

My experience about EXFOR

~ How NRDC treated our data ? ~

Ayano Makinaga

Hokkaido Univ. Meme Media Laboratory

(~June , 30 2009: Konan Univ.)

Compilation process



From paper



From
experimentalist



Compiler
Data center



IAEA
EXFOR

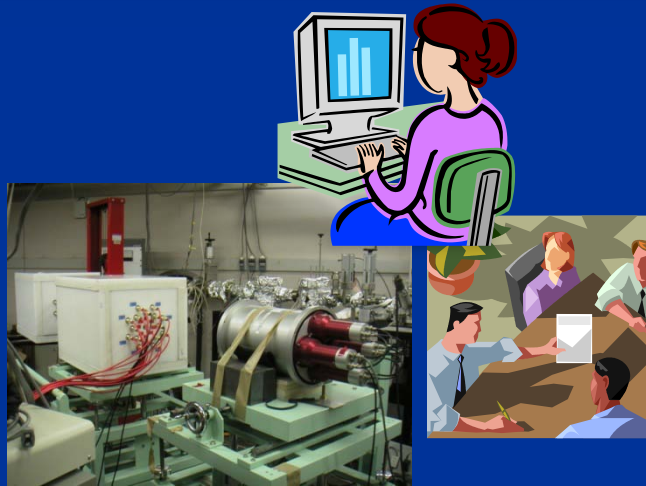


JCPRG
NRDF



Contact from Nuclear Data Center

In case of
Konan University & JCPRG



Experimental group
Konan Univ.



Compiler
JCPRG

Checking
EXFOR file
together



Japanese Experimentalists
and JCPRG have good
collaborative relationships

We can see data from EXFOR !

Request #44551
Results: Reactions: 7 Datasets: 8

Data Selection

Retrieve ☒ Selected ☐ Unselected ☐ All

Output: ☒ EXFOR ☐ EXFOR+ ☒ Bibliography ☐ TAB ☐ C4 ☐ PlotC4

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

Narrow Energy (optional), eV: Min: Max:

Advanced data modifications

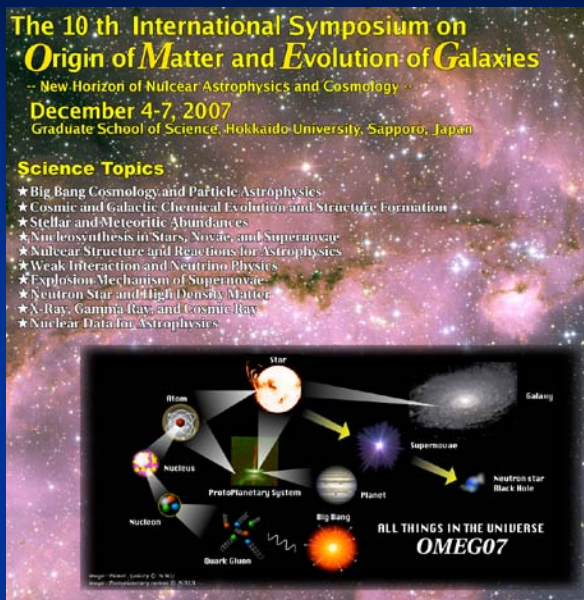
n	Display	Year	Author-1	Energy range, eV	Points	Reference	Accession#P	NSR-Key
1)	34-SE-80 (G,N) 34-SE-79,,SIG C4: MF3 MT4							
Quantity: [CS] Cross section								
1	<input type="checkbox"/> Info <input checked="" type="checkbox"/> X4 <input checked="" type="checkbox"/> X4+ <input checked="" type="checkbox"/> X4+ <input checked="" type="checkbox"/> T4	2009	A.Makinaga+	9.98e6 1.18e7	11	J,PR/C,79,025801,2009	L0144002	2009MA09
2	<input type="checkbox"/> Info <input checked="" type="checkbox"/> X4 <input checked="" type="checkbox"/> X4+ <input checked="" type="checkbox"/> X4+ <input checked="" type="checkbox"/> T4	2007	A.Makinaga+	9.98e6 1.18e7	11	C,2007SAPPOR,,134,200712	K2111002	
2)	34-SE-80 (G,N) 34-SE-79,,SIG,,BRA,EXP C4: MF=3 MT=?							
Quantity: [CS] Cross section								
3	<input type="checkbox"/> Info <input checked="" type="checkbox"/> X4 <input checked="" type="checkbox"/> X4+ <input checked="" type="checkbox"/> X4+ <input checked="" type="checkbox"/> T4	1982	A.M.Goryachev+	1.00e7 2.42e7	72	J,VIYF,8,121,82	M0070016	
3)	34-SE-80 (G,N) 34-SE-79-M,,SIG,,BRS C4: MF=3 MT=?							

But! In 2009, there exist problems.

Why two data sets (same data) are exist ??

What's happened !?

(K2111)Publication in AIP-1016,134,2007



$^{80}\text{Se}(\gamma, n)^{79}\text{Se}$ cross section and s-process branching at ^{79}Se

A. Makinaga*, H. Utsunomiya*, T. Kaihori*, T. Yamagata*, H. Akimune*, S. Goriely†, H. Toyokawa**, T. Matsumoto**, H. Harano**, H. Harada‡, S. Goko‡, F. Kitatani‡, K. Y. Hara§, S. Hohara|| and Y.-W. Lui||

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||Cyclotron Institute, Texas A & M University, College Station, Texas 77843, USA

The 10th International Symposium on
"Origin of Matter and Evolution of Galaxies"
December 4-7, 2007, Japan

Compilation by Japanese Center

TITLE $^{80}\text{Se}(\gamma, n)^{79}\text{Se}$ cross section and s-process branching at ^{79}Se

AUTHOR (A. Makinaga, H. Utsunomiya, T. Kaihori, T. Yamagata)

INSTITUTE (2JPNKON) Department of Physics

REFERENCE (C, 2007SAPPOR, ,134, 200712)

STATUS (APRVD) Proofread by Hiroaki Utsunomiya (2009.03.05)

HISTORY (20081124C)

(20090303R) Received by e-mail from A. Makinaga

Proofread by
my supervisor
(Prof. Utsunomiya)

Data sent to the
center are properly
compiled in EXFOR.

(L0144)Publication in PRC,79,025801,2009

PHYSICAL REVIEW C **79**, 025801 (2009)

Photodisintegration of ^{80}Se : Implications for the s-process branching at ^{79}Se

A. Makinaga,¹ H. Utsunomiya,¹ S. Goriely,² T. Kaihori,¹ S. Goko,³ H. Akimune,¹ T. Yamagata,¹ H. Toyokawa,⁴
T. Matsumoto,⁴ H. Harano,⁴ H. Harada,³ F. Kitatani,³ Y. K. Hara,³ S. Hohara,⁵ and Y.-W. Lui⁶

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⁶Cyclotron Institute, Texas A&M University, College Station, Texas 77843, USA

(Received 19 May 2008; revised manuscript received 24 November 2008; published 5 February 2009)

Compilation by US Center

TITLE Photodisintegration of ^{80}Se : Implications for the s-process branching at ^{79}Se

AUTHOR (A. Makinaga, H. Utsunomiya, S. Goriely, T. Kaihori, S. Goko, H. Akimune, T. Yamagata, H. Toyokawa, T. Matsumoto, H. Harano, H. Harada, F. Kitatani, Y. K. Hara, S. Hohara, Y.-W. Lui)

INSTITUTE (2JPNKON, 2BLGBRU, 2JPNJAE, 2JPN AIS)

REFERENCE (J, PR/C, 79, 025801, 2009)

...

HISTORY (20090211C) Compiled by S.H.

...

STATUS (CURVE) data taken from fig. 5 of the reference
Waiting for data from author

Compilation without Our Approval

We have not received any request from the compiler.

Problems (1/2)

① Data Request from US Center

From hlavac@savba.sk Mon Feb 9 14:38:29 2009

From: Stanislav Hlavac <hlavac@savba.sk>

To: makinaga@konan-u.ac.jp

Cc: utsunomya@konan-u.ac.jp

Subject: CSISRS/EXFOR



These are not our e-mail addresses.
We did not receive it.

Dear Dr. Makinaga,

at present I am compiling for the BNL National Nuclear Data Center the measured/published data for the CSISRS/EXFOR data library. NNDC is now responsible for compilation of all relevant papers published in Phys. Rev. C. Recently I got your paper entitled

Photodisintegration of 80Se: Implications for the s-process branching at 79Se
published in PHYSICAL REVIEW C 79, 025801 (2009).

This mail is provided by N. T

② Several Remarks on File from US

◆ (ERR-T) Total uncertainty

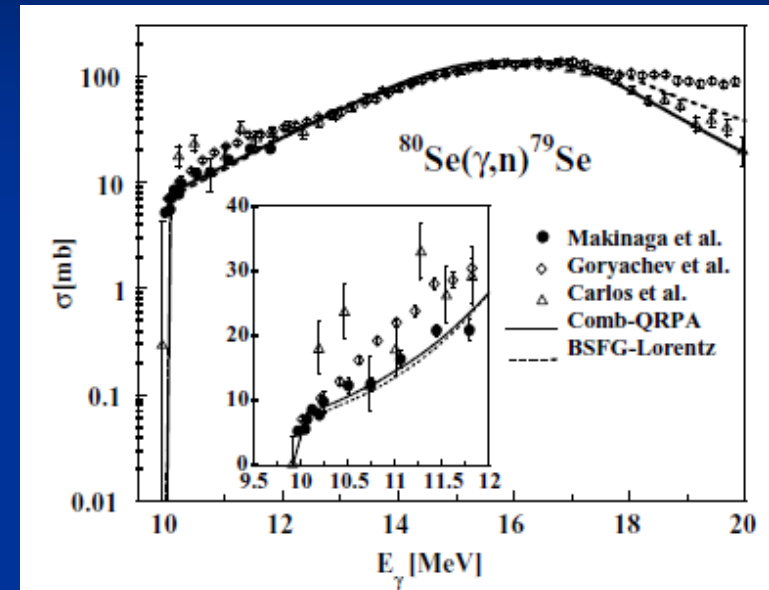
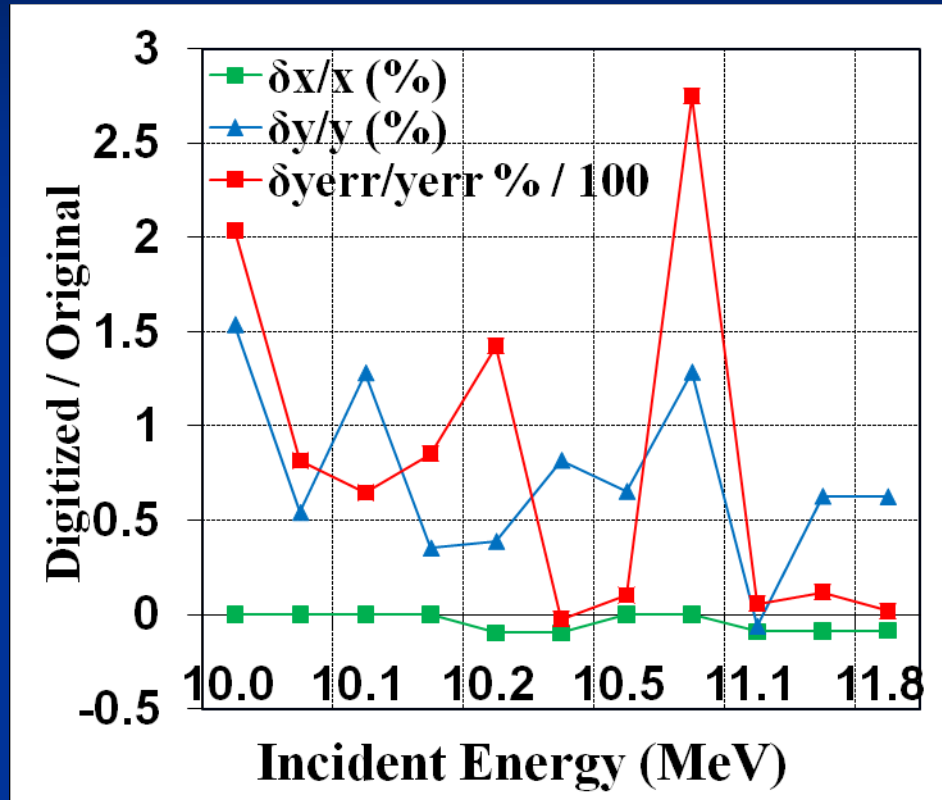
→ **Not true. I did not plot total uncertainty in the figure.**

◆ (CURVE) data taken from fig. 5 of the reference

→ **Some error-bars are very small and invisible. Our original uncertainties are stretched in digitized data.**

Problems (2/2)

③ Accuracy of Digitization



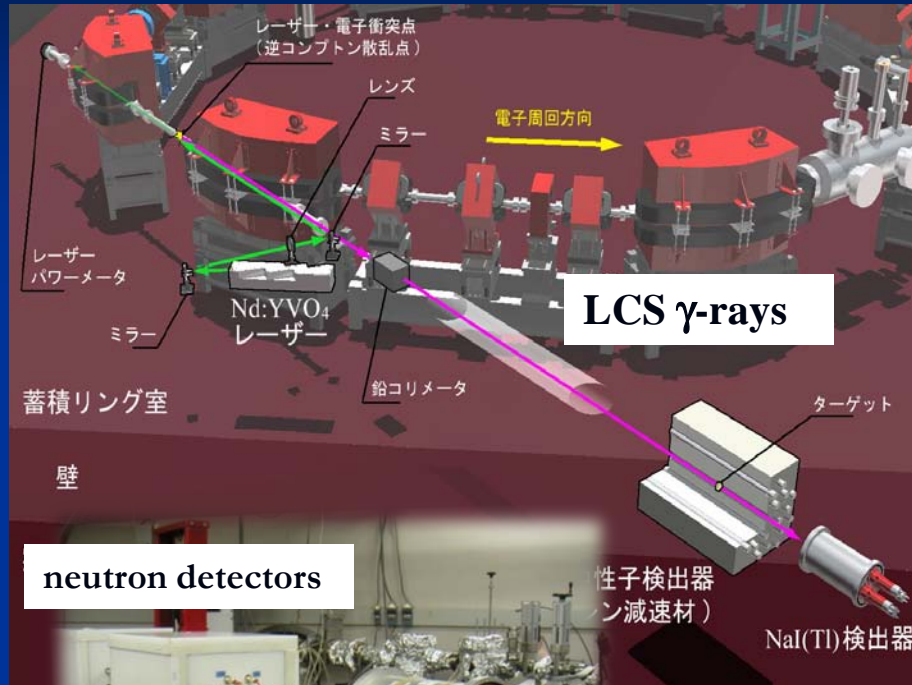
Graph of Cross Section

Incident energies are digitized very accurately!
But cross sections and its uncertainties are overestimated.
(Digitization from logarithmic scale is probably difficult.)

Summary

- Japanese experimentalists and JCPRG have already good collaborative relationships.
- But, in 2009, our data was compiled twice by the NRDC network.
- This situation provide inaccurate data file to EXFOR user, and upset a good relationship between experimentalists and NRDC network.
- I hope NRDC will treat our work more carefully !!

Photonuclear experiment at AIST



neutron detectors

NaI(Tl) detector

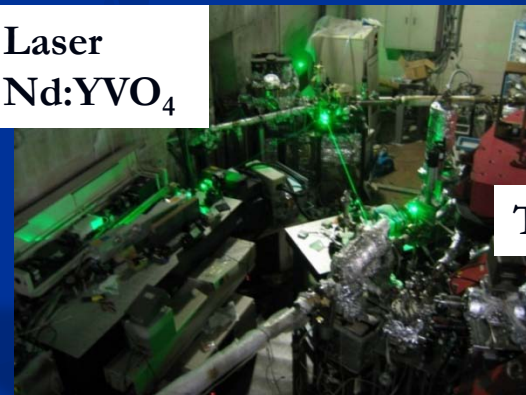
Neutron detector system

Photoneutron reaction

1. Nuclear physics
2. Astrophysics
3. Nuclear technology

Precise experimental nuclear data is needed.

Laser
Nd:YVO₄



Electron storage ring Teras