

# MyEnsdf Web Tools and ENSDF Web editor

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# Topics:

## Part I. MyEnsdf Web tools for ENSDF evaluators

- MyEnsdf: programs and operations
- Start MyEnsdf
- Input your ENSDF file
- Main panel
- Programs' parameters, output files
- Wrapping BrIccMixing, BARON, NDSPUB
- Demo and discussion

## Part II. ENSDF Web viewers and editor

- Dictionary system
- ENSDF interpreted ensdf+
- ENSDF as interactive tree ensdf±
- ENSDF Web editor ensdf++

# **Part I.**

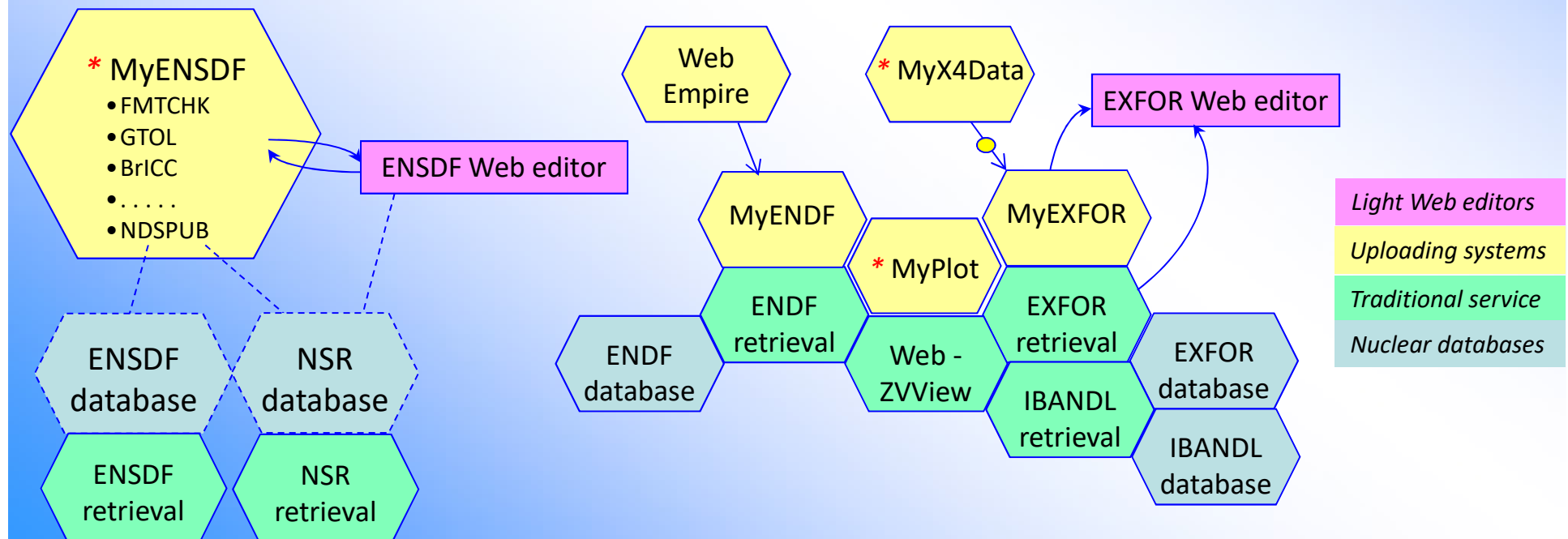
## **MyEnsdf Web tools for ENSDF evaluator**

Main purpose of MyEnsdf:  
running ENSDF codes on user's ENSDF file  
on Web server

# NDS Web server applications

2009 MyPlot	* Plotting with Web-ZVView
2010 MyEXFOR	EXFOR Uploading System for EXFOR compilers ZCHEX, ZORDER, XTRACT, X4TOC4; Web-EXFOR
2015 MyENDF	ENDF Uploading System CHECKR, FIZCON, STANEF, PSYCHE, INTER, PREPRO, ENDVER, Web-EXFOR-ENDF, FUDGE, GRUCON
<b>2011 MyENSDF</b>	* ENSDF Uploading System FMTCHK, chk_ENSDF, PREPRO, XPQCHK, ENSDF_to_XML, ALPHAD, ALPHAD_RADD, BrIcc, BrIccMixing, GABS, GTOL, LOGFT, PANDORA, RADLST, RULER, BARON, NDSPUB, Viewers (Ensdft+, Ensdft±), ENSDF Web-Editor
2013 WebEmpire	Web Interface to Empire-3.1 /test-version, disabled/
2015 MyX4Data	* Uploading experimental data as text to EXFOR system for constructing covariance matrices, plotting, inverse reaction calculations, etc.

\* Public access



# MyEnsdf groups of operations

- ❖ Run remotely ENSDF analysis and utility codes
- ❖ Run remotely NDSPUB: *//old*  
generates tables and drawings; allows editing control file for producing final PS/PDF; connected to NNDC relational databases: ENSDF and NSR
- ❖ Views:  
ensdf+ interpreted “ENSDF cards”  
ensdf± interactive tree
- ❖ Light ENSDF Web editor
- ❖ Administrating users’ files and working areas *//obsolete*

# Start MyEnsdf

IAEA-NDS → NSDD → Evaluation Tools → Online Webtools

<http://www-nds.iaea.org/exfor/myensdf.htm>



The screenshot shows a web browser window with the URL <https://www-nds.iaea.org/exfor/myensdf.htm>. The page header includes the IAEA logo and the text "International Atomic Energy Agency Nuclear Data Services Section Données Nucléaires, AIEA". A search bar is visible in the top right. The main content area is titled "Web tools for ENSDF evaluators" and includes the text "Web server: www-nds.iaea.org". A "Login" link is located in the top right corner. The login form is labeled "Guest:" and contains the following elements:

- A "Required code:" section with a CAPTCHA image showing the number "2335" and a "Refresh" button.
- An "Enter code\*:" section with a text input field containing "2335" and a "Go!" button.
- A "Name:" section with a text input field containing "Zerkin".

Request password by e-mail from NSDD coordinators

# Input your ENSDF file

## MyEnsdf: Web tools for ENSDF evaluators

by V.Zerkin, IAEA-NDS, 2011-2017, ver.2018-05-03

Upload your ENSDF dataset and run remotely ENSDF codes: FMTCHK, chk\_ENSDF, PREPRO, XPQCHK, ALPHAD, ALPHAD\_RADD, GTOL, BrIcc, BrIccMixing, GABS, LOGFT, PANDORA, RADLST, RULER, BARON, NDSPUB, etc.



Evaluator: Guest-161.5.6.201-Zerkin  
Working area: 1  
Use existing ENSDF file:  No file selected.

Tests: [alphad](#) [194Bi](#) [fmtchk](#) [gabs](#) [gtol](#) [newgtol](#) [logft](#) [pandora](#) [2](#) [radlst](#) [ruler](#) [xpqchk](#) [1-5](#) [152](#) [aa](#) [177Lu](#) [235Pa](#) [221Fr](#)

ENSDF text: [example](#)

```
184AU 184HG EC DECAY 2005SA40,1994IB01,1978NE1010NDS 201002
184AU H TYP=FUL&AUT=CORAL M. BAGLIN&CIT=NDS 111,275 (2010)&CUT=1-Oct-2009&
184AU D PARENT T: 30.6 S 3 (1972Fi12), 30.9 S 3 (1994Wa23).
184AU2D 32.5 S 10 (1970Ha18); from 5535A(T). 32.0 S 10 (1969Ha03).
184AU3D WEIGHTED AVERAGE: 30.87 S 26.
184AU c Others: 1975Ho03, 1971Hu02, 1969Ha03 (observed 157|g and 237|g).
184AU c 2005Sa40: mass-separated {+184}Hg source from fragmentation of molten
184AU2c Pb target by 600 MeV or 1 GeV protons; Ge(Li) and Si(Li) detectors,
184AU3c high resolution 180|' magnetic spectrograph; measured E|g, I|g,
184AU4c E(ce), I(ce). Additional sources from {+148}Sm({+40}Ar,X); planar Ge
184AU5c (FWHM=0.9 keV at 122 keV) for E|g|<1 MeV; two HPGe detectors (FWHM
184AU6c |?2.3 keV at 1.3 MeV) for E|g|<1.3 MeV; measured x-|g-t and |g-|g-t
184AU7c events which were sorted to provide prompt-, total- and delayed-
184AU8c coincidence bidimensional matrices (60 ns or 100 ns time windows).
184AU2c Supersedes 2003IbZZ; see also 1994Ib01.
184AU c 1994Ib01: mass separated source from bombardment of {+148}Sm by 185 MeV
184AU2c {+40}Ar ions; He-jet transport, iodine aerosol; two HPGe coaxial
184AU3c detectors, one HPGe x-ray detector; measured singles |g and x-ray
```

- Useful links:
- NSDD
  - NuDat2
  - LiveChart
  - ENSDF:
    - web-retrieval
    - manual
    - programs
    - data archive
  - XUNDL:
    - web-retrieval
    - data archive
  - x4pdf-nsr
  - x4pdf-all

Login: Guest-161.5.6.201-Zerkin 2018/10/16:15:08:25 161.5.6.201::Austria Access level=2

#	Area	ENSDF file	Files	Created	
1.1	tmp1 Zerkin	184Au.ens	9	2018/10/16 14:27:22 Zerkin 161.5.6.201::Austria	<input type="button" value="continue"/>

Web Design and Programming: Viktor Zerkin, NDS, International Atomic Energy Agency (V.Zerkin@iaea.org)  
Last updated: 10/16/2018 17:09:19

Copy/Paste/Edit  
your ENSDF data file  
or put Web link

Continue your  
previous session

Request #12  
 User: Zerkin Access level=2  
 Project: tmp1  
 Uploading... Your input: 29Kb (29602 bytes)  
 ...Ensdf file... Total: 361 lines  
 ...Nuclide: **184AU**

## Running ENSDF Codes on Web

by V.Zerkin, IAEA-NDS, 2011-2018 (ver.2018-05-03)

News, updates, versions, history

...See: your file: 184Au.ens-00, working file: 184Au.ens. ENSDF: text, ensdf+, ensdf±, edit  
 ...End of work: after you finished, please, remove your files and close this project → [clean](#)

Running utility codes Files frame

# Main panel

Call viewers and editor

Working files

Terminal output

Programs, parameters, run, results Timeout:  sec

Checking and utility codes

(1)  **FMTCHK** Checking ENSDF format /10.4, 10-May-2017/  
 Analyzes the format of an ENSDF formatted file to verify that it conforms to  
 "Evaluated Nuclear Structure Data File. A Manual for Preparation of Data Sets"  
 /by J.K.Tuli, NNDC, Brookhaven National Laboratory, USA/  
 Input File:   
 Errors only (or full report)  
 Check continuation cards  
 Report only fatal errors  
 Suppress warning messages  
 Suppress XREF/DSID check

File	Size	Date	Time
184Au.ens.fmtchk	1,027	2018/10/16	15:29:49
184Au.ens.fmtchk.inp	40	2018/10/16	15:29:49
184Au.ens.fmtchk.tt	662	2018/10/16	15:29:49

(2)  **chk\_ENSDF** Total ENSDF checker /v-0.4.7, 10-Apr-2014/  
 PNPI checking codes (see [page])

(5)  **sPREPRO** 'some' preprocessing /2014/

(6)  **XPQCHK** checks consistency of quantities given on p-card /2014/

(7)  **ENSDF\_to\_XML** converts file ENSDF to XML /G.Shulyak, PNPI, Nov-2018/

Analysis codes

(8)  **ALPHAD** Alpha Hinderance Factor Program (AHF, AHFY, ALPHAD) /v-2.0a, 08-Nov-2008/

(9)  **ALPHAD\_RADD** Alpha Hinderance Factor Program (AHF, AHFY, ALPHAD) /v-2.0a + RaddD:16-Aug-2018/

(10)  **BRICC** calculates conversion coefficients and E0 electronic factors /v2.3b, 16-Dec-2014/

(11)  **BRiccMixing** calculates Mixing Ratio (MR) and Normalization Factor (R) /v2.3b, 16-Dec-2014/

(12)  **GABS** Gamma-ray absolute intensity and normalization calculation /v-11c, 08-Jan-2017/

(13)  **GTOL** Determines level energies from a least-squares fit to Ev's & feedings /v-7.2h, 24-May-2013/

(14)  **LOGFT** Calculates log ft for beta decay /v-7.2, 7-Feb-2001/

(15)  **PANDORA** Checks physics of  Show:  DOI  Authors  Title

#	NSR	Author-1	Reference	DOI
1	1969HA03.pdf	P.G.Hansen	Phys.Lett. 28B, 415 (1969); Erratum Phys.Lett. 28B, 663 (1969)	10.10
2	1970FIZZ.pdf	M.Finger	CERN-70-29 (1970); see 1970F116	
3	1970HA18.pdf	P.G.Hansen	Nucl.Phys. A148, 249 (1970)	10.10
4	1971HU02.pdf	H.Hubel	Phys.Rev. C3, 756 (1971)	10.11
5	1972FI12.pdf	M.Finger	Nucl.Phys. A188, 369 (1972)	10.10
6	1975HO03.pdf	P.Hornshoj	Nucl.Phys. A239, 15 (1975)	10.10
7	1978NE10.pdf	W.G.Nettles	J.Phys.(Paris) 39, 343 (1978)	
8	1990ED01.pdf	R.Eder	Hyperfine Interactions 59, 83 (1990)	
9	1994IB01.pdf	F.Ibrahim	Z.Phys. A350, 9 (1994)	
10	1994ROZY	B.Roussiere	Proc.8th Int.Symposium on Capture Gamma-Ray Spectroscopy and Related Topic, Fribourg, Switzerland, 20-24 September 1993, J.Kern, Ed., World Scientific, Singapore, p.231 (1994)	
11	1994WA23.pdf	J.Wauters	Phys.Rev. C50, 2768 (1994)	10.11
12	2003IBZZ.pdf	F.Ibrahim	Priv.Comm. (2003)	

Note. Codes are updated on requests  
 [List of Datasets and Nuclides](#)  
 [List of NSR-References](#) Show:

Your Files [refresh] Sort by: [name] [extension] [length] [time]

File	Size	Date	Time
184Au.ens-00	29,602	2018/10/16	15:28:23
184Au.ens	29,241	2018/10/16	15:28:23
184Au.ens.fmtchk	1,027	2018/10/16	15:29:49
184Au.ens.fmtchk.err	0	2018/10/16	15:29:49
184Au.ens.fmtchk.inp	40	2018/10/16	15:29:49
184Au.ens.fmtchk.tt	662	2018/10/16	15:29:49
184Au.ens.ndspub.err	33	2018/10/16	15:32:13
184Au.ens.ndspub.inp	35	2018/10/16	15:32:12
184Au.ens.ndspub.pdf	60,163	2018/10/16	15:32:14
184Au.ens.ndspub.ps	172,859	2018/10/16	15:32:13
184Au.ens.ndspub.tt	2,905	2018/10/16	15:32:14
184Au.ens.ndspub.zerocvt1	0	2018/10/16	15:32:12
184Au.ens.pandora	29,241	2018/10/16	15:26:10
184Au.ens.pandora.err	0	2018/10/16	15:26:10
184Au.ens.pandora.err0	301	2018/10/16	15:26:10
184Au.ens.pandora.gam	9,464	2018/10/16	15:26:10
184Au.ens.pandora.gle	7,336	2018/10/16	15:26:10
184Au.ens.pandora.inp	41	2018/10/16	15:26:10
184Au.ens.pandora.lev	3,368	2018/10/16	15:26:10
184Au.ens.pandora.rad	1,305	2018/10/16	15:26:10
184Au.ens.pandora.rep	226	2018/10/16	15:26:10
184Au.ens.pandora.tt	1,090	2018/10/16	15:26:10
184Au.ens.pandora.xrf	1,580	2018/10/16	15:26:10

Total files: 23, length: 350519 bytes

(22)  **Submit** results to NNDC /Oct-2014/  
 Zip and Submit to NNDC: your ENSDF file, NDS PUB Control and PDF files.

Mozilla Firefox  
 https://www-nds.iaea.org/exfor/servlet/EnsdfRunUtil

Treatment ENSDF file by FMTCHK program  
 Basic file: 184Au.ens  
 Input file: 184Au.ens  
 Timeout: 10min  
**Elapsed time=00:00:02 ...finished**  
 Start process...

```

main prog      start
-----
FMTCHK version 10.4 [10-May-2017]
INPUT file (DEF: fmtchk.inp):      OUTPUT file (DEF: fmtchk.rpt):
Errors only or full report (E, F):  Check continuation cards (Y, N):      Report only fatal errors
184AU  184HG EC DECAY                2005SA40,1994IB01,1978NE10,10NDS  201002
2 error(s) reported
1 warning(s) reported
Program completed successfully
Program: fmtchk Error-code=0
main prog      finish
  
```

----- File: 184Au.ens.fmtchk  
 EVALUATED NUCLEAR STRUCTURE DATA FILE SYNTAX CHECK FMTCHK version 10.4 AS OF  
 .....1.....2.....3.....4.....5.....6.....7.....8



# Main panel: full list of codes

## Checking and utility codes

- 1) **FMTCHK** Checking ENSDF format /10.4, 10-May-2017/
- 2) **chk\_ENSDF** Total ENSDF checker/v-0.4.7, 10-Apr-2014/
- 3) **chk\_PARENT** Checking PARENT-records in DECAY datasets/24-Jan-2009/
- 4) **chk\_brackets** Pair brackets checker from ENSDF-format files/20-Apr-2012/
- 5) **sPREPRO** 'some' preprocessing/2014/
- 6) **XPQCHK** checks consistency of quantities given on p-card /2014/
- 7) **ENSDF\_to\_XML** converts file ENSDF to XML /G.Shulyak, PNPI, Nov-2016/

## Analysis codes

- 8) **ALPHAD** Alpha Hinderance Factor Program (AHF, AHFYE, ALPHAD) /v-2.0a, 06-Nov-2006/
- 9) **ALPHAD\_RADD** Alpha Hinderance Factor Program (AHF, AHFYE, ALPHAD) /v-2.0a + RaddD:16-Aug-2016/
- 10) **Brlcc** calculates conversion coefficients and E0 electronic factors /v2.3b, 16-Dec-2014/
- 11) **BrlccMixing** calculates Mixing Ratio (MR) and Normalization Factor (R) /v2.3b, 16-Dec-2014/
- 12) **GABS** Gamma-ray absolute intensity and normalization calculation /v-11c, 08-Jan-2017/
- 13) **GTOL** Determines level energies from a least-squares fit to  $E_\gamma$ 's & feedings /v-7.2h, 24-May-2013/
- 14) **LOGFT** Calculates log ft for beta decay /v-7.2, 7-Feb-2001/
- 15) **PANDORA** Checks physics of ENSDF files/v-7.1c, 12-Oct-2017/
- 16) **RADLST** calculates the nuclear and atomic radiations associated with the radioactive decay /v-5.5, 05-Oct-1988/
- 17) **RULER** Calculates reduced transition probabilities /v-3.2d, 20-Jan-2009/

## Other evaluation tools/codes

- 18) **BARON** calculates model parameters for nuclear rotation bands/v1.0, 23-Jun-2014/

## Publication tools

- 19) **Upload** your ENSDF file to working database /Sept. 2014/
- 20) **NDSPUB** ENSDF publication program /v-12.26b, 15-Jul-2008/

## Save your files

- 21) **ZIP** Put all your files into ZIP archive/2015/

# Main panel: list of Datasets and Nuclides

Summary of your ensdf file

## List of Datasets and Nuclides

#	Mass	NuclID	R	DSID	DSType	nRec	nLines	nLevels	$\gamma$ 's	DS	Nuclide
1	177	177LU		ADOPTED LEVELS, GAMMAS	ADOPTED	256	1417	204	331	ds ds+	1) nuc nuc+ 177LU
2	177	177LU	B	177YB B- DECAY	DECAY	36	187	17	44	ds ds+	
3	177	177LU	C	177LU IT DECAY (160.44 D)	DECAY	24	81	7	10	ds ds+	
4	177	177LU	E	176YB(3HE,D),(A,T)	REACTION	54	62	36		ds ds+	
5	177	177LU	A	176LU(N,G) E=THERMAL	REACTION	550	1451	148	722	ds ds+	
6	177	177LU	D	176LU(D,P)	REACTION	59	68	45		ds ds+	
7	177	177LU	F	178HF(T,A)	REACTION	39	41	27		ds ds+	
8	177	177LU	G	(HI,XNG)	REACTION	84	278	65	118	ds ds+	

Get Nuclide: ensdf, ensdf+

Get Dataset: ensdf, ensdf+

```

177LU 176LU(N,G) E=THERMAL 1971Ma45,1975Ge11,1996Pe0503NDS 200305
177LU H TYP=FUL$AUT=F.G. KONDEV$CIT=NDS 98, 801 (2003)$CUT=1-Aug-2002$
177LU C 1996Pe05: Measured: EG, IG,
177LU2C Bent crystal spectrometer.
177LU C 1975Ge11: Measured: EG, IG.
177LU2C Gamma-ray anti-Compton spec
177LU C 1971Ma45: Measured: EG, IG,
177LU2C GE(LI) detectors.
177LU C Other: 1995Sh18, 1993Be39,
177LU2C 1981St28, 1980Be05, 1978Al11
177LU3C 1972Be85, 1971Be40, 1971Mi0
177LU4C 1965He06.
177LU CL E$ From a least-squares fit
177LU2CL specified.
177LU CL J$From the measured electro
177LU2CL band structure with both ca
177LU3CL transitions.
177LU CL T$From adopted levels, unle
177LU CL E(A)$ PI 7/2[404] (g{-7/2})
177LU2CL is supported by the observe
177LU3CL and g{-K}-g{-R} values ((g{
177LU4CL weighted average from value
177LU5CL and systematics of similar
177LU6CL nuclei.
177LU CL E(B)$ PI 9/2[514] (h{-11/2})
177LU2CL is supported by the observe
    
```

## Interpreted ENSDF: ensdf+

by V.Zerkin, IAEA-NDS, 2015-2017, ver-2017-10-25

177Lu.ens #4

MASS 177

Nuclide 177LU

Dataset /REACTION/ 177LU [176LU(N,G) E=THERMAL]

Ident

177LU 176LU(N,G) E=THERMAL 1971Ma45,1975Ge11,1996Pe0503NDS 200305 #Record 1/1 Ident Line:1748

Hist

177LU H TYP=FUL\$AUT=F.G. KONDEV\$CIT=NDS 98, 801 (2003)\$CUT=1-Aug-2002\$ #Record 1/1 Hist Line:1749

#TYP: FUL //Complete revision of the nuclide  
#AUT: F.G. Kondev  
#CIT: NDS 98, 801 (2003)  
#CUT: 1-Aug-2002

GComm C Record(s): 4

177LU C 1996Pe05: Measured: EG, IG, ECE, ICE, GG coin, GG(T).  
177LU2C Bent crystal spectrometer. Double focusing magnetic spectrometer.

#Record 1/4 GComm Line:1750[2]  
1996Pe05<sup>[pdf]</sup>: Measured: EG, IG, ECE, ICE, GG coin, GG(T). Bent crystal spectrometer. Double focusing magnetic spectrometer.

177LU C 1975Ge11: Measured: EG, IG. Gamma-ray band-filter spectrometer.  
177LU2C Gamma-ray anti-Compton spectrometer.

#Record 2/4 GComm Line:1752[2]  
1975Ge11<sup>[pdf]</sup>: Measured: EG, IG. Gamma-ray band-filter spectrometer. Gamma-ray anti-Compton spectrometer.

177LU C 1971Ma45: Measured: EG, IG, ECE, ICE, GG coin. B spectrograph.  
177LU2C GE(LI) detectors.

#Record 3/4 GComm Line:1754[2]  
1971Ma45<sup>[pdf]</sup>: Measured: EG, IG, ECE, ICE, GG coin. B spectrograph. GE(LI) detectors.

177LU C Other: 1995Sh18, 1993Be39, 1988Ga05, 1987Be53, 1986Ok02, 1984Be34,  
177LU2C 1981St28, 1980Be05, 1978Al12, 1972Ma54, 1972Mi16, 1972Ge20, 1972Fu12,  
177LU3C 1972Be85, 1971Be40, 1971Mi01, 1970Fl09, 1970Be56, 1968Be70, 1965Ma18,  
177LU4C 1965He06.

#Record 4/4 GComm Line:1756[4]  
Other: 1995Sh18<sup>[pdf]</sup>, 1993Be39, 1988Ga05<sup>[pdf]</sup>, 1987Be53,  
1986Ok02<sup>[pdf]</sup>, 1984Be34<sup>[pdf]</sup>, 1981St28, 1980Be05<sup>[pdf]</sup>, 1978Al12<sup>[pdf]</sup>,  
1972Ma54<sup>[pdf]</sup>, 1972Mi16<sup>[pdf]</sup>, 1972Ge20<sup>[pdf]</sup>, 1972Fu12<sup>[pdf]</sup>, 1972Be85,  
1971Be40<sup>[pdf]</sup>, 1971Mi01<sup>[pdf]</sup>, 1970Fl09, 1970Be56, 1968Be70,  
1965Ma18<sup>[pdf]</sup>, 1965He06<sup>[pdf]</sup>.

GComm CL Record(s): 27

177LU CL E\$ From a least-squares fit to the G ray energies, unless otherwise  
177LU2CL specified.

#Record 1/27 GComm Line:1760[2]  
#E: From a least-squares fit to the G ray energies, unless otherwise



- Show/Hide
- L-Fmt
- G-Fmt
- Interpret.
- #Record
- Hierarchy
- G-plot
- G-plot:ok
- L-plot/V
- L-plot/H
- L<sub>n</sub> in/out

# Main panel: list of NSR References

List of NSR-References Show:  DOI  Authors  Title

#	NSR	Author-1	Reference	DOI
1	1969HA03 pdf	P.G.Hansen	Phys.Lett. 28B, 415 (1969); Erratum Phys.Lett. 28B, 663 (1969)	10.1016/0370-2693(69)90337-2
2	1970FIZZ pdf	M.Finger	CERN-70-29 (1970); see 1970FI16	
3	1970HA18 pdf	P.G.Hansen	Nucl.Phys. A148, 249 (1970)	10.1016/0375-9474(70)90622-6
4	1971HU02 pdf	H.Hubel	Phys.Rev. C3, 756 (1971)	10.1103/PhysRevC.3.756
5	1972FI12 pdf	M.Finger	Nucl.Phys. A188, 369 (1972)	10.1016/0375-9474(72)90064-4
6	1975HO03 pdf	P.Hornshoj	Nucl.Phys. A239, 15 (1975)	10.1016/0375-9474(75)91130-6
7	1978NE10 pdf	W.G.Nettles	J.Phys.(Paris) 39, 343 (1978)	
8	1990ED01 pdf	R.Eder	Hyperfine Interactions 59, 83 (1990)	
9	1994IB01 pdf	F.Ibrahim	Z.Phys. A350, 9 (1994)	
10	1994IB99		---Error: No such Entry in NSR database--- 1994IB99	
11	1994ROZY	B.Roussiere	Proc.8th Int.Symposium on Capture Gamma-Ray Spectroscopy and Related Topic, Fribourg, Switzerland, 20-24 September 1993, J.Kern, Ed., World Scientific, Singapore, p.231 (1994)	
12	1994WA23 pdf	J.Wauters	Phys.Rev. C50, 2768 (1994)	10.1103/PhysRevC.50.2768
13	2003IBZZ pdf	F.Ibrahim	Priv.Comm. (2003)	
14	2005SA40 pdf	J.Sauvage	Eur.Phys.J. A 25, 5 (2005)	10.1140/epja/i2004-10236-0

Error in your file:  
wrong NSR Keyno

No PDF file in  
PDF database

Go to Web NSR

Display PDF  
(privileged)

Search in NSR  
by 1<sup>st</sup> author

Go to original publication via  
doi.org

Search in NSR by every author

Title (from NSR)

List of NSR-References Show:  DOI  Authors  Title

4	1971HU02 pdf	H.Hubel	Phys.Rev. C3, 756 (1971)	10.1103/PhysRevC.3.756	H.Hubel, R.A.Naumann, E.H.Spejewski	Levels in <sup>184</sup> Pt, <sup>186</sup> Pt, and <sup>188</sup> Pt
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Note. Authors, Reference, DOI's, Title are taken from NSR database on the fly

# Wrapping program BrIccMixing

## BrIccMixing

BrIccMixing calculates Mixing Ratio (MR) and Normalization Factor (R) /v2.3b, 16-Dec-2014/  
 BrIccMixing v2.3b (by T.Kibedi, 2008-2014) determines Mixing Ratio (MR) and Normalization Factor (R) from  
 conversion electron data See [manual]

Input file: type/paste/edit text below See how-to in: [manual] Use example: [1] [2] [3]

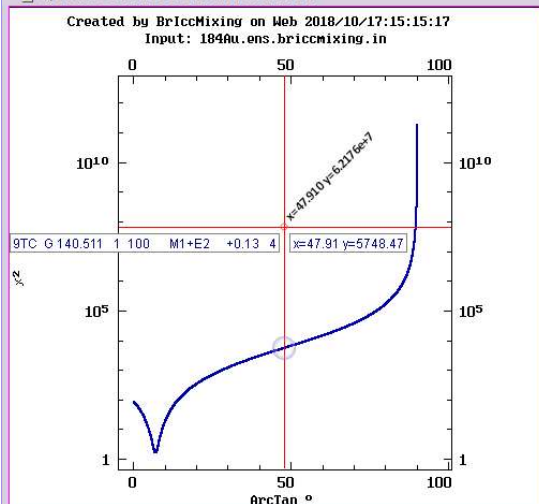
```
99TC G 140.511 1 100 M1+E2 +0.13 4
99Tc 140.511 1
M1+E2 0.13 1.0
# NSrKey Shell IccVal Unc Type
1981Ge05 K 0.097 3 A
1981Ge05 T 0.119 3 A
1969Ag04 L1/L2 12 4 R
1969Ag04 L1/L3 18 7 R
1969Ag04 L2/L3 1.7 7 R
1974Ga01 MR +0.118 6 A
```

Note. Results are collected in the files \*.htm and \*.zvd

Run [result] [terminal] [clean]

```
x 184Au.ens.briccmixing.BrIccMixing.in 361 2018/10/17 15:15:15
x 184Au.ens.briccmixing.BrIccMixing.lst 2,450 2018/10/17 15:15:17
x 184Au.ens.briccmixing.BrIccMixing_01.dat 279,219 2018/10/17 15:15:15
x 184Au.ens.briccmixing.BrIccMixing_01.plt 2,464 2018/10/17 15:15:15
x 184Au.ens.briccmixing.err 70 2018/10/17 15:15:17
x 184Au.ens.briccmixing.htm 1,881 2018/10/17 15:15:17
x 184Au.ens.briccmixing.in 361 2018/10/17 15:15:15
x 184Au.ens.briccmixing.inp 3 2018/10/17 15:15:15
x 184Au.ens.briccmixing.tt 2,696 2018/10/17 15:15:17
x* 184Au.ens.briccmixing.zvd 217,328 2018/10/17 15:15:17
```

Welcome to BrIccMixing on Web  
 Run: 2018/10/17:15:15:17  
 BrIccMixing Datasets  
 1) 99TC G 140.511 1 100 M1+E2 +0.13 4



Select data for plotting [all] [none]  
 1) 99TC G 140.511 1 100 M1+E2 +0.13 4  
 2) Use my data [example]  
 Use my control file [init] [help]  
 See: plotted data (247Kb)

Welcome to BrIccMixing on Web  
 Run: 2018/10/17:15:15:17

```
99TC G 140.511 1 100 M1+E2 +0.13 4
Transition: 140.511 (1) keV
Adopted from fit:  $\delta=0.122 (+13-13)$ ;  $\chi^2/\nu=1.70E+00$ 
Input data -----
```

NSRkey	Shell	Experiment		Fit		Type
		Icc (Unc)		Icc (Unc)		
1981Ge05	K	0.097 (3)		0.0985 (14)		A
1981Ge05	T	0.119 (3)		0.1129 (16)		A
1969Ag04	L1/L2	12 (4)		15.8 (4)		R
1969Ag04	L1/L3	18 (7)		31.3 (7)		R
1969Ag04	L2/L3	1.7 (7)		1.98 (4)		R
1974Ga01	MR	+0.118 (6)		0.1218		A

Log: XY X Y Lin: XY X Y Auto-range: XY X Y Page: << >> Zoom: << >> Grid: V H 0 V H Pts: Txt Box PL Print  
 Reset Repaint Legend Authors Info PostScript Plotting options: [-] Clipboard: Copy  
 Shift legend: x=10 y=10 Split: 0 1:xy, 2:y Marker: Plot data or ratio: 0 0: data; 1: ratio to dataset-1; 2: ratio to 2-nd, etc.

# Programs' parameters, output files

## GTOL

[-] **GTOL** Determines level energies from a least-squares fit to E<sub>γ</sub>'s & feedings /v-7.2h, 24-May-2013/

Input File:

- Create a new file with level energies replaced by GTOL results
- Suppress gamma energy comparison
- Suppress intensity comparison

Assumed DCC theory (%):  (Bricc-1.4%, Hsicc-3%, etc.)

- Run also "NewGTOL\*" program (for cases where GTOL does not give results due to matrix singularity) by L.P.Kabina, A.A.Rodionov, Yu.L.Khazov (PNPI, Russia), [\[publication\]](#). \*/test version/
- Take into account recoil of a nucleus

[Run](#) [\[result\]](#) [\[terminal\]](#) [\[clean\]](#)

x	184Au.ens.gtol	37,102	2018/10/17	15:18:47
x	184Au.ens.gtol.inp	59	2018/10/17	15:18:46
x	184Au.ens.gtol.newgtol.inp	40	2018/10/17	15:18:46
x	184Au.ens.gtol.newgtol.out	29,079	2018/10/17	15:18:47
x	184Au.ens.gtol.newgtol.rpt	36,396	2018/10/17	15:18:47
x	184Au.ens.gtol.out	29,079	2018/10/17	15:18:47
x	184Au.ens.gtol.tt	1,650	2018/10/17	15:18:47

## PANDORA

[-] **PANDORA** Checks physics of ENSDF files /v-7.1c, 12-Oct-2017/

Provides the physics checks for an ENSDF file.

Starting from ver-7.1c: display BAND column in the Level-Report.

Input File:

- Level report and file sorted
- Gamma report and files sorted
- Radiation report and files sorted
- Cross-reference output
- Suppress warning messages

[Run](#) [\[result\]](#) [\[terminal\]](#) [\[clean\]](#)

x	184Au.ens.pandora	29,241	2018/10/17	15:23:09
x	184Au.ens.pandora.err0	301	2018/10/17	15:23:09
x	184Au.ens.pandora.gam	9,464	2018/10/17	15:23:09
x	184Au.ens.pandora.gle	7,336	2018/10/17	15:23:09
x	184Au.ens.pandora.inp	41	2018/10/17	15:23:09
x	184Au.ens.pandora.lev	3,368	2018/10/17	15:23:09
x	184Au.ens.pandora.rad	1,305	2018/10/17	15:23:09
x	184Au.ens.pandora.rep	226	2018/10/17	15:23:09
x	184Au.ens.pandora.tt	1,090	2018/10/17	15:23:09
x	184Au.ens.pandora.xrf	1,580	2018/10/17	15:23:09

# Wrapping program BARON

## BARON

Other evaluation tools/codes

**BARON** calculates model parameters for nuclear rotation bands /v1.0, 23-Jun-2014/

BARON - Code for evaluation and model description of nuclear rotation bands

by L.P.Kabina, S.S.Lisin, I.A.Mitropolsky, T.M.Tyukavina (PNPI, 2014-2016). See [Preprint.rus]

A:107 Z:71  
 NC:10 number of calculated levels  
 K:5 projection of spin or minimal spin

- BM (Bohr-Mottelson model)
- VMI (Variable Moment of Inertia model)
- Adiabatic limit  Absolute uncertainties
- Signature shift  Relative uncertainties

Rotational band { I E(I) [MeV] } type/paste/edit text below See [Preprint] Examples: [1] [2] [3]

9/2 1.05828  
 13/2 1.90006  
 17/2 2.74565

Note. Results are also presented in the files \*.htm and \*.zvd

Run [result] [terminal] [clean]

- ✗ 184Au.ens.baron.htm
- ✗ 184Au.ens.baron.inp
- ✗ 184Au.ens.baron.prn
- ✗ 184Au.ens.baron.temp
- ✗ 184Au.ens.baron.tt
- ✗ \*184Au.ens.baron.zvd

Welcome to BARON on Web

Running: 2018/10/17:15:31:54

107Lu Band with K=5

Spin	X=(I+1)-K <sup>2</sup>	E(Exp),MeV	E(Excl),MeV	E(BM),MeV	E(VMI),MeV	J
5/2	2.5			0.398	0.286	6.994
7/2	9.5			0.697	0.682	10.408
9/2	18.5	1.058		1.058	1.069	12.786
11/2	29.5			1.466	1.467	14.798
13/2	42.5	1.900		1.900	1.880	16.607
15/2	57.5			2.336	2.310	18.281
17/2	74.5	2.746		2.746	2.755	19.857
19/2	93.5			3.098	3.216	21.356
21/2	114.5			3.358	3.691	22.793
23/2	137.5			3.486	4.181	24.177

Band with K = 5/2

MODEL FOR BANDS WITH K > 1/2

BM polynomial parametrization

I	E(EXP), MeV	DE(EXP), MeV	E(CALC), MeV	(Exp-Ecalc)**2	((Exp-Ecalc)/DE)**2
9/2	1.0583	0.0010	1.0583	0.00	0.00
13/2	1.9001	0.0010	1.9001	0.00	0.00
17/2	2.7457	0.0010	2.7457	0.00	0.00

E0 [MeV] 0.287968E+00 0.299E-02

A [MeV] 0.444959E-01 0.153E-03

B [MeV] -0.164455E-03 0.160E-05

DELTA: 0.000 keV

VMI parametrization

I	E(EXP), MeV	DE(EXP), MeV	E(CALC), MeV	J, MeV-1	((Exp-Ecalc)/DE)**2
9/2	1.0583	0.0010	1.0686	12.786	10.36
13/2	1.9001	0.0010	1.8801	16.607	-19.97
17/2	2.7457	0.0010	2.7552	19.857	9.51

E0 [MeV] 0.464182E-01 0.305E-02

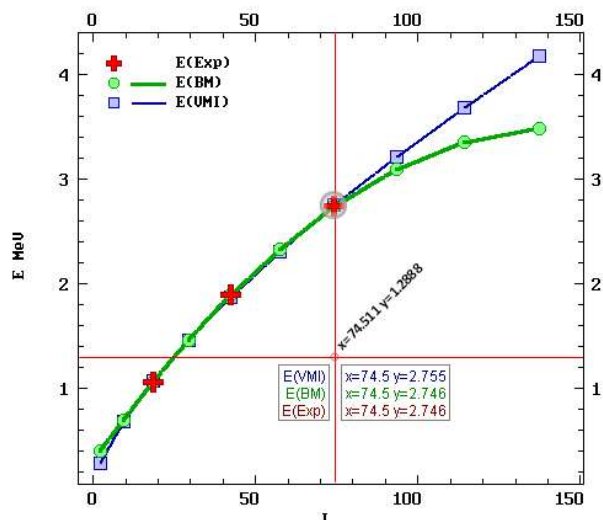
J0 [MeV-1] 0.222557E+01 0.713E-01

C [MeV+3] 0.535807E-02 0.216E-04

G 0.590657E-01 0.598E-02

DELTA: 14.100 keV

Created by BARON on Web 2018/10/17:15:31:54  
 107Lu Band with K=5



**NDSPUB**  
**result:**  
**PS, PDF**  
**(old code)**

**<sup>184</sup>Hg ε Decay 2005Sa40,1994Ib01,1978Ne10**

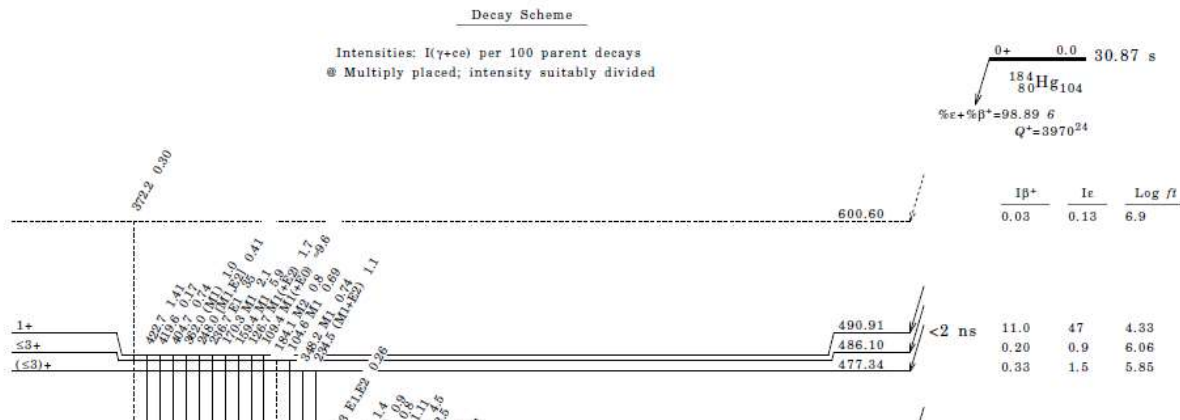
Parent <sup>184</sup>Hg: E=0.0; Jπ=0+; T<sub>1/2</sub>=30.87 s 26; Q(g.s.)=3970 24; %ε+%β<sup>+</sup> decay=98.89 6.  
Others: 1975Ho03, 1971Hu02, 1969Ha03 (observed 157γ and 237γ).  
2005Sa40: mass-separated <sup>184</sup>Hg source from fragmentation of molten Pb target by 600 MeV or 1 GeV protons; Ge(Li) and Si(Li) detectors, high resolution 180° magnetic spectrograph; measured Eγ, Iγ, E(ce), I(ce). Additional sources from <sup>148</sup>Sm(<sup>40</sup>Ar,X); planar Ge (FWHM=0.9 keV at 122 keV) for Eγ≤1 MeV; two HPGe detectors (FWHM ~2.3 keV at 1.3 MeV) for Eγ≤1.3 MeV; measured x-γ-t and γ-γ-t events which were sorted to provide prompt-, total- and delayed-coincidence bidimensional matrices (60 ns or 100 ns time windows). Supersedes 2003IbZZ; see also 1994Ib01.  
1994Ib01: mass separated source from bombardment of <sup>148</sup>Sm by 185 MeV <sup>40</sup>Ar ions; He-jet transport, iodine aerosol; two HPGe coaxial detectors, one HPGe x-ray detector; measured singles γ and x-ray spectra, γγ(t), x-γ(t). See also 1994RoZY.  
1975Ho03: β strength function deduced from total-absorption γ measurement.  
1978Ne10: Mass-separated source; measured Eγ, Iγ, γγ coin, γγ(t) (time resolution 6 ns I).

The decay scheme data from 200 which 1978Ne isomer, not a

CITATION:  
CORAL M. BAGLIN  
NDS 111,275 (2010)

<sup>184</sup>Au<sub>105</sub>  
79

E(level)†	Jπ
0.0	5+
68.46 4	2+
71.87 9	2+, 3+
86.50 8	(2, 3)+
129.13 8	(1, 2)+
146.50 12	4+
228.40 7	3-
242.87 10	(≤3)+
254.26 7	2-



REFERENCES

1969Ha03 P.G.Hansen, P.Hornshoj, H.L.Nielsen, K.Wilsky, H.Kugler, G.Astner, E.Hagebo, J.Hudis, A.Kjelberg, F.Munnich, P.Patzelt, M.Alpsten, G.Andersson, A.Appelqvist, B.Bengtsson, R.A.Naumann, O.B.Nielsen, E.Beck, R.Foucher, J.P.Husson, J.Jastrzebski, A.Johnson, J.Alstad, T.Jahnsen, A.C.Pappas, T.Tunaal, R.Henck, P.Siffert, G.Rudstam - Phys.Lett. 28B, 415 (1969); Erratum Phys.Lett. 28B, 663 (1969)

1970FiZZ Decay Characteristics of Short-Lived Radio-Nuclides Studied by On-Line Isotope Separator Techniques

1970FiZZ M.Finger, R.Foucher, J.P.Husson, J.Jastrzebski, A.Johnson, C.Sebille, R.Henck, J.M.Kuchly, R.Regal, P.Siffert, G.Astner, B.R.Erdal, E.Hagebo, A.Kjelberg, F.Munnich, P.Patzelt, E.Beck, H.Kugler - CERN-70-29 (1970)

1971Hu02 Main Decay Characteristics of Mercury Isotopes and their Daughter Products (182 < A < 192)

1971Hu02 H.Hubel, R.A.Naumann, E.H.Spejewski - Phys.Rev. C3, 756 (1971)

1975Ho03 Levels in <sup>184</sup>Pt, <sup>186</sup>Pt, and <sup>188</sup>Pt

1975Ho03 P.Hornshoj, B.R.Erdal, P.G.Hansen, B.Jonson, K.Aleklett, G.Nyman - Nucl.Phys. A239, 15 (1975)

1978Ne10 Beta-Strength Functions of Neutron-Deficient Isotopes in the Xenon and Mercury Regions

1978Ne10 W.G.Nettles, R.Beraud, J.D.Cole, J.H.Hamilton, A.V.Ramayya, H.Kawakami, E.H.Spejewski - J.Phys.(Paris) 39, 343 (1978)

1990Ed01 Etude de la Decroissance <sup>184</sup>Hg → <sup>184</sup>Au (T<sub>1/2</sub> = 30 s)

1990Ed01 R.Eder, I.Berkes, D.E.Brown, I.S.Grant, E.Hagn, P.Harding, R.Hassani, P.Herzog, B.Kastelein, A.Knipper, G.Marguier, M.Massaq, S.Ohya, H.Postma, J.Prinz, C.Richard-Serre, I.Romanski, K.Schlosser, N.J.Stone, W.Vanderpoorten, J.Vanhaverbeke, L.Vanneste, T.Woelfle, E.Zech, and the ISOLDE Collaboration - Hyperfine Interactions 59, 83 (1990)

1994Ib01 NICOLE: New on-line orientation facility at ISOLDE/CERN

1994Ib01 F.Ibrahim, P.Kilcher, B.Roussiere, J.Sauvage, J.Genevey, A.Gizon, A.Knipper, G.Marguier, D.Barneoud, R.Beraud, G.Cata-Danil, J.Blachot, I.Deloncle, R.Duffait, A.Emsallem, D.Hojman, A.J.Kreiner, F.Le Blanc, J.Libert, J.Oms - Z.Phys. A350, 9 (1994)

Spin and Parity of Isomeric and Ground States of the Doubly-Odd Nucleus <sup>184</sup>Au

From NNDC(BNL) Program ENSDF

# Demo and discussion

1. Examples of usage: demo (running programs + questions)
2. MyEnsdf on NDS, NNDC and Mirror-sites.  
Working without Internet.
3. Discussion:
  - experience of usage
  - further needs
  - self-cleaning (squeeze temporary data)
  - temporary and permanent areas
  - privileged users
  - continuing work (multiple entries)



# Part II.

## ENSDF Web viewers and editor

1. **Ensdf+** interpreted ENSDF (records-cards)  
+ **Dictionary** system
2. **Ensdf±** interactive tree-graph
3. **Ensdf++** web editor

# 1. ENSDF interpreted ensdf+

## Original ENSDF text

```
177LU L 457.980715 5/2+ 0.45 NS LE C
177LU CL T$From 1996Pe05. Other: T LT 0.8 NS (1971Ma45).
177LU G 336.335 2 3.8 4 E2
177LU2 G FL=121.6296
177LU CG M$EKC=0.032 11 and EL2C=0.006 4 (1996Pe05). Note, that values
177LU2CG overlap with these for the 336.33G depopulating the state at
177LU3CG 1488.7 KEV.
```

## ENSDF Records (text Cards)

```
177LU L 457.980715 5/2+ 0.45 NS LE C
177LU CL T$From 1996Pe05. Other: T LT 0.8 NS (1971Ma45).
-----
177LU G 336.335 2 3.8 4 E2
177LU2 G FL=121.6296
177LU CG M$EKC=0.032 11 and EL2C=0.006 4 (1996Pe05). Note, that values
177LU2CG overlap with these for the 336.33G depopulating the state at
177LU3CG 1488.7 KEV.
```

## Interpretation

```
#Nuclide: 177LU
#Dataset: 176LU(N,G) E=THERMAL
#Record 8/148 Level "L7:457.9807(15) 5/2+" Line:23/8[2] Child:2
Energy=457.9807(±.0015)keV Spin and parity:Jπ=5/2+ T½≤0.45·10-2sec
#T: From 1996Pe05. Other: T LT 0.8 NS (1971Ma45).

#Nuclide: 177LU
#Dataset: 176LU(N,G) E=THERMAL
#Record #8/148 Level [L] "L7:457.9807(15) 5/2+" nLines=2 nChild=2
#Record 1/2 Gamma "336.335(2) E2 3.8(4)" Line:2320[5]
E=336.335(±.002)keV
Init.Level:L7:457.9807(15) 5/2+
Expected:FL E=121.6457±0.0035keV [121.646(4)] $FL=121.6296 ΔE=-0.0161 [5σ] L1:121.6296(
9/2+ ΔE=-0.0161 [5σ]

.....help: [ 457.9807,0.0015,336.335,0.002,121.6296,9.0E-4 ]
Relative photon intensity:RI=3.8(4)
Multipolarity of transaction:M=E2
SFL=121.6296 //Final level energy

#M: EKC=0.032 11 and EL2C=0.006 4 (1996Pe05). Note, that values overlap with these
for the 336.33G depopulating the state at 1488.7 KEV.
```

Interpreted Data

Interpreted Comment

Link to NSR



Text from Dict.603

Indication of possible problem

FL in ENSDF file

Expected FL position

# 1. ENSDF interpreted ensdf+

Limited interactions: collapsing blocks of information, display options

Configuration

## Interpreted ENSDF: ensdf+

by V.Zerkin, IAEA-NDS, 2015-2017, ver-2017-10-25

[-] 177Lu.ens

[-] MASS 177 ^

[-] Nuclide 177LU ^

- + Dataset /ADOPTED/ 177LU [ADOPTED LEVELS, GAMMAS] ^
- Dataset /DECAY/ 177LU [177YB B- DECAY] ^

+ Ident		
+ Hist	H	Record(s): 1
+ GComm	C	Record(s): 2
+ GComm	CL	Record(s): 8
+ GComm	CG	Record(s): 1
+ Parent	P	Record(s): 1
+ Norm	N	Record(s): 1
+ PNorm	PN	Record(s): 1
+ FComm	CB	Record(s): 1
+ FComm	CG	Record(s): 1
+ Level	L	Record(s): 17
+ End		

- + Dataset /DECAY/ 177LU [177LU IT DECAY (160.44 D)] ^
- + Dataset /REACTION/ 177LU [176YB(3HE,D),(A,T)] ^
- + Dataset /REACTION/ 177LU [176LU(N,G) E=THERMAL] ^
- + Dataset /REACTION/ 177LU [176LU(D,P)] ^
- + Dataset /REACTION/ 177LU [178HF(T,A)] ^
- + Dataset /REACTION/ 177LU [(HI,XNG)] ^

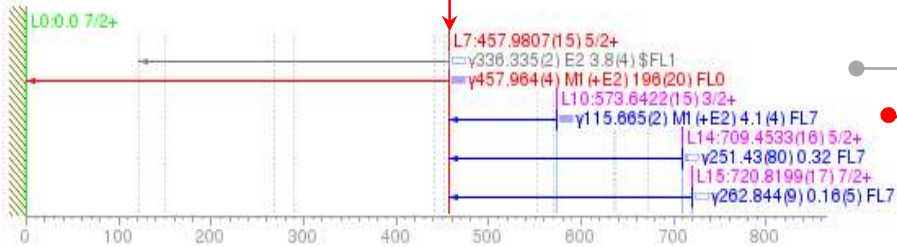
- 
- Show/Hide
- L-Fmt
  - G-Fmt
  - Interpret.
  - #Record
  - Hierarchy
  - G-plot
  - G-plot:ok
  - L-plot/V
  - L-plot/H
  - L<sub>n</sub> in/out

Display options

Total: Nuclides:1 Datasets:8 Records:1991 Cards:3585

# #L7/148 L7:457.9807(15) 5/2+

Level in/out  $\gamma$ -s #L7/148 Plot#160



Current level L7

FL is given

Display option

- Show/Hide
- L-Fmt
  - G-Fmt
  - Interpret.
  - #Record
  - Hierarchy
  - G-plot
  - G-plot:ok
  - L-plot/V
  - L-plot/H
  - L<sub>n</sub> in/out

```
177LU L 457.980715 5/2+ 0.45 NS LE C
177LU CL T $\phi$ From 1996Pe05. Other: T LT 0.8 NS (1971Ma45).
```

```
177LU G 336.335 2 3.8 4 E2
177LU2 G FL=121.6296
177LU CG M $\phi$ EKC=0.032 11 and EL2C=0.006 4 (1996Pe05). Note, that values
177LU2CG overlap with these for the 336.33G depopulating the state at
177LU3CG 1488.7 KEV.
```

```
177LU G 457.964 4 196 20 M1 (+E2)
177LU2 G FL=0.0
177LU CG M $\phi$ EKC=0.070 23, EL1C=0.009 3, and EM1C=0.0018 6 (1996Pe05).
177LU2CG Other: EKC=0.063, EL1C+EL2C=0.009, EMC=0.0002 and ENC=0.00009
177LU3CG (1971Ma45).
```

```
#Record 8/148 Level "L7:457.9807(15) 5/2+" Line:2318[2] Child:2
Energy=457.9807( $\pm$ .0015)keV Spin and parity:J $\pi$ =5/2+ T $_{1/2}$  $\leq$ 0.45-10-9sec
#T: From 1996Pe05[pdf]. Other: T LT 0.8 NS (1971Ma45[pdf]).
```

```
#Record 1/2 Gamma "336.335(2) E2 3.8(4)" Line:2320[5]
E=336.335( $\pm$ .002)keV
Init.Level:L7:457.9807(15) 5/2+
Expected:FL:E=121.6457 $\pm$ 0.0035keV [121.646(4)] $FL=121.6296  $\Delta$ E=-0.0161 [5 $\sigma$ ] L1:121.6296(9) 9/2+  $\Delta$ E=-0.0161 [5 $\sigma$ ]
```



FL1: [5 $\sigma$ ]

```
.....help1:[ 457.9807,0.0015,336.335,0.002,121.6296,9.0E-4 ]
Relative photon intensity:RI=3.8(4)
Multipolarity of transaction:M=E2
$FL=121.6296 //Final level energy
```

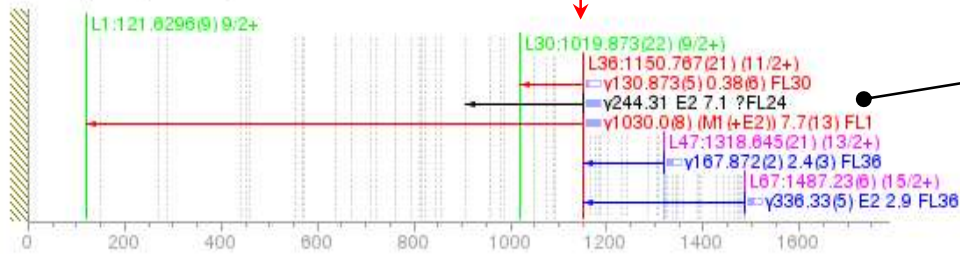
```
#M: EKC=0.032 11 and EL2C=0.006 4 (1996Pe05[pdf]). Note, that values overlap with
these for the 336.33G depopulating the state at 1488.7 KEV.
```

```
#Record 2/2 Gamma "457.964(4) M1(+E2) 196(20)" Line:2325[5]
E=457.964( $\pm$ .004)keV
Init.Level:L7:457.9807(15) 5/2+ Final.Level:L0:0.0 7/2+ [E7-E0=457.9807; E7-E0-E $\gamma$ =0.017<1% of L1 (1.216keV)]
Relative photon intensity:RI=196(20)
Multipolarity of transaction:M=M1(+E2)
$FL=0.0 //Final level energy
```

```
#M: EKC=0.070 23, EL1C=0.009 3, and EM1C=0.0018 6 (1996Pe05[pdf]). Other:
EKC=0.063, EL1C+EL2C=0.009, EMC=0.0002 and ENC=0.00009 (1971Ma45[pdf]).
```

# #L36/148 L36:1150.767(21) (11/2+)

Level in/out  $\gamma$ -s #L36/148 Plot#189



Current level L36

FL is not given

177LU	L	1150.76721	(11/2+)	t
177LU	G	130.873	5 0.38 6	Y
177LU	G	244.31	7.1 E2	P
177LU	G	1030.0	8 7.7 13 (M1(+E2))	P

177LU CG M<sub>6</sub>EKC=0.076 21, EL1C=0.017 6, EL2C=0.009 3, EL3C=0.007 3, and EM2C=0.0042 20 (1996Pe05).  
 177LU3CG Other: EKC=0.08 and EMC=0.006 (1971Ma45).  
 177LU4CG Note, that values overlap with these for the 244.332G depopulating the 1201.649 KEV level.  
 177LU5CG the 1201.649 KEV level.

177LU CG M<sub>6</sub>EKC=0.0092 15 (1971Ma45). Note, that the value overlaps with that 177LU2CG for the 1030.021G depopulating the 1470.992 KEV level.

#Record 37/148 Level "L36:1150.767(21) (11/2+)" Line:2559 Child:3  
 Energy=1150.767(±.021)keV Spin and parity:J<sup>π</sup>=(11/2+)

#Record 1/3 Gamma "130.873(5) 0.38(6)" Line:2560  
 E=130.873(±.005)keV  
 Init.Level:L36:1150.767(21) (11/2+) Final.Level:L30:1019.873(22) (9/2+) [E36-E30=130.894; E36-E30-E<sub>γ</sub>=0.021≅0.5σ]  
 Relative photon intensity:RI=0.38(6)

#Record 2/3 Gamma "244.31 E2 7.1" Line:2561[6]  
 E=244.31keV  
 Init.Level:L36:1150.767(21) (11/2+)  
 Expected.FL:E=906.457±0.021keV [906.457(21)] Nearest: L24:906.74(5) 7/2+ ΔE=0.283 [14σ]

.....help1:[ 1150.767,0.021,244.31,0.0,906.74,0.05 ]  
 Relative photon intensity:RI=7.1  
 Multipolarity of transaction:M=E2

#M: EKC=0.076 21, EL1C=0.017 6, EL2C=0.009 3, EL3C=0.007 3, and EM2C=0.0042 20 (1996Pe05[[pdf](#)]). Other: EKC=0.08 and EMC=0.006 (1971Ma45[[pdf](#)]). Note, that values overlap with these for the 244.332G depopulating the 1201.649 KEV level.

#Record 3/3 Gamma "1030.0(8) (M1(+E2)) 7.7(13)" Line:2567[3]  
 E=1030.0(±.8)keV  
 Init.Level:L36:1150.767(21) (11/2+) Final.Level:L1:121.6296(9) 9/2+ [E36-E1=1029.1375; E36-E1-E<sub>γ</sub>=-0.863≅1.5σ]  
 Relative photon intensity:RI=7.7(13)  
 Multipolarity of transaction:M=(M1(+E2))

#M: EKC=0.0092 15 (1971Ma45[[pdf](#)]). Note, that the value overlaps with that for the 1030.021G depopulating the 1470.992 KEV level.

Nearest L24: [14σ]



# Dictionary system

## EXFOR-CINDA Dictionaries

- 1 System identifiers
- 2 Information identifiers
- 3 Institutes
- 4 Reference types
- 5 Journals
- 6 Reports
- 7 Conferences
- 8 Elements
- 15 History
- 16 Status
- 17 Related reference types
- 18 Facilities
- 19 Incident sources
- 20 Additional results
- 21 Methods
- 22 Detectors
- 23 Analyses
- 24 Data headings
- 25 Data units
- 26 Unit families
- 30 Processes (REACTION SF 3)
- 31 Branches (REACTION SF 5)
- 32 Parameters (REACTION SF 6)
- 33 Particles
- 34 Modifiers (REACTION SF 8)
- 35 Data types (REACTION SF 9)
- 37 Results
- 43 NLIB for evaluated libraries
- 45 New CINDA quantities
- 47 Old / New CINDA quantities
- 48 Alphabetic energy values
- 52 CINDA readers
- 113 Web quantities
- 144 Data libraries
- 207 Books
- 209 Chemical compounds
- 213 Reaction types
- 227 Nuclides and nat.isot.mixtures
- 235 Work types
- 236 Quantities (REACTION SF 5-8)

## EXFOR-CINDA Dictionaries

- Officially maintained
- Officially used in checking codes before EXFOR file accepted
- Used in ENDF database
- Used in interpreted files (X4+, X4±, XML, etc.)
- Used in Editors
- Used in Web “Help + Input” system(s)

## ENDF-EXFOR Dictionaries

- Unofficial
- Used in ENDF database
- Used in Web “Help + Input” system
- Used in EXFOR to C4 and C5 conversion (Web plotting)

700 NSUB used in ENDF database  
701 MF used in ENDF database and their correspondence to EXFOR Web-Quantity  
702 MT used in ENDF database and their correspondence to EXFOR reactions  
703 LR Flag. Break-up  
714 EXFOR reaction - MF/MT equivalence table (for X4TOC4)  
715 EXFOR {SF2-SF7} - ENDF {MF,MT,LR} equivalence (X4TOC5)

## ENSDF Dictionaries

- Extension of EXFOR-CINDA-ENDF Dictionary system
- Used in Ensdf+ and Ensdf± for interpretation
- Used in Ensdf Web editor in “Help + input” system and options [demo]

601 Types of ENSDF cards  
602 First card in ENSDF Record  
603 Allowed Data Types on Continuation Records  
604 Allowed Operations  
605 Allowed Record-types in Datasets

# ENSDF dictionaries

- ❑ Extension of EXFOR-CINDA-ENDF Dictionary system
- ❑ Used in Ensdf+ and Ensdf± for interpretation
- ❑ Used in Ensdf Web editor in “Help + input” system and options [demo]

The screenshot shows a web browser window titled 'ensdf++' with the URL 'https://www-nds.iaea.org/exfor/servlet/EnsdfView?db=ens4&op=e...'. The browser's address bar and navigation icons are visible. Below the browser window, a tree view displays the structure of a dataset '184Au.ens'. The tree includes 'MASS 184', 'Nuclide 184AU', and 'Dataset /DECAY/ 184AU'. Under the dataset, there are several record types: 'Record Ident', 'Records H /1/ Hist', 'Records C /1/ GComm nRecords=8', 'Records CE /1/ GComm', 'Records CG /1/ GComm nRecords=4', 'Records CL /1/ GComm nRecords=3', 'Records P /2/ Parent', 'Records N /2/ Norm', 'Records PN /2/ PNorm', 'Records G /3/ UnplacedRadiation-G nRecords', 'Records L /4/ Level nRecords=20', and 'Record End'. A 'Help' menu is open, showing options like 'Editor "How-to"', 'ENSDF Manual', 'ENSDF Manual (Rus.)', 'Lexfor', 'Dictionaries', and 'About'. The 'Dictionaries' option is highlighted with a red box, and a list of dictionary entries is shown to its right. The entries include 'Dict-2. Keywords', 'Dict-3. Institutes', 'Dict-5. Journals', 'Dict-6. Reports', 'Dict-7. Conferences', 'Dict-18. Facility', 'Dict-25. Data units', 'Dict-601. Types of ENSDF Records', 'Dict-602. Fields in the 1-st card of ENSDF Records', 'Dict-603. Parameters in Continuation Records', 'Dict-604. Allowed Operations', and 'Dict-605. Allowed Record-types for Datasets'. The bottom of the page contains a footer with the text: 'Page generated: 2018-11-30,11:56:22 by Ensdf-iTree on localhost [fwd:www-nds.iaea.org] Project: "Multi-platform EXFOR-CINDA-ENDF", V.Zerkin,IAEA-NDS, 1999-2018 Request from: ::1 [fwd:161.5.6.200]'. The URL 'https://www-nds.iaea.org/exfor/servlet/EnsdfView?db=ens4&op=edit&reqd=ENS4tmp1&File=184Au.ens&user=Viktor#' is also visible at the bottom.

**EXFOR-CINDA  
Dictionaries  
001-599**

**ENSDF  
Dictionaries  
600-699**

**ENDF  
Dictionaries  
700-799**



# ENSDF Dictionaries. Examples

## DICT\_ARC\_NEW.601

```

# Dictionary: types of ENSDF cards
# ##### CARD-Type
# | # Part of Dataset: 12345 (see manual)
# | ### Sorting order
# | ||| # Flag "allowed number of records" having values:
# | ||| | +: must be present (n=1)
# | ||| | 1: if present - only one record (n=0 or n=1)
# | ||| | n: none, one or many (n>=0)
# | ||| | ### Columns: 7,8,9
# | ||| | |||
# | ||| | ||| ###...Expansion...###
# | ||| | ||| |||||||... . . . . .
TRA 201605 Ident 000 + ' ' Identification
TRA 201605 Hist 101 n ' H ' History
TRA 201605 Xref 102 n ' X ' Cross-Reference
TRA 201605 GComm 103 n ' C ' General Comment
TRA 201605 GComm 104 n ' CN ' General Comment N
TRA 201605 GComm 105 n ' CP ' General Comment P
TRA 201605 GComm 106 n ' CQ ' General Comment Q
TRA 201605 GComm 107 n ' CL ' General Comment L
TRA 201605 GComm 108 n ' CG ' General Comment G
TRA 201605 GComm 109 n ' CB ' General Comment B
TRA 201605 GComm 110 n ' CE ' General Comment E
TRA 201605 GComm 111 n ' CA ' General Comment A
TRA 201605 GComm 112 n ' CD ' General Comment D
TRA 201605 Q-Value 201 1 ' Q ' Q-value
TRA 201605 Parent 202 n ' P ' Parent
TRA 201605 Norm 203 n ' N ' Normalization
TRA 201605 P-Norm 204 n ' PN ' Production Normalization
TRA 201605 Gamma 301 n ' G ' UnplacedRadiation-Gamma
TRA 201605 Beta 302 n ' B ' UnplacedRadiation-Beta-
TRA 201605 Alpha 303 n ' A ' UnplacedRadiation-Alpha
TRA 201605 EC 304 n ' E ' UnplacedRadiation-EC
TRA 201605 Level 401 n ' L ' Level
TRA 201605 Gamma 501 n ' G ' Gamma
TRA 201605 Beta 502 n ' B ' Beta-
TRA 201605 Alpha 503 n ' A ' Alpha
TRA 201605 EC 504 n ' E ' EC
TRA 201605 Part 505 n ' N ' Particle Neutron
TRA 201605 Part 506 n ' P ' Particle Proton
TRA 201605 Part 507 n ' D ' Particle Deuterium
TRA 201605 Part 508 n ' T ' Particle Tritium
TRA 201605 D-Part 509 n ' DN ' Delayed-Particle Neutron
TRA 201605 D-Part 510 n ' DP ' Delayed-Particle Proton
TRA 201605 D-Part 511 n ' DD ' Delayed-Particle Deuterium
TRA 201605 D-Part 512 n ' DT ' Delayed-Particle Tritium
TRA 201605 Ref ' R ' Reference
TRA 201605 End 999 + ' ' End of dataset

```

## DICT\_ARC\_NEW.604

```

# Dictionary: Allowed Operations
# Allowed to be used:
# # 1: in the first card
# |# X: in continuous records
# ||
TRA 201605 X = equal
TRA 201605 X < less than
TRA 201605 X > greater than
TRA 201605 X <= less than or equal
TRA 201605 X >= greater than or equal
TRA 201605 X EQ equal
TRA 201605 1X AP approximately equal
TRA 201605 1X LT less than
TRA 201605 1X LE less than or equal
TRA 201605 1X GT greater than
TRA 201605 1X GE greater than or equal
TRA 201605 1X CA Calculated
TRA 201605 1X SY from systematics

```

# ENSDF Dictionaries. Examples

## DICT\_ARC\_NEW.603

```

TRA          Dictionary: Allowed Data Types on Continuation Records
TRA          =====The Gamma Record=====
TRA 201605 G   A2      Angular correlation (distribution) coefficient
TRA 201605 G   A4      Angular correlation (distribution) coefficient
TRA 201605 G   A6      Angular correlation (distribution) coefficient
TRA 201605 G   BE1     Reduced electric transition probability (downward) given in units of e^2*(barns)^L, where L=1
TRA 201605 G   BE2     Reduced electric transition probability (downward) given in units of e^2*(barns)^L, where L=2
TRA 201605 G   BE3     Reduced electric transition probability (downward) given in units of e^2*(barns)^L, where L=3
TRA 201605 G   BE1W    Reduced electric transition probability (downward) given in single-particle (Weisskopf) units
TRA 201605 G   BE2W    Reduced electric transition probability (downward) given in single-particle (Weisskopf) units
TRA 201605 G   BE3W    Reduced electric transition probability (downward) given in single-particle (Weisskopf) units
TRA 201605 G   BM1     Reduced magnetic transition probability (downward) given in units of Mu(N)^2*(barns)^(L-1), where L=1
TRA 201605 G   BM2     Reduced magnetic transition probability (downward) given in units of Mu(N)^2*(barns)^(L-1), where L=2
TRA 201605 G   BM3     Reduced magnetic transition probability (downward) given in units of Mu(N)^2*(barns)^(L-1), where L=3
TRA 201605 G   BM1W    Reduced magnetic transition probability (downward) given in single-particle (Weisskopf) units
TRA 201605 G   BM2W    Reduced magnetic transition probability (downward) given in single-particle (Weisskopf) units
TRA 201605 G   BM3W    Reduced magnetic transition probability (downward) given in single-particle (Weisskopf) units
TRA 201605 G   ECC     Experimental total conversion coefficient
TRA 201605 G   EKC     Experimental K- conversion coefficient
TRA 201612 G   EKC+ELC  Sum of experimental conversion coefficients for K and L shells
TRA 201612 G   EKC/ELC  Ratio of experimental conversion coefficients of K shell to L shells
TRA 201612 G   EKC/ELC+ Ratio of experimental conversion coefficients of K shell to sum L and outer shells
. . . . .
TRA          =====The Level Record=====
TRA 201605 L   %A      Percent of alpha decay
TRA 201605 L   %B+     Percent decay of the level by beta+
TRA 201605 L   %B-     Percent of beta- decay
TRA 201605 L   %B-A    Percent of beta-delayed alpha emission
TRA 201605 L   %B-N    Percent |b- delayed neutron emission
TRA 201605 L   %EC     Percent of e-capture decay of the level
TRA 201605 L   %EC+%B+ Percent decay of the level by sum of ec and beta+
TRA 201605 L   %IT     Percent decay of isomeric transition
TRA 201605 L   %N      Percent of neutron decay; not N as Nitrogen because for 134Sb it would be impossible
TRA 201605 L   %P      Percent of proton decay
TRA 201605 L   %SF     Percent of decay by spontaneous fission
TRA 201605 L   B2      2^L pole (L=2) nuclear deformation parameter
TRA 201605 L   B3      2^L pole (L=3) nuclear deformation parameter
TRA 201605 L   BE1     Reduced electric transition probability (upward) given in units of e^2*(barns)^L, where L=1
TRA          (for the transition from the below lying state to this level)
TRA 201605 L   BE2     Reduced electric transition probability (upward) given in units of e^2*(barns)^L, where L=2
TRA          (for the transition from the below lying state to this level)
TRA 201605 L   CONF    Nuclear configuration of the level
TRA 201605 L   FLAG    Additional footnote symbols
TRA 201605 L   G       g-factor of the level
TRA 201605 L   ION     Ionization State (used in Ionized Atom Decay)
TRA 201605 L   ISPIN   Isobaric spin
TRA 201605 L   ISPINZ  Z-component of Isobaric spin
TRA 201605 L   MOME2   Electric moment: quadrupole
TRA 201605 L   MOMM1  Magnetic moment: dipole

```

# Dictionary. Examples

## DICT\_ARC\_NEW.605

```

# Allowed Records Types for Datasets
# # 1: one
# # +: one or many
# # *: 0, one, many
# # $: 0, one
# | ### ### Type of record
# | ||| ||| ##### DSID
# | ||| ||| |
TRA 201803 + [ H ] Comments
TRA 201803 * [ C ] Comments

TRA 201803 + [ H ] Adopted Levels, Gammas
TRA 201803 1 [ Q ] Adopted Levels, Gammas
TRA 201803 * [ CQ ] Adopted Levels, Gammas
TRA 201803 * [ X# ] Adopted Levels, Gammas
TRA 201803 * [ C ] Adopted Levels, Gammas
TRA 201803 * [ CL ] Adopted Levels, Gammas
TRA 201803 * [ CG ] Adopted Levels, Gammas
TRA 201803 $ [ PN ] Adopted Levels, Gammas
TRA 201803 * [ G ] Adopted Levels, Gammas
TRA 201803 * [ L ] Adopted Levels, Gammas
TRA 201803 * [ L ] [ G ] Adopted Levels, Gammas

TRA 201803 + [ H ] Adopted Levels
TRA 201803 1 [ Q ] Adopted Levels
TRA 201803 * [ CQ ] Adopted Levels
TRA 201803 * [ X# ] Adopted Levels
TRA 201803 * [ C ] Adopted Levels
TRA 201803 * [ CL ] Adopted Levels
TRA 201803 * [ L ] Adopted Levels

TRA 201803 + [ H ] B- Decay
TRA 201803 * [ C ] B- Decay
TRA 201803 * [ CL ] B- Decay
TRA 201803 * [ CG ] B- Decay
TRA 201803 * [ CB ] B- Decay
TRA 201803 + [ P# ] B- Decay
TRA 201803 + [ N# ] B- Decay
TRA 201803 * [ PN# ] B- Decay
TRA 201803 * [ G ] B- Decay
TRA 201803 * [ B ] B- Decay
TRA 201803 * [ L ] B- Decay
TRA 201803 * [ L ] [ G ] B- Decay
TRA 201803 * [ L ] [ B ] B- Decay

```

## DICT\_ARC\_NEW.605 cont.

```

TRA 201803 + [ H ] B+ Decay
TRA 201803 * [ C ] B+ Decay
TRA 201803 * [ CL ] B+ Decay
TRA 201803 * [ CG ] B+ Decay
TRA 201803 * [ CE ] B+ Decay
TRA 201803 + [ P# ] B+ Decay
TRA 201803 + [ N# ] B+ Decay
TRA 201803 * [ PN# ] B+ Decay
TRA 201803 * [ G ] B+ Decay
TRA 201803 * [ E ] B+ Decay
TRA 201803 * [ L ] B+ Decay
TRA 201803 * [ L ] [ G ] B+ Decay
TRA 201803 * [ L ] [ E ] B+ Decay

TRA 201803 + [ H ] EC Decay
TRA 201803 * [ C ] EC Decay
TRA 201803 * [ CL ] EC Decay
TRA 201803 * [ CG ] EC Decay
TRA 201803 * [ CE ] EC Decay
TRA 201803 + [ P# ] EC Decay
TRA 201803 + [ N# ] EC Decay
TRA 201803 * [ PN# ] EC Decay
TRA 201803 * [ G ] EC Decay
TRA 201803 * [ E ] EC Decay
TRA 201803 * [ L ] EC Decay
TRA 201803 * [ L ] [ G ] EC Decay
TRA 201803 * [ L ] [ E ] EC Decay

TRA 201803 + [ H ] A Decay
TRA 201803 * [ C ] A Decay
TRA 201803 * [ CL ] A Decay
TRA 201803 * [ CG ] A Decay
TRA 201803 * [ CA ] A Decay
TRA 201803 + [ P# ] A Decay
TRA 201803 + [ N# ] A Decay
TRA 201803 * [ PN# ] A Decay
TRA 201803 * [ G ] A Decay
TRA 201803 * [ A ] A Decay
TRA 201803 * [ L ] A Decay
TRA 201803 * [ L ] [ G ] A Decay
TRA 201803 * [ L ] [ A ] A Decay

```

## DICT\_ARC\_NEW.605 cont.

```

TRA 201803 + [ H ] B-3N Decay
TRA 201803 * [ C ] B-3N Decay
TRA 201803 * [ CL ] B-3N Decay
TRA 201803 * [ CG ] B-3N Decay
TRA 201803 * [ CB ] B-3N Decay
TRA 201803 * [ CN ] B-3N Decay
TRA 201803 + [ P# ] B-3N Decay
TRA 201803 + [ N# ] B-3N Decay
TRA 201803 * [ PN# ] B-3N Decay
TRA 201803 * [ G ] B-3N Decay
TRA 201803 * [ DN ] B-3N Decay
TRA 201803 * [ L ] B-3N Decay
TRA 201803 * [ L ] [ G ] B-3N Decay
TRA 201803 * [ L ] [ DN ] B-3N Decay

TRA 201803 + [ H ] ECA Decay
TRA 201803 * [ C ] ECA Decay
TRA 201803 * [ CL ] ECA Decay
TRA 201803 * [ CG ] ECA Decay
TRA 201803 * [ CE ] ECA Decay
TRA 201803 * [ CDA ] ECA Decay
TRA 201803 + [ P# ] ECA Decay
TRA 201803 + [ N# ] ECA Decay
TRA 201803 * [ PN# ] ECA Decay
TRA 201803 * [ G ] ECA Decay
TRA 201803 * [ DA ] ECA Decay
TRA 201803 * [ L ] ECA Decay
TRA 201803 * [ L ] [ G ] ECA Decay
TRA 201803 * [ L ] [ DA ] ECA Decay

TRA 201803 + [ H ] ECP Decay
TRA 201803 * [ C ] ECP Decay
TRA 201803 * [ CL ] ECP Decay
TRA 201803 * [ CG ] ECP Decay
TRA 201803 * [ CE ] ECP Decay
TRA 201803 * [ CDP ] ECP Decay
TRA 201803 + [ P# ] ECP Decay
TRA 201803 + [ N# ] ECP Decay
TRA 201803 * [ PN# ] ECP Decay
TRA 201803 * [ G ] ECP Decay
TRA 201803 * [ DP ] ECP Decay
TRA 201803 * [ L ] ECP Decay
TRA 201803 * [ L ] [ G ] ECP Decay
TRA 201803 * [ L ] [ DP ] ECP Decay

```

# ENSDF Dictionaries: using in interpretation

ensdf++

https://www-nds.iaea.org/exfor/servlet/EnsdfView?db=ens4&op=edit&reqd=ENS4t...

File Edit View History Tools Help About // 184Au.ens

Level #9/20 "254.26 (7) 2-" Lines:7 Comments:2 EC & radiations:3

Data Lines:1

Energy=254.26(±0.07)keV Spin and parity:Jπ=2-

Comments:2

EC and Radiations:3

Gamma #1/3 "25.86 (6) M1+E2" Lines:5 Comments:1

Data Lines:3

E=25.86(±0.06)keV

Init.Level:L8:254.26(7) 2- Final.Level:L6:228.40(7) 3- [E8-E6=25.86; E8-E6-Eγ=0±0.1σ]

228.4±0.0922

γ:25.86±0.06

Init:254.26±0.07

Final:228.4±0.07

227.5 228 228.5 229

254 254.5

Relative photon intensity:RI=19(2)

Multipolarity of transition:M=M1+E2

Mixing Ratio:MR=0.041(+0.011-.015)

Total conversion coeff.:CC=74(±4)

SLC=57.3 //theoretical L-shell conversion coefficient

SMC=13.47 //Conversion coefficient for M shell; calculated

SNC=3.9619 //Summed conversion coefficients of N-, O-, P-, Q- and R-shells

SNC=3.321 //cc for N shell

SOC=0.603 //cc for O shell

SPC=0.03806 //cc for P shell

Comments:1

Comment-1 Lines:2

M α(L1)exp=52 {I10}, α(L2)exp=6.3 {I10}, L2:L3=1.00:0.36 {I10}, (M1+M2):M3=1.00:0.04 {I1} (2005Sa40).

Gamma #2/3 "182.5 (2) E1" Lines:4 Comments:1

Gamma #3/3 "185.8 (1) (E1)" Lines:4 Comments:1

Expansion from Dict.603

# ENSDF Dictionaries: Help + input

The screenshot displays the ENSDF Web Editor interface. The main window shows the 'Add Dataset' form for Nuclide 184AU. The form includes fields for Dataset ID (DSID), Reference (DSREF), Publication (PUB), Date (DATE), and Record HIST (History) information such as Evaluator (AUT), Citation (CIT), and Cutoff date (CUT). A dropdown menu for 'Select Dataset Type' is open, showing options like COMMENTS, ADOPTED LEVELS, GAMMAS, and various decay types (B-, B+, EC, EC+B+, B+EC, A, B-N, B-2N, B-3N, EC). A table on the right side of the interface lists record types and their expansions.

**Add Dataset //ver-2018-03-30**  
Nuclide: **184AU**  
Datasets //Existing Datasets

#XRef	DSID	nLevels	Type
[0]	184HG EC DECAY	20	DECAY

Nuclide: "184AU" Operation: "Add dataset"

**Standard One-Card Record**

Record IDENT (Identifier)

Dataset ID DSID \* EC DECAY  
Reference DSREF \*  
Publication PUB \* 11NDS  
Date DATE \* 201811

Record HIST (History)

Evaluator AUT \* Viktor  
Citation CIT \* NDS 98, 801 (2003)  
Cutoff date CUT \* 2018-11-30

Record Q-VALUE (for ADOPTED only)

Max.en. of  $\beta$ -decay Q- \* [ ] DQB  
Neutron separ.en. SN \* [ ] DSN  
Proton separ.en. SP \* [ ] DSP  
En. of  $\alpha$ -decay QA \* [ ] DQA  
Q-Reference QREF \* [ ]

**Select Dataset Type**

1) COMMENTS	Comments
2) ADOPTED LEVELS, GAMMAS	Adopted Levels, Gammas
3) ADOPTED LEVELS	Adopted Levels
4) [nuclide] B- DECAY	B- Decay <b>Don't forget Nuclide in front!</b>
5) B+ DECAY	B+ Decay
6) EC DECAY	EC Decay
7) EC+B+ DECAY	EC+B+ Decay
8) B+EC DECAY	B+EC Decay
9) A DECAY	A Decay
10) B-N DECAY	B-N Decay
11) B-2N DECAY	B-2N Decay
12) B-3N DECAY	B-3N Decay
13) EC+DECAY	EC+Decay

# Act	#Rec	Part	Code	Expansion
1	1	1	H	History
2		1	X	Cross-Reference
3	2	1	C	General Comment
4		1	CN	General Comment N
5		1	CP	General Comment P
6		1	CQ	General Comment Q
7	13	1	CL	General Comment L
8		1	CG	General Comment G
9		1	CB	General Comment B
10		1	CE	General Comment E
11		1	CA	General Comment A
12		1	CD	General Comment D
13		2	Q	Q-value
14		2	P	Parent
15		2	N	Normalization
16		2	PN	Production Normalization
17		3	G	UnplacedRadiation-Gamma
18		3	B	UnplacedRadiation-Beta
19		3	A	UnplacedRadiation-Alpha
20		3	E	UnplacedRadiation-EC
21	36	4	L	Level

Page generated: 2018-11-30,11:5  
Project: "Multi-platform EXFOR-CI  
Request from: ::1 [fwd:161.5.6.20]

## 3. ENSDF Web editor project /2015-2018/

- ❑ Recommended as pilot project on the meeting “Improvement of Analysis Codes for Nuclear Structure and Decay Data Evaluations”, IAEA, 5-8 October 2015
- ❑ ENSDF file is presented as hierarchical document (ensdf±) - interactive tree (graph) with possibility to open/collapse branches and with commands associated with the nodes
- ❑ The Editor is called from MyEnsdf Web tool for ENSDF evaluators
- ❑ User can remove/add/edit nodes
- ❑ Editing is implemented via pop-up windows and internal frames
- ❑ User can run checking and utility codes on edited file, send it to MyEnsdf to run any other programs there
- ❑ “Integrated editing” to perform specific operations is foreseen for automation evaluators’ work
- ❑ Sharing AJAX technology software infrastructure with EXFOR Web Editor

# ENSDF Web editor: main attractions

1. Web based (no installation, only Web browser needed)
2. Platform independent
3. Integrated with ENSDF codes, MyEnsdf, NSR database and Web
4. Can be useful for beginners: showing structure of ENSDF file, offering online help, preventing input errors
5. Can be useful for experienced evaluators by implementing specific (integral or time consuming) tasks

# ENSDF Web editor ensdf++

File Edit View History **Tools** Help About // 184Au.ens

- FMTCHK
- chk\_ENSDF
- PREPRO
- XPQCHK
- Call MyEnsdf
- Send to MyEnsdf

184Au.ens

- MASS 184
- Nuclide 184AU
- Dataset /DECAY/
- Record Ident
- Records H /1/ Misc
- Records C /1/ GComm nRecords=8
- Records CL /1/ GComm nRecords=3
- Records P /2/ Parent
- Records N /2/ Norm
- Records PN /2/ PNorm
- Records G /3/ UnplacedRadiation-G nRecords=12
- Records L /4/ Level nRecords=20
  - Level #1/20 "0.0 5+ T<sub>1/2</sub>=20.6 s" Lines:2 Comments:1
  - Level #2/20 "68.46 (4) 2+ T<sub>1/2</sub>=47.6 s" Lines:2 Comments:1 EC & radiations:1
  - Level #3/20 "71.87 (9) 2+,3+" EC & radiations:1
    - Data Lines:1
      - Energy=71.87(±.09)keV Spin and parity:J $\pi$ =2+,3+
    - Comments:0
    - EC and radiations:1
      - Edit record Edit data Remove record Edt EdtCards
    - Gamma #1/1 "3.4 (2) (M1)" Lines:4 Comments:2
      - Data Lines:1
        - Energy=3.4(±.2)keV
        - init Level: L<sub>2</sub>:Energy=71.87(±.09)keV J $\pi$ =2+,3+ final Level: L<sub>1</sub>:Energy=68.46(±.04)keV J $\pi$ =2+ [E<sub>2</sub>-E<sub>1</sub>=3.41;
      - 68.47±0.21932  $\gamma$ :3.4±0.2 Init:71.87±0.09
      - Final:68.46±0.04
      - Multipolarity of transaction:M=(M1)
      - Relative total transition intensity:TI=1.55E3(16)
      - Comments:2

Run FMTCHK

Send ENSDF to MyEnsdf to run other codes

Commands on a node extend iTree ENSDF Viewer

## Light ENSDF Editor

V.Zerkin, IAEA-NDS, 2015-2017, ver-2017-05-15  
ENSDF file is presented as an interactive tree with possibility to hide/show/edit information



# Editing in pop-up window

The image shows the ENSDF database interface with a tree view on the left and a pop-up editing window on the right. Three yellow callout boxes with red arrows indicate the editing workflow:

- 1) Command**: Points to the "Edit data" button in the tree view.
- 2) Edit data**: Points to the "Edit data" field in the pop-up window.
- 3) Save data**: Points to the "[Save]" button at the bottom of the pop-up window.

The pop-up window displays the following information:

Tree-path: ...Edit Gamma Line...  
 Initial Gamma Record (interpreted)  
 Initial Level: Energy=228.40(±.07)keV Spin and parity: Jπ=3- T½=69(±6)·10<sup>-9</sup>sec  
 Dataset: "184AU" Operation: "Edit data" "Gamma" Energy=141.8 (keV)

**Standard One-Card Record Data**

quantity	op.	value ± uncertainty
Energy (keV)	E =	141.8 1 DE
Relative photon intensity	RI =	32 4 DRI
Multipolarity of transition	M =	(E1+M2)
Mixing ratio, δ	MR =	0.39 DMR
Total conversion coeff	CC =	2.42 DCC
Relative total transition intensity	TI =	DTI
Comment Flag	F =	
Coincidence	C =	
Uncertain placement in the level scheme	Q =	

**Continuation Records**

quantity	op.	value [± err.] [op2. value]	reference	initial-text
1) KC	? = ?	1.725 25		KC=1.725 25
2) LC	? = ?	0.526 8		LC=0.526 8
3) MC	? = ?	0.1314 19		MC=0.1314 19
4) NC+	? = ?	0.0394 6		NC+=0.0394 6
5) NC	? = ?	0.0331 5		NC=0.0331 5
6) OC	? = ?	0.00595 9		OC=0.00595 9
7) PC	? = ?	0.000346 5		PC=0.000346 5

Add data to continous records: [+] [-]  
 [Save] ENSDF format: ↓ ↓ ↑ [Reset]

The bottom of the pop-up window shows the resulting ENSDF format text:

```

NUCID# 184AU G 141.8 1 32 4 (E1+M2) 0.39 2.42
184AUS G KC=1.725 25$LC=0.526 8$MC=0.1314 19$NC+=0.0394 6
184AUS G NC=0.0331 5$OC=0.00595 9$PC=0.000346 5
  
```



# Integrated editing

File Edit View History Tools Help About // 177Lu.ens

177Lu.ens

- MASS 177
  - Add dataset
  - Remove nuclide
  - Parallel view
- Nuclide 177LU
  - Dataset /ADOPTED/ 177LU [ADOPTED LEVELS, GAMMAS]
  - Dataset /DECAY/ 177LU [177YB B- DECAY]
  - Dataset /DECAY/ 177LU [177LU IT DECAY (160.44 D)]
  - Dataset /REACTION/ 177LU [176YB(3HE,D),(A,T)]
  - Dataset /REACTION/ 177LU [176LU(N,G) E=THERMAL]
  - Dataset /REACTION/ 177LU [176LU(D,P)]
  - Dataset /REACTION/ 177LU [178HF(T,A)]
  - Dataset /REACTION/ 177LU [(HI,XNG)]

**Parallel view of ENSDF datasets**  
Nuclide: **177LU**

Datasets // Select Datasets for further operations

#XRef	DSID	nLevels	Lev-Energy	n $\gamma$ 's	Type
(1)	ADOPTED LEVELS, GAMMAS	204	121 - 2497	331	ADOPTED
(2) B	177YB B- DECAY	17	121 - 1337	44	DECAY
(3) C	177LU IT DECAY (160.44 D)	7	121 - 970	10	DECAY
(4) E	176YB(3HE,D),(A,T)	36		0	REACTION
(5) A	176LU(N,G) E=THERMAL	148	121 - 7072	369	REACTION
(6) D	176LU(D,P)	45		0	REACTION
(7) F	178HF(T,A)	27		0	REACTION
(8) G	(HI,XNG)	65	121 - 2497	118	REACTION

Dataset.Levels // Select Levels for further operations

(2) 177YB B- DECAY			(5) 176LU(N,G) E=THERMAL		
#	$\gamma$	Energy J $\tau$	#	$\gamma$	Energy J $\tau$
0	-	0.0 7/2+ 6.647d	0	-	0.0 7/2+ 6.647d
1	1	121.56 7 9/2+ 0.117ns	1	1	121.6296 9 9/2+ 0.117ns
2	1	150.25 8 9/2- 130ns	2	1	150.3967 10 9/2- 130ns
3	2	268.82 8 11/2+	3	2	268.8023 11 11/2+
4	1	288.86 9 11/2-	4	1	289.0114 13 11/2-
5	2	440.60 11 13/2+	5	2	440.6700 11 13/2+
6	2	451.36 12 13/2-	6	2	451.5117 13 13/2-
7	2	457.98 9 3/2+ 0.45ns	7	2	457.9807 15 3/2+ 0.45ns
8	3	552.06 9 7/2+	8	5	552.0985 14 7/2+
9	3	671.78 12 9/2+	9	2	569.7068 16 1/2+ 155us
10	3	1049.34 8 (9/2-)	10	2	573.6422 15 3/2+ 3.5ns
11	4	1149.97 14 (7/2+)	11	2	636.2411 14 15/2+
12	3	1165.56 14 (9/2-, 11/2, 13/2-)	12	2	637.1101 16 15/2-
13	7	1230.73 10 11/2+ 60ps	13	7	671.9485 14 9/2+
14	3	1236.36 13 (7/2+, 9/2, 11/2+)	14	4	709.4533 16 5/2+
15	4	1241.50 21 (7/2+) 25ps	15	3	720.8199 17 7/2+
16	3	1337.16 17 7/2+	16	1	760.81 5 3/2+
Levels:17, $\gamma$ :44			Levels:17, $\gamma$ :44		

Dataset.Level.Gammas // Select Levels and Gammas for averaging

(2) 177YB B- DECAY			(5) 176LU(N,G) E=THERMAL		
#	$\gamma$	Energy J $\tau$	#	$\gamma$	Energy J $\tau$
0	-	0.0 7/2+ 6.647d	0	-	0.0 7/2+ 6.647d
1	1	94.4 3	1	1	94.140 4
2	1	430.5 3	2	1	283.33 3
3	1	552.0 1	3	1	401.721 9
4	1	552.0 1	4	1	430.473 3
5	1	552.0 1	5	1	552.102 4

Operations. Average selected: Levels Gammas

Calculations....

Buffer.Level. Operations: Insert to Adopted Replace in Adopted Run GTOL

Buffer.Gamma. Operations: Insert to Adopted Replace in Adopted Run GTOL

NUCID: G .....E.....DE.....RI.....DRI.....N.....MR.....MR.....CC...DCC...TI...DIIFC Q

177LU G 552.102 475 7 M1+E2

177LU.CG E\$ weighted average of 2 gammas:  
177LU.CG 552.0(1) 177YB B- DECAY;  
177LU.CG 552.102(4) 176LU(N,G) E=THERMAL

177LU.CG RI\$ weighted average of 2 gammas:  
177LU.CG 88(25) 177YB B- DECAY;  
177LU.CG 74(7) 176LU(N,G) E=THERMAL

Operations. Average selected: Levels Gammas

Calculations....

Buffer.Level. Operations: Insert to Adopted Replace in Adopted Run GTOL

Buffer.Gamma. Operations: Insert to Adopted Replace in Adopted Run GTOL

**work flow**

- 1) Select Datasets
- 2) Select Levels
- 3) Select Gammas
- 4) Average selected
- 5) Result in ENSDF cards
- 6) Save cards, run GTOL
- 7) Export GTOL file-result
- 8) Refresh iTree & continue

# Concluding remarks on ENSDF Web editor

1. Work on the ENSDF Web editor is in progress
2. Tasks oriented to different types of users and ways how the Web editor should work are becoming clearer
3. Consultations with experienced evaluators are needed (from time to time)
4. There are still technical and general questions relevant to the best practices and implementation of evaluators operations on ENSDF file

**Thank you.**