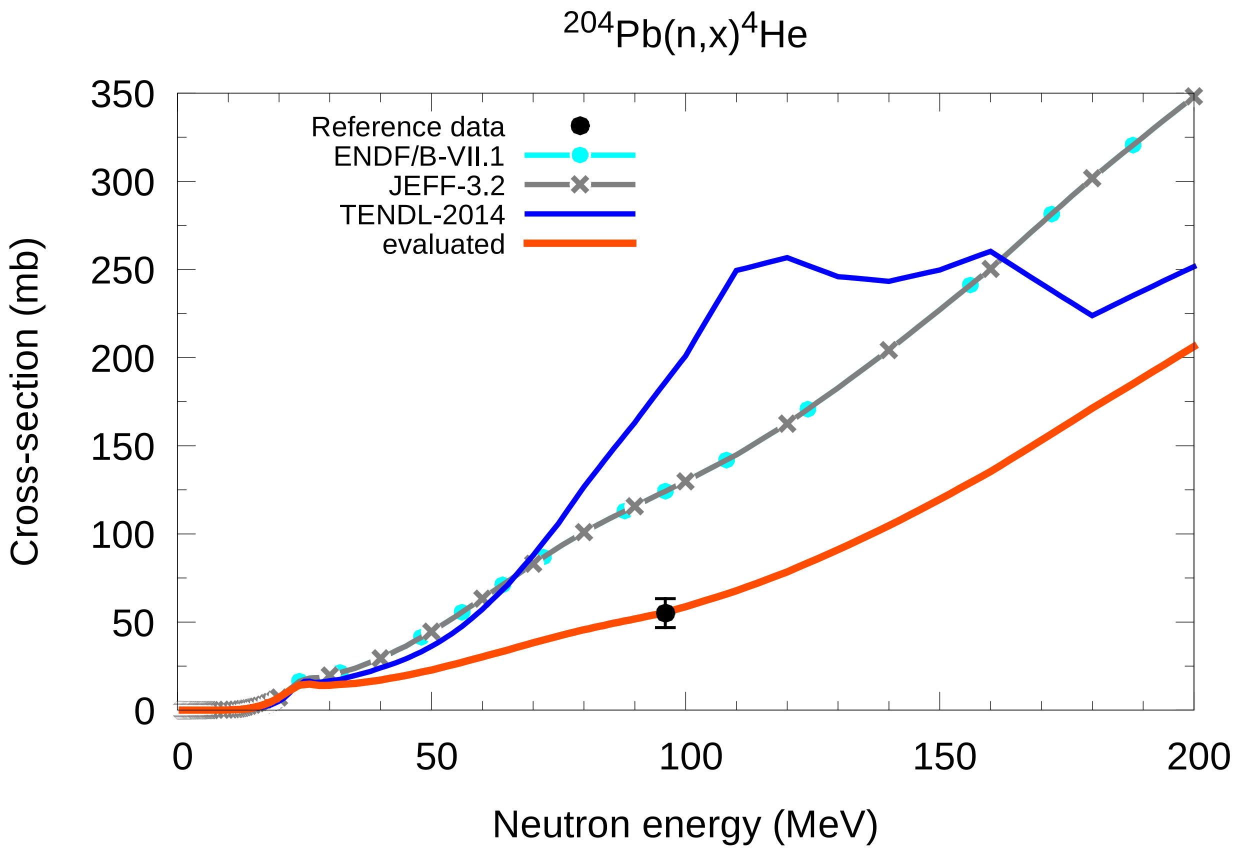
$^{204}Hg(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
20
40
60
80
100
120
140
160
0
50
100
150
200



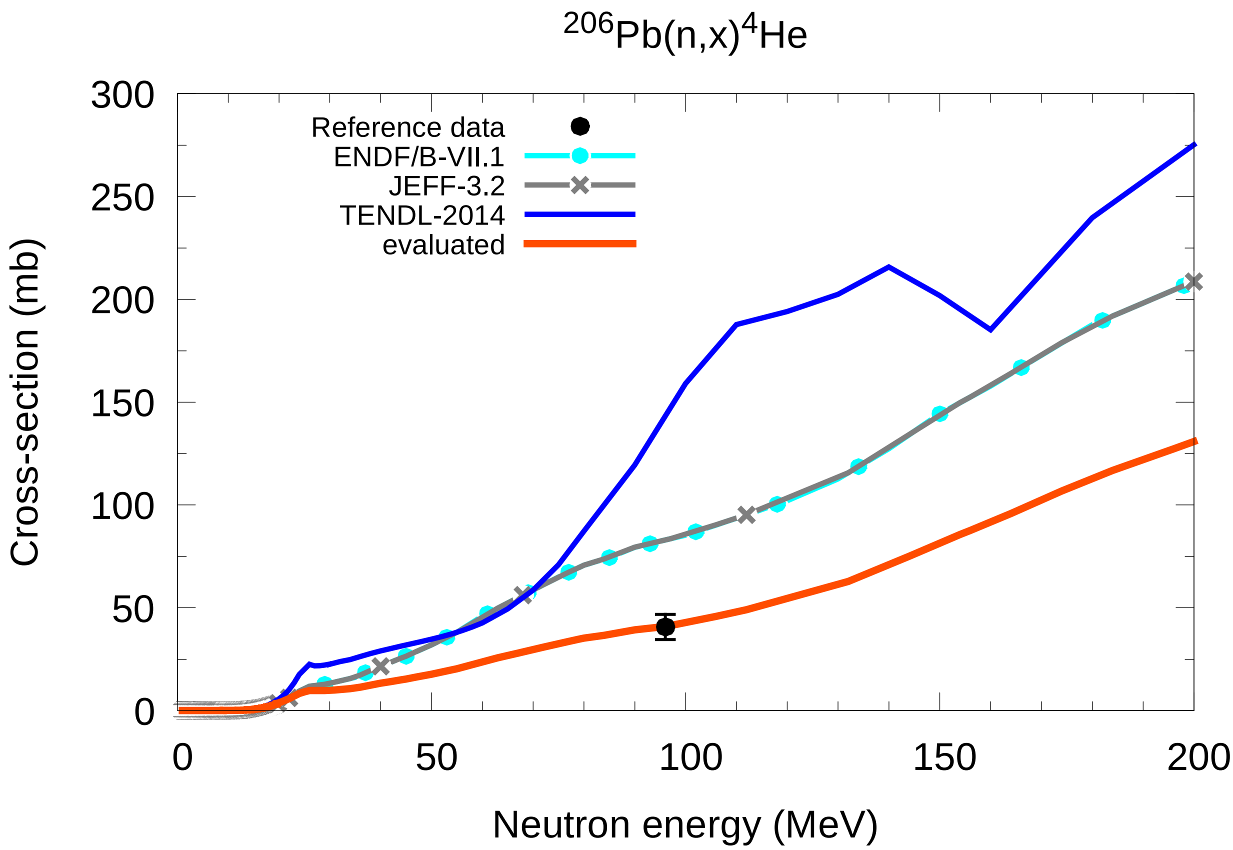
$^{203}Tl(n,x)^4He$
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350
0
50
100
150
200



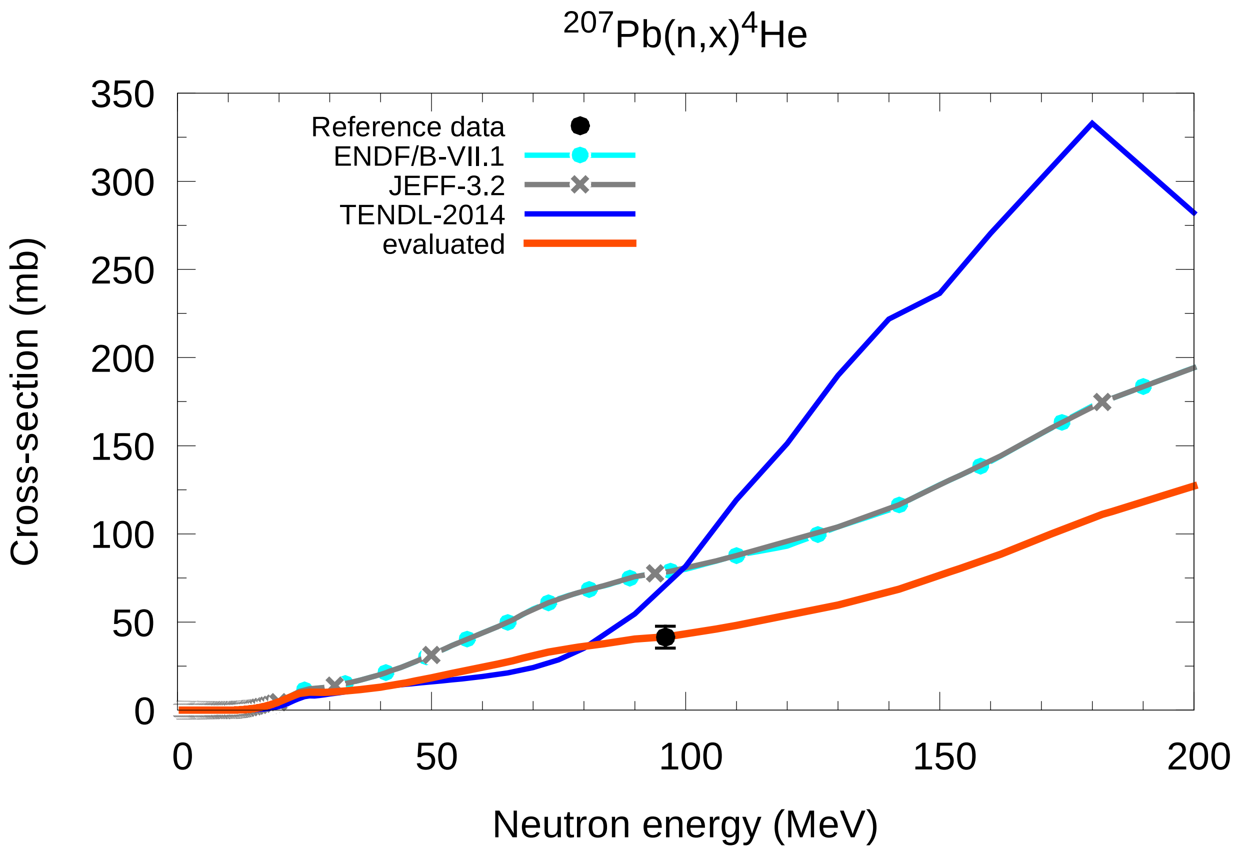
^{205}Tl(n,x)^{4}He
Reference data
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250



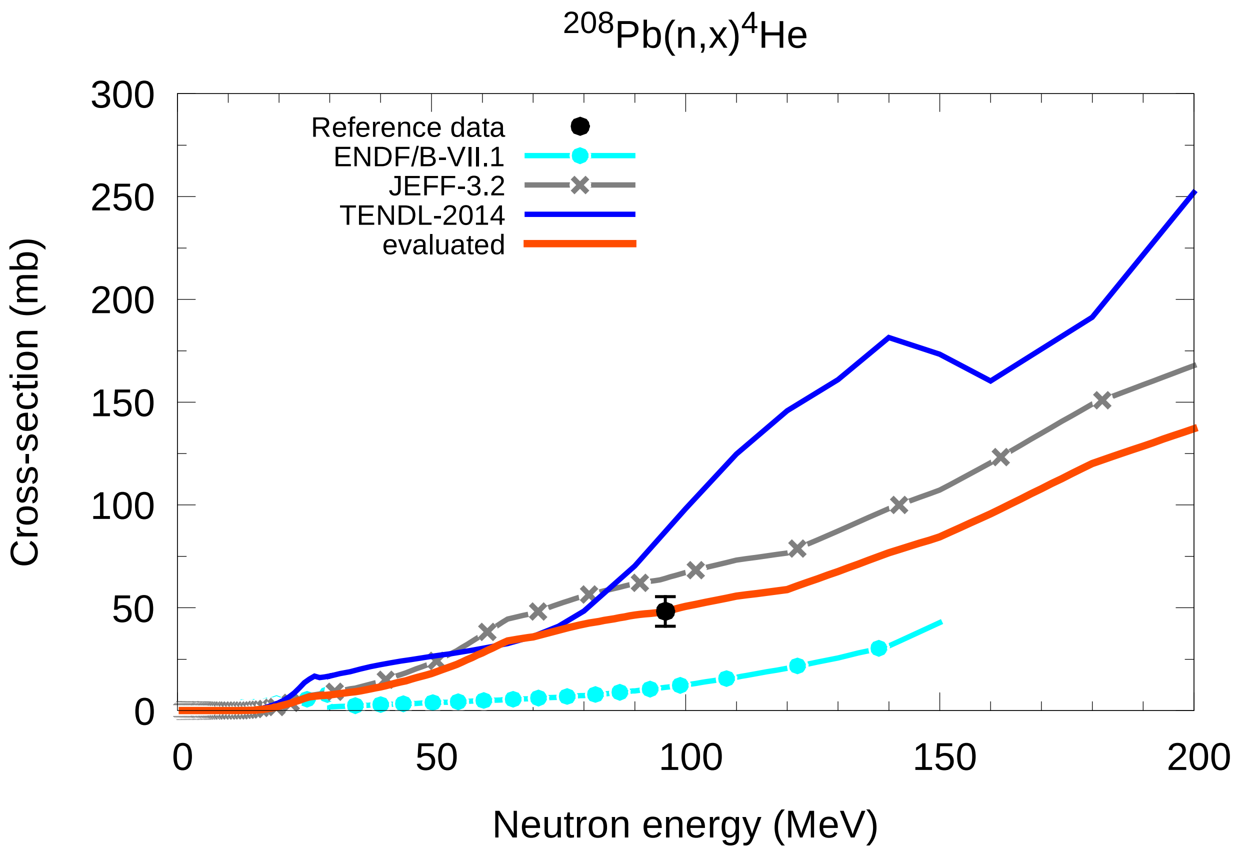
^{204}Pb(n,x)^{4}He
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



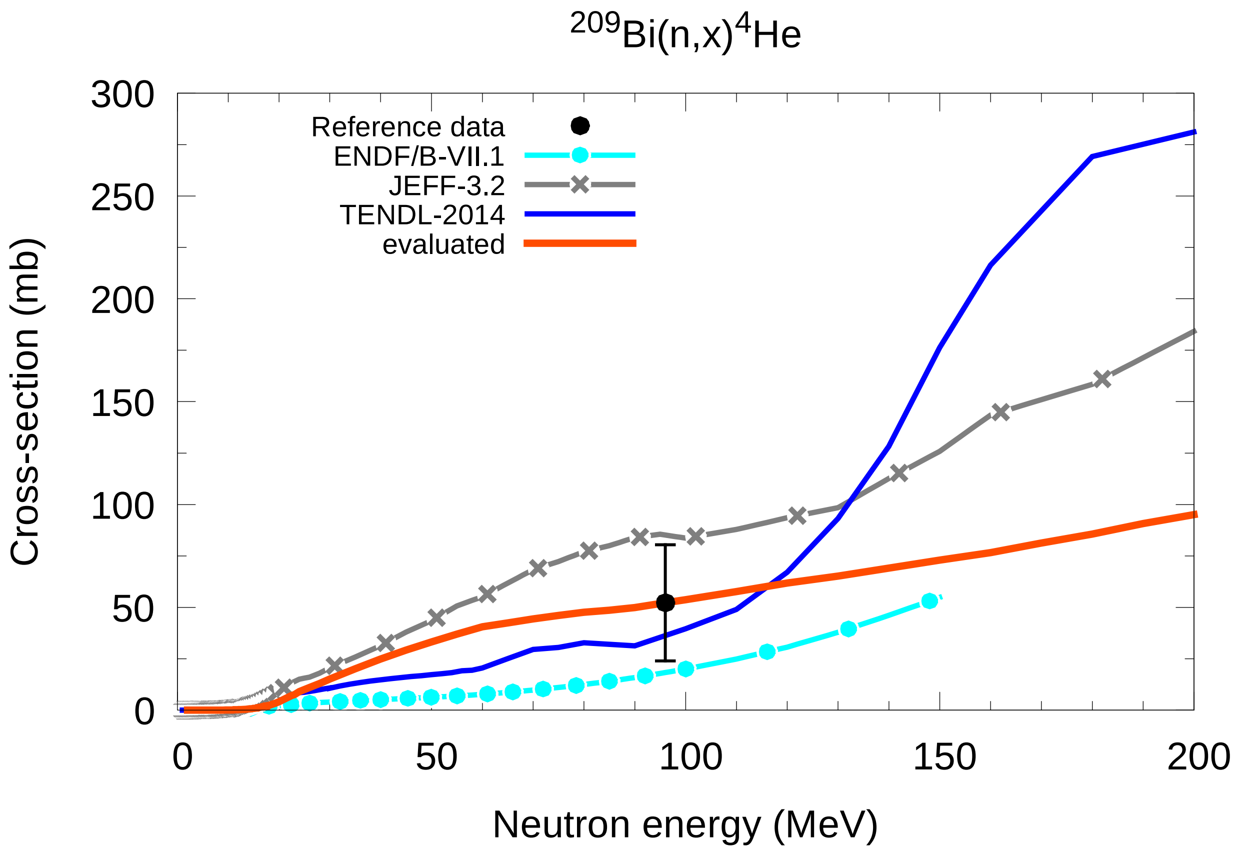
$^{206}Pb(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300



$^{207}Pb(n,x)^4He$
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
Cross-section (mb)
Neutron energy (MeV)
0
50
100
150
200
250
300
350



$^{208}Pb(n,x)^4He$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300



$^{209}Bi(n,x)^4He$
Cross-section (mb)
Neutron energy (MeV)
Reference data
ENDF/B-VII.1
JEFF-3.2
TENDL-2014
evaluated
0
50
100
150
200
250
300

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