

EXFOR Uploading System

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Workshop: EXFOR Compilation
IAEA-NDS, Vienna, August 30 – September 3, 2010

EXFOR Uploading System

Main Purpose:



Comparison of an external EXFOR file with central EXFOR database

What you can do using the system:

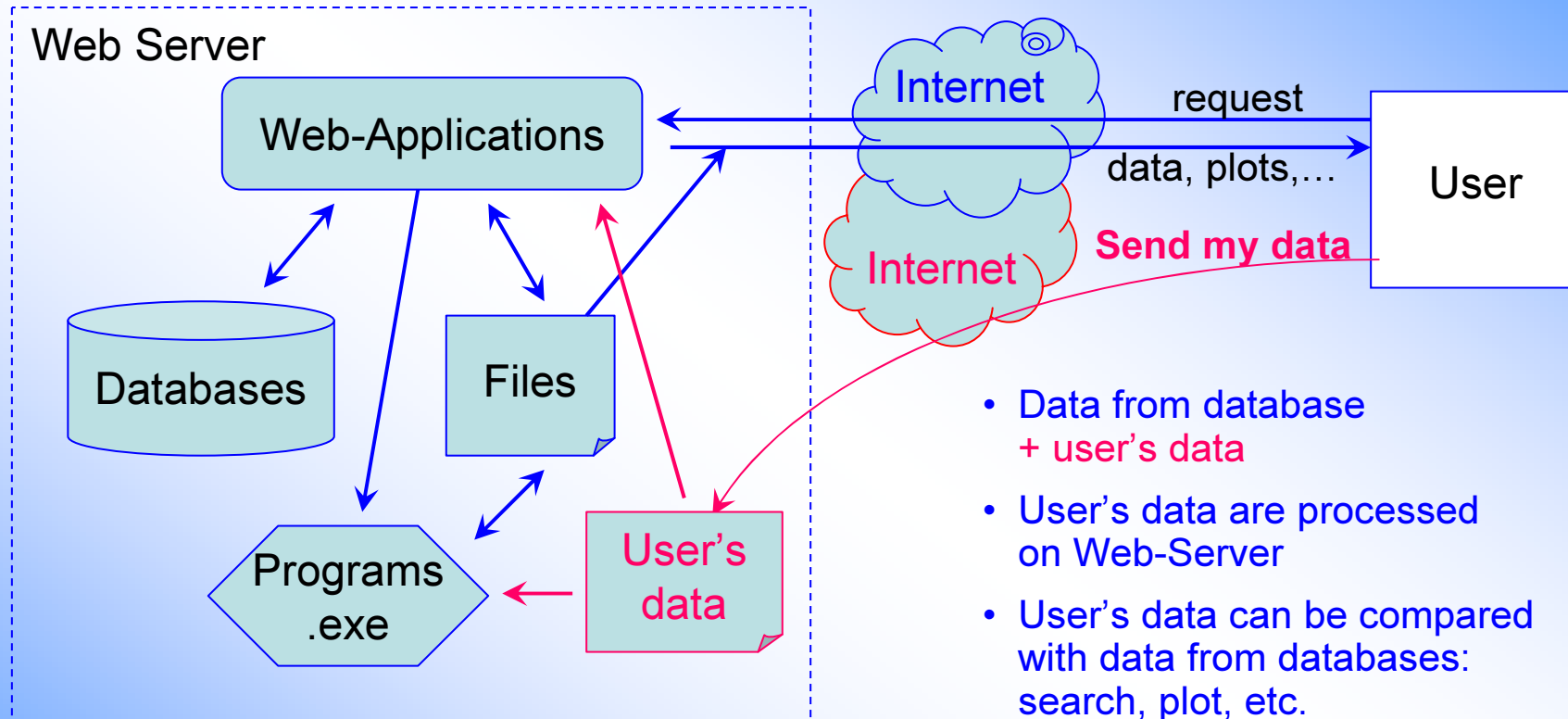
1. Check Alteration flags in your file vs. EXFOR database
2. Search similar data in the database: by Reference, Reaction, Author
3. Plot your data with the data from EXFOR and/or ENDF database
4. Display from your EXFOR file: Entries, Reactions, $X4\pm$, Covariance
5. Run EXFOR Utilities: CHEX, ORDER, XTRACT, X4TOC4

How to use it ?

Remotely via Internet using any Web-Browser

EXFOR Uploading System

Concept of “data uploading”



- Data from database + user's data
- User's data are processed on Web-Server
- User's data can be compared with data from databases: search, plot, etc.

Advantages:

- You do not need software installation
- We can implement specific operations

Disadvantages:

- You need Internet

Potential problems and limitations:

- Speed, resources of NDS computer system

EXFOR Uploading System

Current Internet Address

<http://nds121.iaea.org/exfor2/x4up1.htm>

X4Up: tools for EXFOR compilers - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://nds121.iaea.org/exfor2/x4up1.htm

Most Visited Customize Links Free Hotmail RealPlayer Windows Marketplace Windows Media Windows

3-27... http://...x4.txt intl Ug_app... EXFOR/CSI... X4/Servlet: ... X4Up: tools ... X4Up: ...

Experimental Nuclear Reaction Data (EXFOR)

Uploading your EXFOR file for data comparison

by V.Zerkin, IAEA-NDS, February 2009 - August 2010

Submit Reset Submit in new Window

Your name (optional):

Your EXFOR File: Browse...

Your EXFOR text. Examples: [text](#); web-links: [txt](#) [x4](#) [zip](#) [CGI](#); covariances: [1](#) [2](#) [3](#)

```

ENTRY          32619      950627
SUBENT         32619001   950627
BIB            10         35
TITLE          Fast neutron excitation curve of Al, Ti, V, In and
                I nuclides
AUTHOR         (LU HANLIN, WANG DAHAI, CUI YUNFENG, HUANG JIANZHOU,
                ZHAO WENRONG, FAN PEIGUO, XIA YIJUN, CHEN BAOLIN,
                MA HONGCHANG, LI JIZHOU)
REFERENCE     (J. CST. 9 (2) 113-1505)
                Graaff.
                energy cyclotron.
                energy 1.35 and 1.80 MeV deuteron
                Graaff bombarding a D-Ti target
                5.0 MeV neutrons.
                3.7 and 5.03 MeV from the cyclo-
                tron bombarding the solid Ti-D target (thickness=2.04
  
```

Useful links:
[IAEA-NDS](#)
[NRDC](#)
[EXFOR-Web](#)
[EXFOR-Map](#)
[Web-ZVView](#)

Web and Database Programming: Viktor Zerkin, NDS, International Atomic Energy Agency (V.Zerkin@iaea.org)

Find: C1479 Next Previous Highlight all Match case

Done

Use examples:
[button] → [Submit]

Input:

1. Upload EXFOR file from you PC
2. EXFOR text in the Form
3. Web-link to EXFOR file in the Form (link to text, zip, CGI-script), e.g. <http://nds121.iaea.org/ndsx4/trans/trans.c098>

EXFOR-uploading system

by V.Zerkin, IAEA-NDS, February 2009 - August 2010

Request #279

Uploading...

Reading remote file: <http://nds121.iaea.org/exfor2/x4guide/x4formats/d4080.txt>

Remote file: <http://nds121.iaea.org/exfor2/x4guide/x4formats/d4080.txt>

EXFOR file copy: XX4up00279.txt size:30Kb (29808 bytes)

...ENTRY:1 SUBENT:7 Lines:368

Simple syntax checking...

☑ Open/Close output from checking program... ...finished OK.

See: [\[your EXFOR File\]](#) [X4±]

See: [\[working EXFOR File\]](#) [X4±]

☑ Run external utilities

EXFOR Entries in your file:

Your EXFOR file							EXFOR-database	
Alt	Entry	Date	X4±	Nick	Reference1	Author1	Entry	Entries with Reference
C	D4080	20100614	x4±	X0001	C,91JUELIC,,529,1991	F. Tarkanyi	D4080	D4001

Search in EXFOR database together with uploaded file

#	Weak-search: by target, reaction, web-quantity	Strong-search: by full reaction-code	Datasets: list, display and search similar data of 1-st author
1	Ni-0(p,x),,CS	28-NI-0(P,X)28-NI-57,,SIG	1) C D4080002 1991 F.Tarkanyi+ pt:67 [Reac+A]= D4002 ; D4062 ; D4083 ; D4106
2	Ti-0(p,x),,CS	22-TI-0(P,X)23-V-48,,SIG	1) C D4080003 1991 F.Tarkanyi+ pt:69 [Reac+A]= D4001 ; D4083 ; D4106
3	Ti-0(he3,x),,CS	22-TI-0(HE3,X)23-V-48,,SIG	1) C D4080004 1991 F.Tarkanyi+ pt:21 [Reac+A]= D4112
4	Ti-0(a,x),,CS	22-TI-0(A,X)24-CR-51,,SIG	1) C D4080005 1991 F.Tarkanyi+ pt:28 [Reac+A]= D4086 ; D4089
5	Cu-0(a,x),,CS	29-CU-0(A,X)31-GA-66,,SIG	1) C D4080006 1991 F.Tarkanyi+ pt:22 [Reac+A]= D4085
6	Cu-0(he3,x),,CS	29-CU-0(HE3,X)31-GA-66,,SIG	1) C D4080007 1991 F.Tarkanyi+ pt:9 [Reac+A]= D4109

EXFOR-uploading system

by V.Zerkin, IAEA-NDS, February 2009 - August 2010

Request #663

Uploading...

Reading remote file: <http://nds121.iaea.org/ndsx4/trans/trans.c098>

Remote file: <http://nds121.iaea.org/ndsx4/trans/trans.c098>

EXFOR file copy: XX4up00663.txt size:374Kb (382563 bytes)

...ENTRY:14 SUBENT:63 Lines:4723

Simple syntax checking...

New checking (under development)

☐ [Open/Close output from checking program...](#)

```
===Checking EXFOR file: [XX4up00663.txt]
```

```
===PASS1=== Begin...
```

- 1) ENTRY:C1004 SUB:1,2,3,4,5,6,7
- 2) ENTRY:C1217 SUB:1,5,23
- 3) ENTRY:C1736 SUB:1,2,3,4,5,6,7
- 4) ENTRY:C1739 SUB:1,2,3,4
- 5) ENTRY:C1746 SUB:1,2,3
- 6) ENTRY:C1755 SUB:1,2,3
- 7) ENTRY:C1769 SUB:1,2,3
- 8) ENTRY:C1771 SUB:1,2,3,4,5,6,7
- 9) ENTRY:C1773 SUB:1,2,3,4,5,6,7,8,9
- 10) ENTRY:C1774 SUB:1,2,3,4
- 11) ENTRY:C1776 SUB:1,2
- 12) ENTRY:C1777 SUB:1,2
- 13) ENTRY:C1778 SUB:1,2
- 14) ENTRY:C1782 SUB:1,2,3,4,5,6,7

```
===End of PASS1===
```

```
===Processed Entries: 14
```

```
===Checking EXFOR file: [XX4up00663.txt]
```

```
===PASS2=== Begin...
```

```
1) ENTRY #C1004
```

```
...Error-1) Line: 52
```

```
MONITOR Normalized to best fit to BE3 data.
```

```
-----  
*****
```

```
...Error-1-msg: Keyword:[MONITOR] required at least one Code (Subent:C1004002)
```

EXFOR-uploading system

by V.Zerkin, IAEA-NDS, February 2009 - August 2010

Request #667

Uploading...

Reading remote file: <http://www.nndc.bnl.gov/exfor/servlet/X4sGetEntry?acc=21017>

Remote file: <http://www.nndc.bnl.gov/exfor/servlet/X4sGetEntry?acc=21017>

EXFOR file copy: XX4up00667.txt size:22Kb (22399 bytes)

...ENTRY:1 SUBENT:16 Lines:556

Simple syntax checking...

⊕ [Open/Close output from checking program...](#) ...finished OK.

See: [\[your EXFOR File\]](#) [X4±]

See: [\[working EXFOR File\]](#) [X4±]

⊕ [Run external utilities](#)

Entries having the same Reference as Reference-1 in your EXFOR file (possible duplication)

EXFOR Entries in your file:

Your EXFOR file						EXFOR-database		
Alt	Entry	Date	X4±	Nick	Reference1	Author1	Entry	Entries with Reference
_	21017	860926	x4±	X0001	J,ZP,250,166,7202	A. Steyerl	21017	20582;20605

Search in EXFOR database together with uploaded file

#	Weak-search: by target, reaction, web-quantity	Strong-search: by full reaction-code	Datasets: list, display and search similar data of 1-st author
1	Al-27(n,tot),,CS	13-AL-27(N,TOT),,SIG	1) 21017002 1972 A.Steyerl+ pt:39 2) 21017003 1972 A.Steyerl+ pt:39 3) 21017004 1972 A.Steyerl+ pt:31
2	Al-27(n,tot),,CS	13-AL-27(N,TOT),,SIG,,,DERIV	1) 21017005 1972 A.Steyerl+ pt:3
3	Al-27(n,g),,CS	13-AL-27(N,G)13-AL-28,,SIG,,,DERIV	1) 21017006 1972 A.Steyerl+ pt:1
4	Al-27(n,el),,CS	13-AL-27(N,EL)13-AL-27,,SIG,,,DERIV	1) 21017007 1972 A.Steyerl+ pt:1
5	Cu-0(n,tot),,CS	29-CU-0(N,TOT),,SIG	1) 21017008 1972 A.Steyerl+ pt:36 2) 21017009 1972 A.Steyerl+ pt:39 3) 21017010 1972 A.Steyerl+ pt:2
6	Cu-0(n,g),,CS	29-CU-0(N,G),,SIG,,,DERIV	1) 21017011 1972 A.Steyerl+ pt:1
7	Cu-0(n,ths),,CS	29-CU-0(N,THS),,SIG	1) 21017012 1972 A.Steyerl+ pt:1

EXFOR-uploading system

by V.Zerkin, IAEA-NDS, February 2009 - August 2010

Request #669

Uploading...

EXFOR file copy: XX4up00669.txt size:6Kb (5249 bytes)

...ENTRY:1 SUBENT:2 Lines:79

Simple syntax checking...

+ [Open/Close output from checking program...](#) ...finished OK.

See: [\[your EXFOR File\]](#) [\[X4±\]](#)

See: [\[working EXFOR File\]](#) [\[X4±\]](#)

+ [Run external utilities](#)

EXFOR Entries in your file:

Your EXFOR file							EXFOR-database	
Alt	Entry	Date	X4±	Nick	Reference1	Author1	Entry	Entries with Reference
_	32619	950627	X4±	X0001	J,CST,9,(2),113,7505	LU HANLIN	32619	30523

Search in EXFOR database together with uploaded file

#	Weak-search: by target, reaction, web-quantity	Strong-search: by full reaction-code	Datasets: list, display and search similar data of 1-st author
1	I-127(n,2n),,CS	53-I-127(N,2N)53-I-126,,SIG	1) 32619009 1975 LU HANLIN+ pt:10

Page generated: 2010/08/27,14:59:40 by X4-Servlet on Project: "Multi-platform EXFOR-CINDA-ENDF", [V.Zerkin](#),

Search data in EXFOR with exactly the same Reaction-code

You come to EXFOR Retrieval System

Request #1486

Results: Reactions: 1 Datasets: 15

Data Selection

Retrieve Selected Unselected All

Output: EXFOR EXFOR+ Bibliography TAB C4 PlotC4

Plot: Quick-plot (cross-sections only) Advanced plot [how-to]

[Advanced data modifications](#)

n	Display	Year	Author-1	Energy range,eV	Points	Reference	Accession#	NSR-Key
1)	53-I-127(N,2N) 53-I-126,,SIG C4: MF3 MT16							
Quantity: [CS] Cross section								
1	<input checked="" type="checkbox"/> uploaded X4 X4±	1975	LU HANLIN+	1.14e7 1.80e7	10	J,CST,9,(2),113,7505	[32619009]	X0001009
2	<input checked="" type="checkbox"/> Info X4 X4+ X4± T4	1989	Lu Han-Lin+	1.14e7 1.80e7	10	R,IMDC(CPR)-16,198908	30523007	
3	<input type="checkbox"/> Info X4 X4+ X4± T4	1985	R.Pepelnik+	1.47e7	1	C,85SANTA,1,211(JA46),85	21976040	
4	<input type="checkbox"/> Info X4 X4+ X4± T4	1979	D.C.Santry	9.25e6 1.96e7	8	C,79KNOX,,(DC-9),197910	10424002	
5	<input type="checkbox"/> Info X4 X4+ X4± T4			1.36e7 1.48e7	5		003	
6	<input type="checkbox"/> Info X4 X4+ X4± T4	1973	J.Araminowicz+	1.46e7	1	P,INR-1464,14,1973	30264038	1973ARZI
7	<input type="checkbox"/> Info X4 X4+ X4± T4	1972	G.N.Maslov+	1.42e7	1	R,YK-9,50,1972	40136017	
8	<input type="checkbox"/> Info X4 X4+ X4± T4	1971	E.Havlik	1.47e7	1	J,APA,34,209,197109	20509002	1971HA53
9	<input type="checkbox"/> Info X4 X4+ X4± T4	1970	W.D.Lu+	1.44e7	1	J,PR/C,1,350,197001	10497034	
10	<input type="checkbox"/> Info X4 X4+ X4± T4	1969	R.C.Barrall+	1.46e7	1	R,AFWL-TR-68-134,196903	10022019	
11	<input type="checkbox"/> Info X4 X4+ X4± T4	1969	R.C.Barrall+	1.48e7	1	J,NP/A,138,387,196912	10031012	1969BA41
12	<input type="checkbox"/> Info X4 X4+ X4± T4	1968	S.M.Qaim+	1.47e7	1	J,JIN,30,2577,1968	31080004	1968QA02
13	<input type="checkbox"/> Info X4 X4+ X4± T4	1962	M.Bormann+	1.32e7 1.80e7	5	J,ZP,166,477,6202	21339010	
14	<input type="checkbox"/> Info X4 X4+ X4± T4	1953	E.B.Paul+	1.45e7	1	J,CJP,31,267,1953	11274085	1956PA26
15	<input type="checkbox"/> Info X4 X4+ X4± T4	1953	H.C.Martin+	9.50e6 1.83e7	7	J,PR,89,1302,5303	12028002	

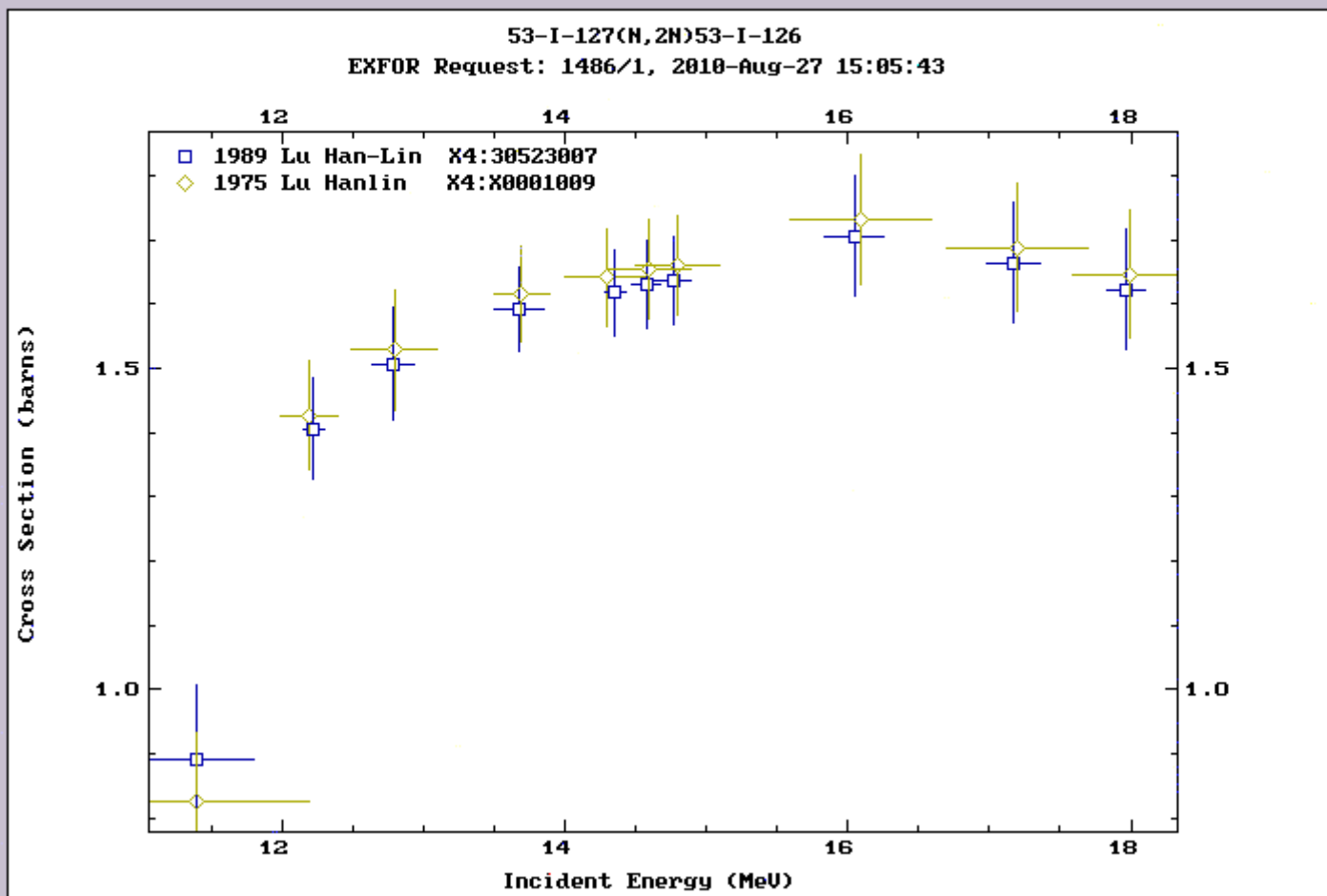
Info = Show Summary (with code explanation, links to dependent data, etc.)

Your data.
All operations are available

Compare you data with data from EXFOR database

Output Data

Format	<u>Data</u> (Size)
EXFOR	Text (11Kb) ZIP (4Kb) Generate: X4±
Bibliography	html (5Kb) BibTeX (2Kb)



ENDF Find and add to the plot evaluated data

1) 53-I-127(N,2N)53-I-126,,SIG

2) Use my data [\[example\]](#)

See: [plotted data](#) (3Kb)

You can go to ENDF

Jump to ENDF Retrieval System

Request #561

ENDF Data Selection (Plot for EXFOR Request #1486)

Retrieve **Plot** Selected Unselected All Do plotting

Plotting options: Quick plot (cross-sections only: σ)

Sorted by: [Reactions] Reorder by: [Libraries] View: basic extended

1) I-127(N,2N)I-126,SIG MT=16 MF=3 NSUB=10

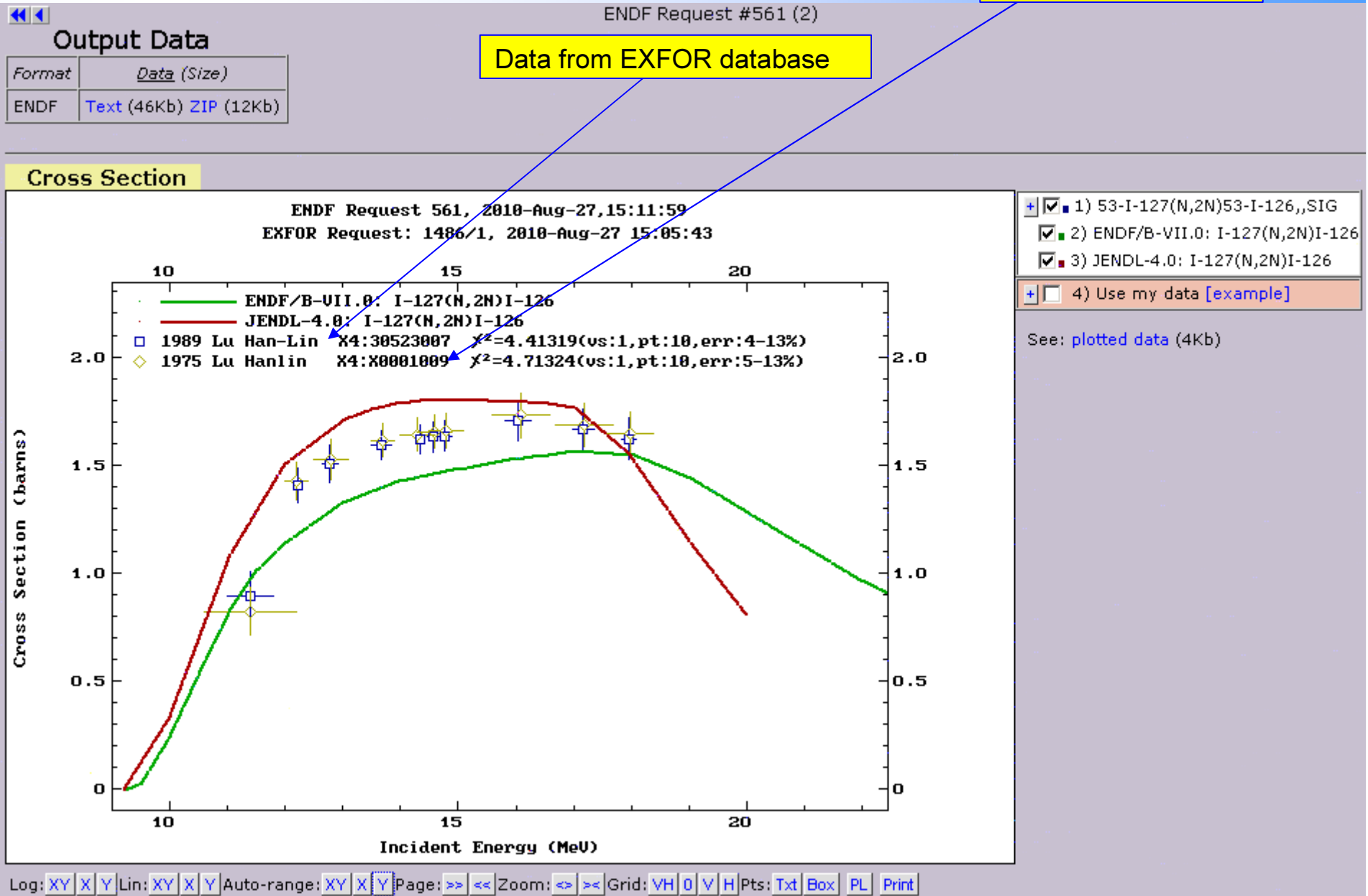
MF3: [SIG] Cross sections MT16: [N,2N] Production of two neutrons and a residual.

1	<input checked="" type="checkbox"/>	ENDF-6	Interpreted	σ	Plot	ENDF/B-VII.0	E=30MeV Lab=LANL,BNL Date=DIST-DEC06	Young, MacFarlane, Mughabghab
2	<input type="checkbox"/>	ENDF-6	Interpreted	σ	Plot	JEFF-3.1	E=30MeV Lab=CAD,BRC,+ Date=090105	G.NOQUERE, E.DUPONT, E.BAUGE
3	<input checked="" type="checkbox"/>	ENDF-6	Interpreted	σ	Plot	JENDL-4.0	E=20MeV Lab=JNDC Date=20091112	JNDC FP NUCLEAR DATA W.G.
4	<input type="checkbox"/>	ENDF-6	Interpreted	σ	Plot	JENDL-3.3	E=20MeV Lab=JNDC Date=20020222	JNDC FP NUCLEAR DATA W.G.
5	<input type="checkbox"/>	ENDF-6	Interpreted	σ	Plot	JENDL-3.3	E=20MeV Lab=JNDC Date=20020222 T=300	JNDC FP NUCLEAR DATA W.G.
6	<input type="checkbox"/>	ENDF-6	Interpreted	σ	Plot	ENDF/B-VI	E=30MeV Lab=LANL Date=19930930	P.G.YOUNG, R.E.MACFARLANE
7	<input type="checkbox"/>	ENDF-6	Interpreted	σ	Plot	ENDF/B-VI	E=30MeV Lab=LANL Date=19930930 T=300	P.G.YOUNG, R.E.MACFARLANE
8	<input type="checkbox"/>	ENDF-6	Interpreted	σ	Plot	ROSFOND-2010	E=20MeV Lab=IPPE Date=DIST-DEC06	PRONJAEV V.G.
9	<input type="checkbox"/>	ENDF-6	Interpreted	σ	Plot	ROSFOND-2008	E=20MeV Lab=IPPE Date=DIST-DEC06	PRONJAEV V.G.
10	<input type="checkbox"/>	ENDF-6	Interpreted	σ	Plot	CENDL-3.1	E=20MeV Lab=NJU,NWU+ Date=DIST-DEC09	J.W.ZHAO,W.N.SU,Z.J.ZHANG+
11	<input type="checkbox"/>	ENDF-6	Interpreted	σ	Plot	JEFF-3.1/A	E=20MeV Lab=UKAEA Date=DIST-JUL03 T=293	Forrest, Kopecky, Sublet, Koning
12	<input type="checkbox"/>	ENDF-6	Interpreted	σ	Plot	IRDF-2002	E=20MeV Lab=CNDC/CIAE Date=4 T=300	Zhao Wenrong and Lu Hanlin et.al.
13	<input type="checkbox"/>	ENDF-6	Interpreted	σ	Plot	IRDF-2002G	E=20MeV Lab=CNDC/CIAE Date=4 T=300	Zhao Wenrong and Lu Hanlin et.al.
14	<input type="checkbox"/>	ENDF-6	Interpreted	σ	Plot	JEFF-3.0	E=20MeV Lab=NEA Date=DIST-APR02	H.GRUPPELAAR,E.MENAPACE
15	<input type="checkbox"/>	ENDF-6	Interpreted	σ	Plot	JEF-2.2	Lab=NEA Date=920101	H.GRUPPELAAR,E.MENAPACE
16	<input type="checkbox"/>	ENDF-6	Interpreted	σ	Plot	MENDL-2	E=20MeV Lab=IPPE Date=DIST-SEP94	YU.N.SHUBIN ET.AL.
17	<input type="checkbox"/>	ENDF-6	Interpreted	σ	Plot	TENDL-2009	E=200MeV Lab=NRG Date=REV1-	A.J. Koning and D. Rochman
18	<input type="checkbox"/>	ENDF-6	Interpreted	σ	Plot	TENDL-2008	E=20MeV Lab=NRG Date=REV1-	A.J. Koning and D. Rochman

*Plotting options:
Plot cross sections with reconstructed resonances and applied Doppler broadening at the temperature 293°K =20°C
Other plots $d\sigma/d\Omega$ - angular distributions,
 $d\sigma/dE$ - energy distributions,

EXFOR + ENDF data plot

Your EXFOR data



Running EXFOR Utilities. Check ALT-flags

EXFOR-uploading system

by V.Zerkin, IAEA-NDS, February 2009 - August 2010

Request #281

Uploading...

Reading remote file: <http://nds121.iaea.org/exfor2/x4guide/x4formats/d4080.txt>

Remote file: <http://nds121.iaea.org/exfor2/x4guide/x4formats/d4080.txt>

EXFOR file copy: XX4up00281.txt size:30Kb (29808 bytes)

...ENTRY:1 SUBENT:7 Lines:368

Simple syntax checking...

Open/Close output from checking program... ..finished OK.

See: [\[your EXFOR File\]](#) [X4±]

See: [\[working EXFOR File\]](#) [X4±]

Run external utilities

Link to text file - result

Program	Run	Result	Output
Checking Alteration-flags	Run	[log]	
ORDER	Run		
CHEX	Run		
XTRACT	Run		
X4TOC4	Run		

Click here

EXFOR Entries in your file:

Your EXFOR file							EXFOR-database	
Alt	Entry	Date	X4±	Nick	Reference1	Author1	Entry	Entries with Reference
C	D4080	20100614	x4±	X0001	C,91JUELIC,,529,1991	F. Tarkanyi	D4080	D4001

Search in EXFOR database together with uploaded file

#	Weak-search: by target, reaction, web-quantity	Strong-search: by full reaction-code	Datasets: list, display and search similar data of 1-st author
1	Ni-0(p,x),,CS	28-NI-0(P,X)28-NI-57,,SIG	1) C D4080002 1991 F.Tarkanyi+ pt:67 [Reac+A]= D4002 ; D4062 ; D4083 ; D4106
2	Ti-0(p,x),,CS	22-TI-0(P,X)23-V-48,,SIG	1) C D4080003 1991 F.Tarkanyi+ pt:69 [Reac+A]= D4001 ; D4083 ; D4106
3	Ti-0(he3,x),,CS	22-TI-0(HE3,X)23-V-48,,SIG	1) C D4080004 1991 F.Tarkanyi+ pt:21 [Reac+A]= D4112
4	Ti-0(a,x),,CS	22-TI-0(A,X)24-CR-51,,SIG	1) C D4080005 1991 F.Tarkanyi+ pt:28 [Reac+A]= D4086 ; D4089

Running ZCHEX

EXFOR-uploading system

by V.Zerkin, IAEA-NDS, February 2009 - August 2010

Request #283

Uploading...

Reading remote file: <http://nds121.iaea.org/exfor2/x4guide/x4formats/d4080.txt>

Remote file: <http://nds121.iaea.org/exfor2/x4guide/x4formats/d4080.txt>

EXFOR file copy: XX4up00283.txt size:30Kb (29808 bytes)

...ENTRY: 1 SUBENT: 7 Lines: 368

Simple syntax checking...

Open/Close output from checking program... ...finished OK.

See: [\[your EXFOR File\]](#) [X4±]

See: [\[working EXFOR File\]](#) [X4±]

Run external utilities

Link to text files - result

Program	Run	Result	Output
Checking Alteration-flags	Run	[log]	
ORDER	Run		
CHEX	Run	[errors]	[terminal]
XTRACT	Run		
X4TOC4	Run		

EXFOR Entries in your file:

Your EXFOR file							EXFOR-database	
Alt	Entry	Date	X4±	Nick	Reference1	Author1	Entry	Entries with Reference
C	D4080	20100614	x4±	X0001	C,91JUELIC,,529,1991	F. Tarkanyi	D4080	D4001

Search in EXFOR database together with uploaded file

#	Weak-search: by target, reaction, web-quantity	Strong-search: by full reaction-code	Datasets: list, display and search similar data of 1-st author
1	Ni-0(p,x),,CS	28-NI-0(P,X)28-NI-57,,SIG	1) C D4080002 1991 F.Tarkanyi+ pt:67 [Reac+A]= D4002 ; D4062 ; D4083 ; D4106
2	Ti-0(p,x),,CS	22-TI-0(P,X)23-V-48,,SIG	1) C D4080003 1991 F.Tarkanyi+ pt:69 [Reac+A]= D4001 ; D4083 ; D4106
3	Ti-0(he3,x),,CS	22-TI-0(HE3,X)23-V-48,,SIG	1) C D4080004 1991 F.Tarkanyi+ pt:21 [Reac+A]= D4112
4	Ti-0(a,x),,CS	22-TI-0(A,X)24-CR-51,,SIG	1) C D4080005 1991 F.Tarkanyi+ pt:28 [Reac+A]= D4086 ; D4089

Conclusion

1. EXFOR uploading system offers integrated tools for compilers
2. Further development of the system depends of compilers' feedback

Thank you.