MyEnsdf Web Tools and ENSDF Web editor

Viktor Zerkin
International Atomic Energy Agency, Nuclear Data Section

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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++

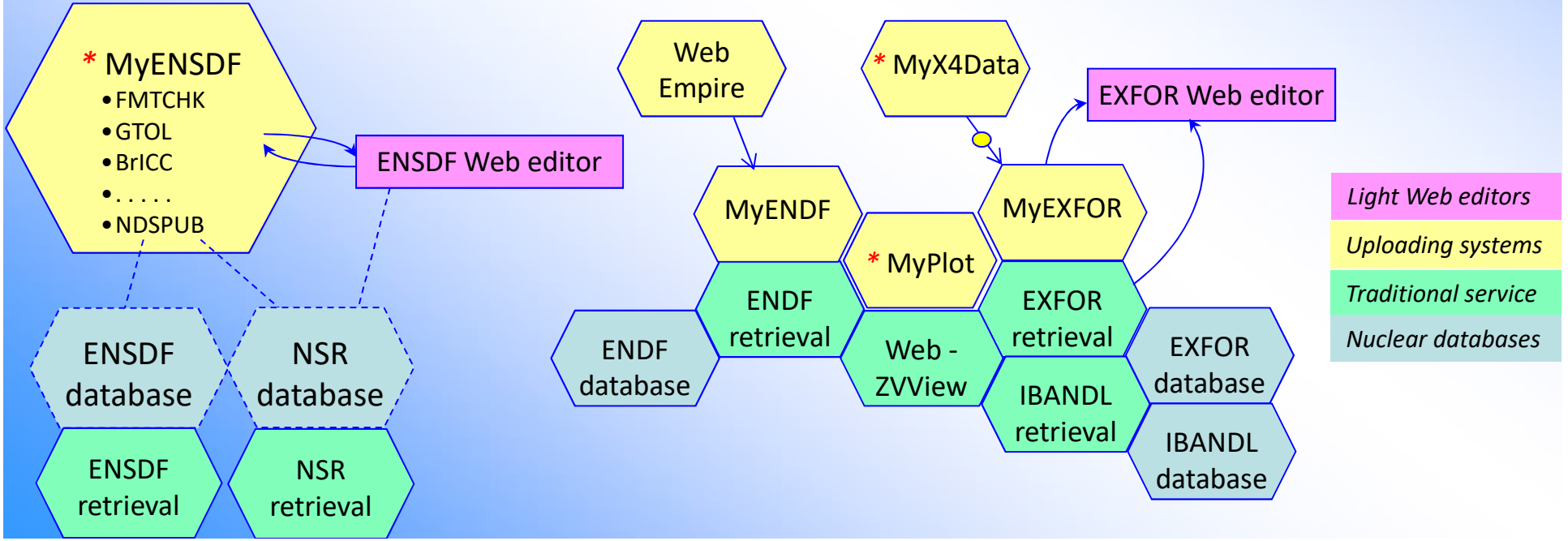
Part I.
MyEnsdf Web tools for ENSDF evaluator

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
2011 MyENSDF	* 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 (Ensdf+, Ensdf±), 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± interative 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

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, Brlcc, BrlccMixing, GABS, LOGFT, PANDORA, RADLST, RULER, BARON, NDSPUB, etc.

Evaluator: Guest-161.5.6.201-Zerkin

Working area: 1

Use existing ENSDF file: Browse... No file selected.

Go…

ession: 10

Submit Reset

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

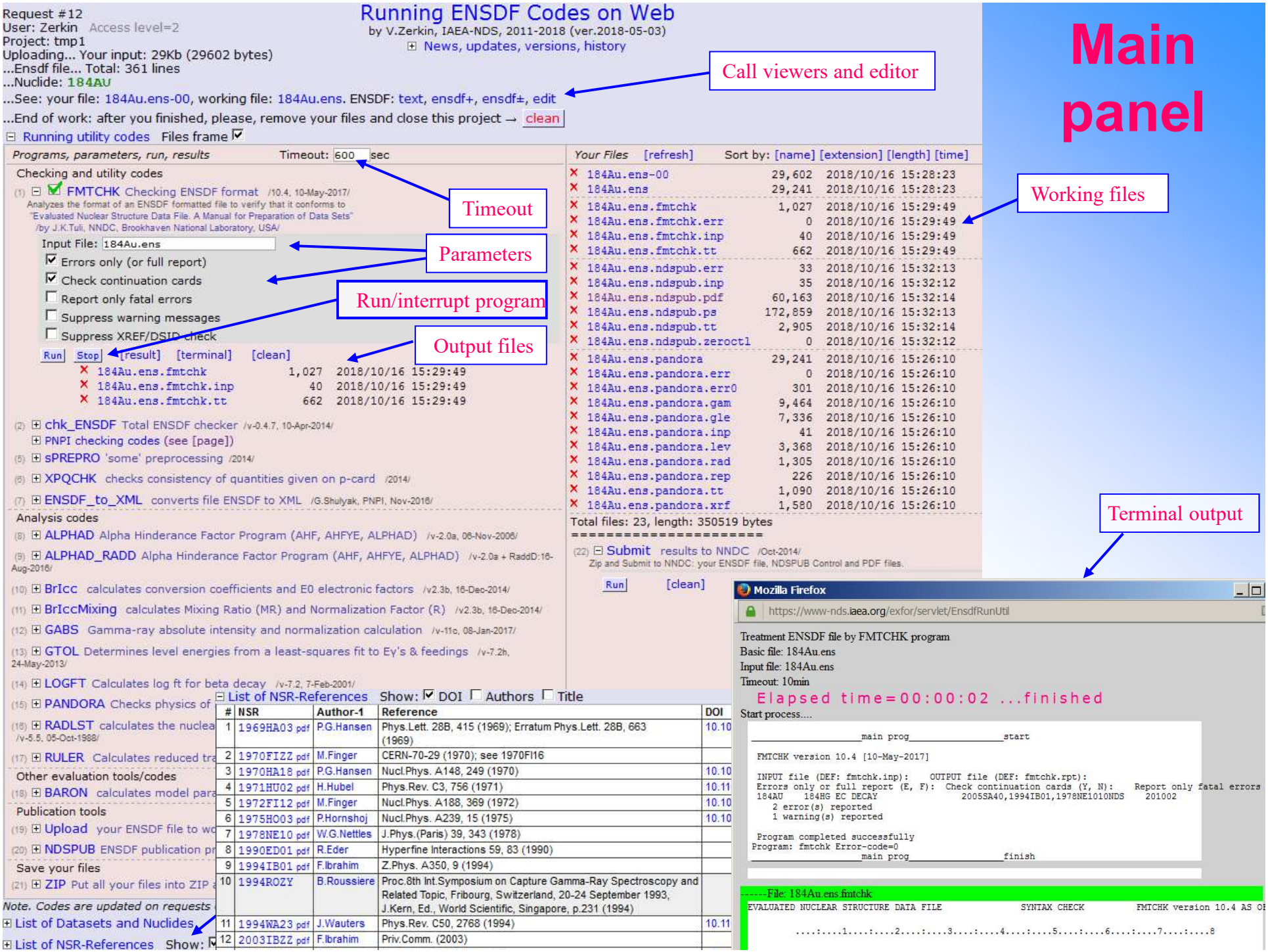
Login: Guest-161.5.6.201-Zerkin 2018/10/16:15:08:25 161.5.6.201::Austria Access level=2

#	Area	ENSDF file	Files	Created	
1.1	tmp1 Zerkin	184Au.ens	9	2018/10/16 14:27:22 Zerkin 161.5.6.201::Austria	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 ENDSF data file or put Web link

Continue your previous session


Main panel
Running ENSDF Codes on Web
by V.Zerkin, IAEA-NDS, 2011-2018 (ver.2018-05-03)
News, updates, versions, history
Request #12
User: Zerkin Access level=2
Project: tmp1
Uploading... Your input: 29Kb (29602 bytes)
...Ensdf file... Total: 361 lines
...Nuclide: 184Au
...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
Call viewers and editor
Timeout
Parameters
Run/interrupt program
Output files
Working files
Terminal output
Programs, parameters, run, results
Timeout: 600 sec
Checking and utility codes
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: 184Au.ens
Errors only (or full report)
Check continuation cards
Report only fatal errors
Suppress warning messages
Suppress XREF/DSID check
Run Stop [result] [terminal] [clean]
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
chk_ENSDF Total ENSDF checker /v-0.4.7, 10-Apr-2014/
PNPI checking codes (see [page])
sPREPRO 'some' preprocessing /2014/
XPQCHK checks consistency of quantities given on p-card /2014/
ENSDF_to_XML converts file ENSDF to XML /G.Shulyak, PNPI, Nov-2016/
Analysis codes
ALPHAD Alpha Hinderance Factor Program (AHF, AHFYE, ALPHAD) /v-2.0a, 06-Nov-2006/
ALPHAD_RADD Alpha Hinderance Factor Program (AHF, AHFYE, ALPHAD) /v-2.0a + RaddD:16-Aug-2016/
BrIcc calculates conversion coefficients and E0 electronic factors /v2.3b, 16-Dec-2014/
BrIccMixing calculates Mixing Ratio (MR) and Normalization Factor (R) /v2.3b, 16-Dec-2014/
GABS Gamma-ray absolute intensity and normalization calculation /v-11c, 08-Jan-2017/
GTOL Determines level energies from a least-squares fit to Ey's & feedings /v-7.2h, 24-May-2013/
LOGFT Calculates log ft for beta decay /v-7.2, 7-Feb-2001/
PANDORA Checks physics of
RADLST calculates the nuclea /v-5.5, 05-Oct-1988/
RULER Calculates reduced tra
Other evaluation tools/codes
BARON calculates model para
Publication tools
Upload your ENSDF file to wo
NDSPUB ENSDF publication pr
Save your files
ZIP Put all your files into ZIP
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]
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.zeroctl 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
Submit results to NNDC /Oct-2014/
Zip and Submit to NNDC: your ENSDF file, NDSPUB Control and PDF files.
Run [clean]
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) 10.10
2 1970FIZZ pdf M.Finger CERN-70-29 (1970); see 1970FI16
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)
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 2005SA40,1994IB01,1978NE1010NDS 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

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) **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 Eγ'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	NucID	R	DSID	DSType	nRec	nLines	nLevels	γ'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, 1978Al1
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

Show/Hide
- [ ] L-Fmt
- [ ] G-Fmt
- [x] Interpret.
- [x] #Record
- [ ] Hierarchy
- [x] G-plot
- [ ] G-plot:ok
- [ ] L-plot/V
- [ ] L-plot/H
- [ ] L_n in/out

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 H Record(s): 1

```
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[pdf]: 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[pdf]: 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[pdf]: 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[pdf], 1993Be39, 1988Ga05[pdf], 1987Be53, 1986Ok02[pdf], 1984Be34[pdf], 1981St28, 1980Be05[pdf], 1978Al12[pdf], 1972Ma54[pdf], 1972Mi16[pdf], 1972Ge20[pdf], 1972Fu12[pdf], 1972Be85, 1971Be40[pdf], 1971Mi01[pdf], 1970Fl09, 1970Be56, 1968Be70, 1965Ma18[pdf], 1965He06[pdf].

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

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 original publication via doi.org

Search in NSR by 1st author

Display PDF (privileged)

Go to Web NSR

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 ^{184}Pt, ^{186}Pt, and ^{188}Pt

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]

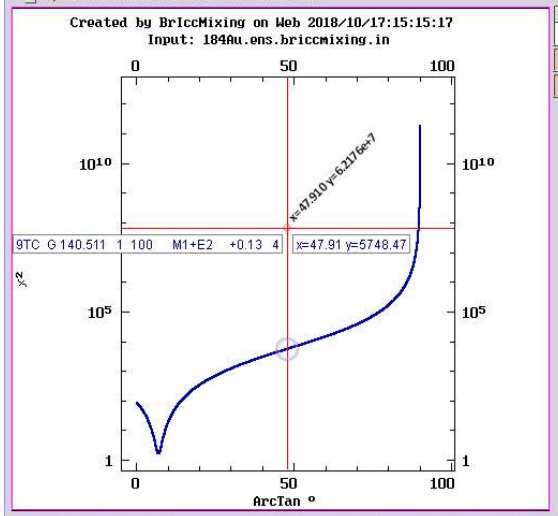
```
99TC  G 140.511   1  100       M1+E2      +0.13   4
99Tc 140.511 1
M1+E2 0.13  1.0
# NsrKey     Shell    IccVal     Unc    Type
1981Ge05     K        0.097      3      A
1981Ge05     T        0.119      3      A
1969Ag04     L1/L2    12         4      R
1969Ag04     L1/L3    18         7      R
1969Ag04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

```
184Au.ens.briccmixing.BrIccMixing.in            361  2018/10/17 15:15:15
184Au.ens.briccmixing.BrIccMixing.lst         2,450  2018/10/17 15:15:17
184Au.ens.briccmixing.BrIccMixing_01.dat    279,219  2018/10/17 15:15:15
184Au.ens.briccmixing.BrIccMixing_01.plt      2,464  2018/10/17 15:15:15
184Au.ens.briccmixing.err                        70  2018/10/17 15:15:17
184Au.ens.briccmixing.htm                     1,881  2018/10/17 15:15:17
184Au.ens.briccmixing.in                        361  2018/10/17 15:15:15
184Au.ens.briccmixing.inp                         3  2018/10/17 15:15:15
184Au.ens.briccmixing.tt                      2,696  2018/10/17 15:15:17
*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) 9TC 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)

Log: XY X Y Lin: XY X Y Auto-range: XY X Y Page: >> << Zoom: <> >< Grid: VH 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.

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: δ=0.122(+13-13); χ^2/ν= 1.70E+00
Input data

		Experiment	Fit	
NSRkey	Shell	Icc(Unc)	Icc(Unc)	Type
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

Programs' parameters, output files

GTOL

GTOL Determines level energies from a least-squares fit to Ey's & feedings /v-7.2h, 24-May-2013/

Input File: 184Au.ens

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

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

- [x] 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/
  - [x] Take into account recoil of a nucleus

Run [result] [terminal] [clean]

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

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

Run [result] [terminal] [clean]

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

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

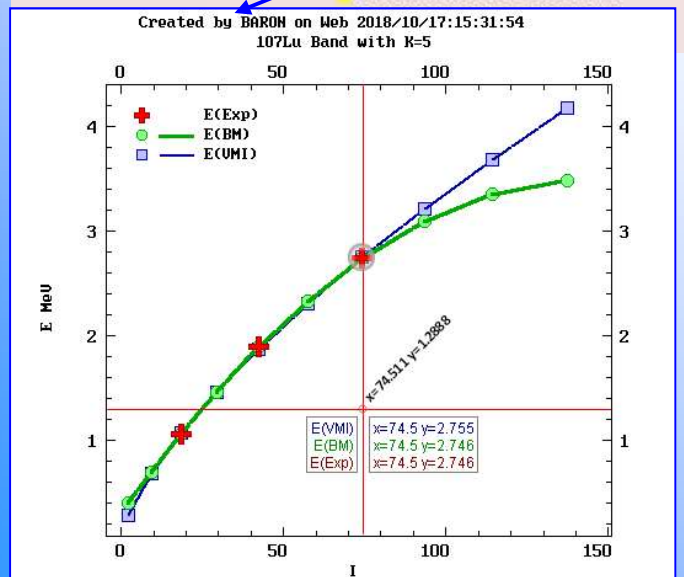
Rotational band { I E(I)[MeV] } *type/paste/edit text below* See [Preprint] Examples: [1] [2] [3]

```
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(I+1)-K²	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  (Eexp-Ecalc)**2  ((Eexp-Ecalc)/DE)**2
 9/2     1.0583    0.0010      1.0583       0.00          0.00       0.00        0.00
13/2     1.9001    0.0010      1.9001       0.00          0.00       0.00        0.00
17/2     2.7457    0.0010      2.7457       0.00          0.00       0.00        0.00
E0[MeV]     0.287968E+00      0.299E-02
A [MeV]     0.444959E-01      0.153E-03
B [MeV]    -0.154455E-03      0.160E-05
DELTA:         0.000 keV
VMI parametrization
I E(EXP), MeV  DE(EXP), MeV  E(CALC), MeV J, MeV-1   ((Eexp-Ecalc)/DE)**2
 9/2     1.0583    0.0010      1.0686      12.786     10.36       107.31
13/2     1.9001    0.0010      1.8801      16.607    -19.97       398.72
17/2     2.7457    0.0010      2.7552      19.857      9.51        90.36
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
```

$^{184}_{79}Au_{105}$

^{184}Hg ε Decay 2005Sa40,1994Ib01,1978Ne10

Parent ^{184}Hg: E=0.0; Jπ=0+; $T_{1/2}$=30.87 s *26*; Q(g.s.)=3970 *24*; %ε+%β+ decay=98.89 *6*.

Others: 1975Ho03, 1971Hu02, 1969Ha03 (observed 157γ and 237γ).

2005Sa40: mass-separated ^{184}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 ^{148}Sm(^{40}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 ^{148}Sm by 185 MeV ^{40}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.

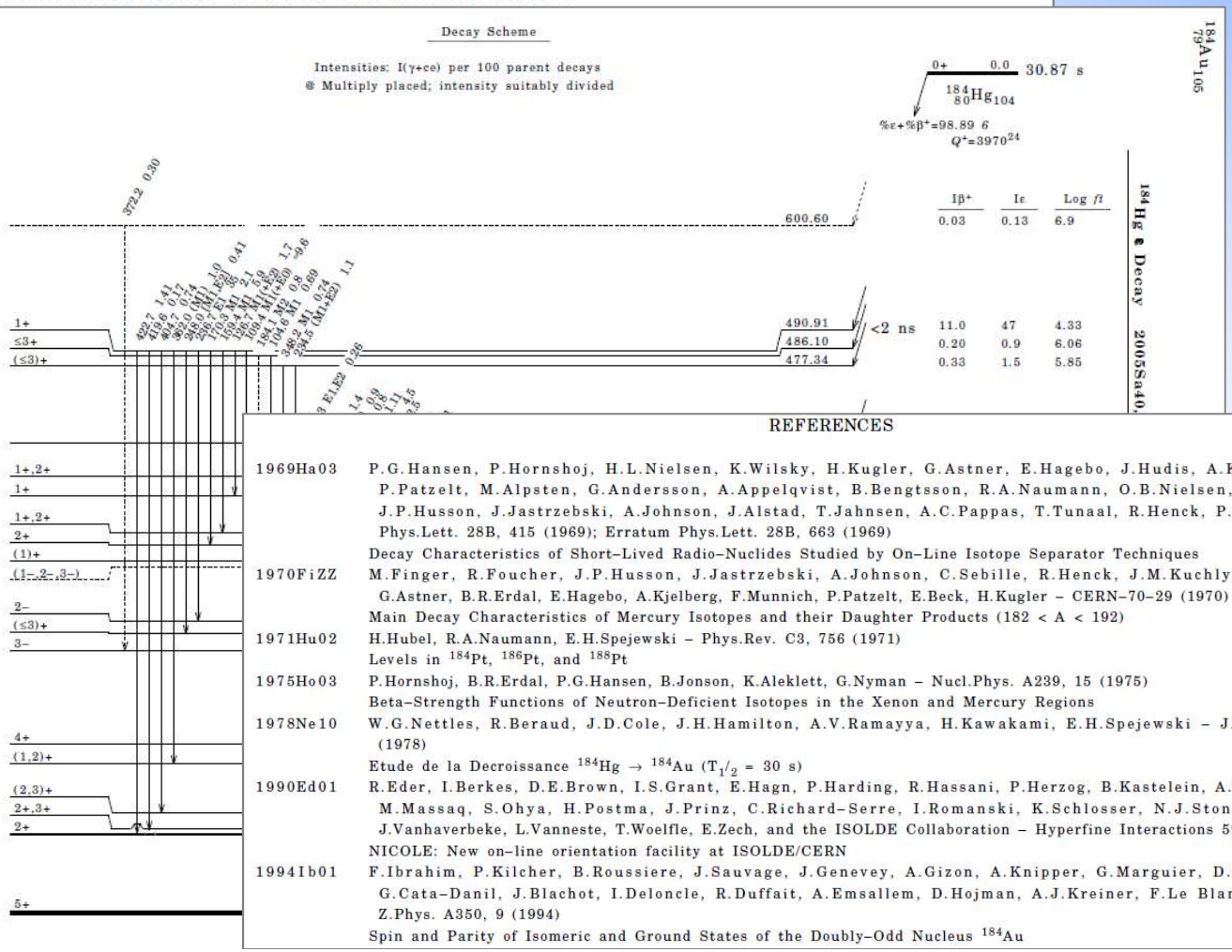
1975Ho03: β strength function deduced from total-absorption γ measurement.

1978Ne10: Mass-separated source; measured Eγ, Iγ, γγ coin, γγ(t) (time resolution 6 ns *1*).

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

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-

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



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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)
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)
Levels in ^{184}Pt, ^{186}Pt, and ^{188}Pt

1975Ho03 P.Hornshoj, B.R.Erdal, P.G.Hansen, B.Jonson, K.Aleklett, G.Nyman – Nucl.Phys. A239, 15 (1975)
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)
Etude de la Decroissance ^{184}Hg → ^{184}Au ($T_{1/2}$ = 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)
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 ^{184}Au

NDSPUB result: PS, PDF (old code)

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+ $T_{1/2}$≤0.45·10^{-9}sec
#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 I:[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). 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

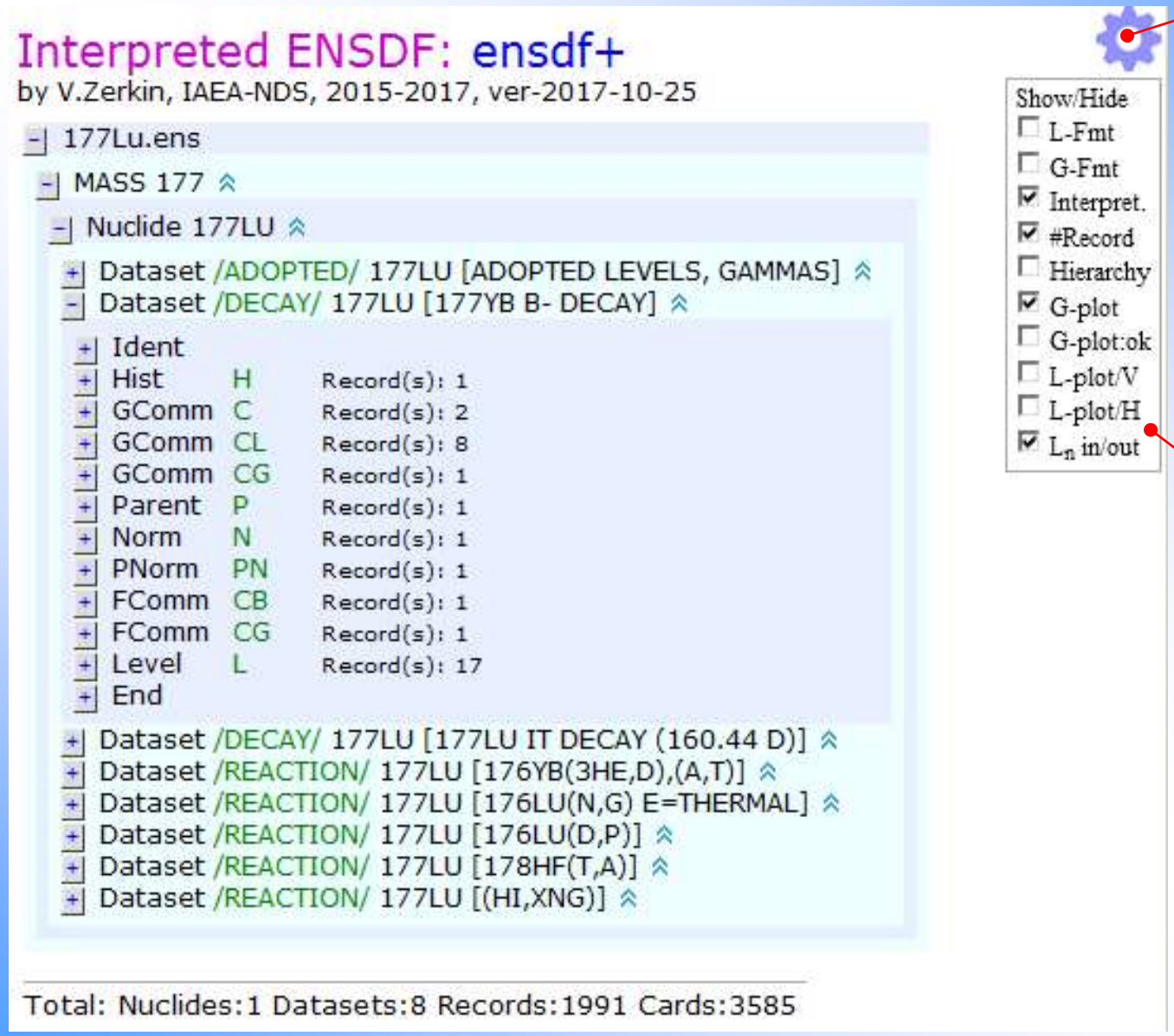
Indication of possible problem

FL in ENSDF file

Expected FL position

1. ENSDF interpreted ensdf+

Limited interactions: collapsing blocks of information, display options



Current level L7

FL is given

Display option

Show/Hide
- [ ] L-Fmt
- [ ] G-Fmt
- [x] Interpret.
- [x] #Record
- [ ] Hierarchy
- [x] G-plot
- [ ] G-plot:ok
- [ ] L-plot/V
- [ ] L-plot/H
- [x] L_n in/out

```
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.
```

```
177LU  G     457.964 4 196     20 M1(+E2)
177LU2 G FL=0.0
177LU CG M$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(±.0015)keV Spin and parity:Jπ=5/2+ $T_{½}$≤0.45·10^{-9}sec
#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(±.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) 9/2+ ΔE=-0.0161 [5σ]

.....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.

FL1: [5σ]

#Record 2/2 Gamma "457.964(4) M1(+E2) 196(20)" Line:2325[5]
E=457.964(±.004)keV
Init.Level:L7:457.9807(15) 5/2+ Final.Level:L0:0.0 7/2+ [E7-E0=457.9807; E7-E0-Eγ=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]).

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 CG M$EKC=0.076 21, EL1C=0.017  6, EL2C=0.009 3, EL3C=0.007 3,
177LU2CG and EM2C=0.0042 20 (1996Pe05).
177LU3CG Other: EKC=0.08 and EMC=0.006 (1971Ma45).
177LU4CG Note, that values overlap with these for the 244.332G depopulating
177LU5CG the 1201.649 KEV level.
177LU  G   1030.0    8  7.7   13(M1(+E2))                                  P
177LU CG M$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:Jπ=(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-Eγ =0.021≡0.5σ]
Relative photon intensity:RI=0.38(6)

Nearest L24: [14σ]

#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]

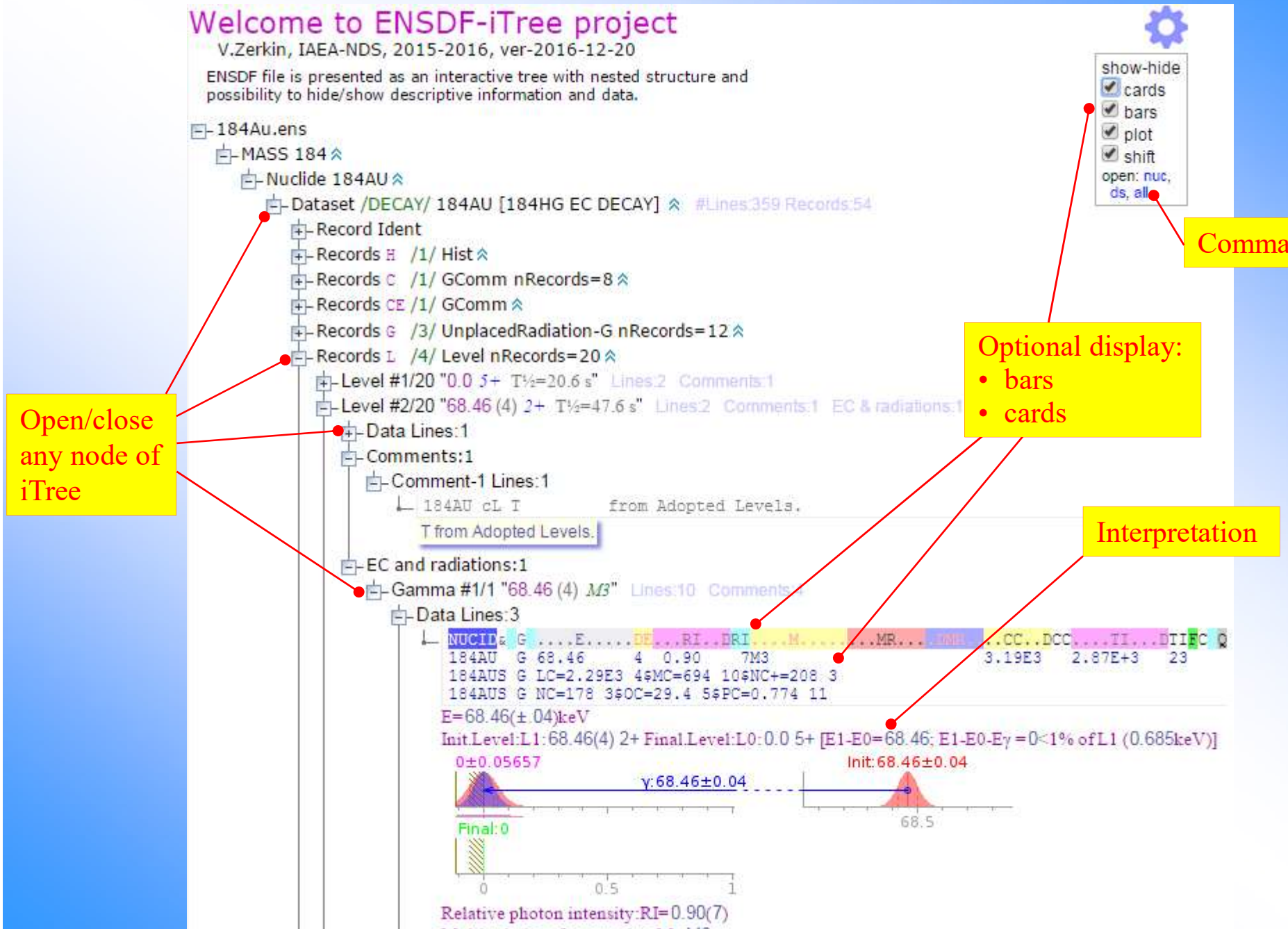
.....help1:[1150.767,0.021,244.31,0.0,906.74,0.05]
Relative photon intensity:RI=7.1
Multipolarity of transaction:M=E2

#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-Eγ =-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.

2. ENSDF as interactive tree ensdf±



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)
```

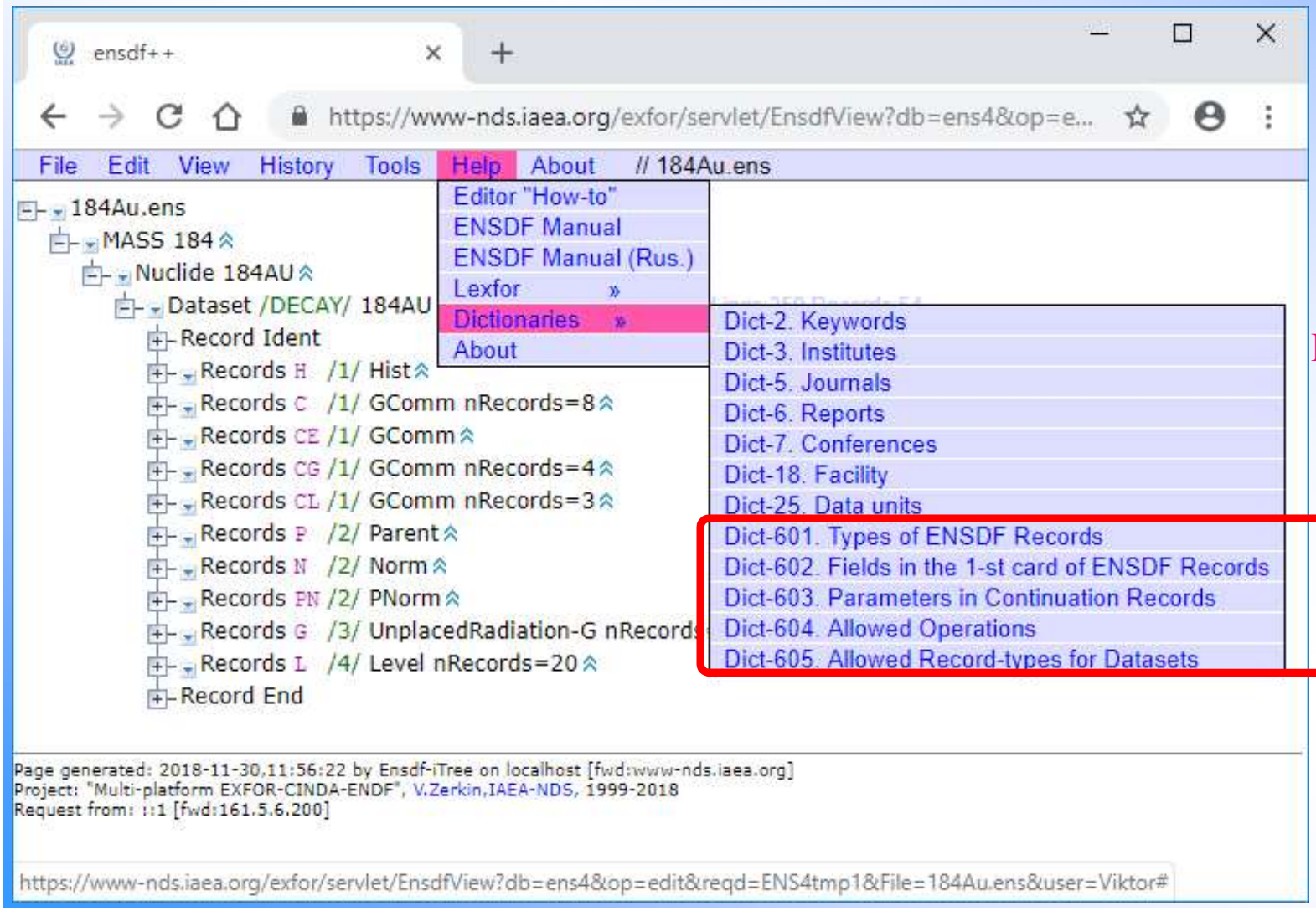
ENSDF Dictionaries

- ❑ 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]



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           n   ' R '                Reference
 TRA 201605 End      999  +   '   '                End of dataset
```

DICT_ARC_NEW.604

```
#           Dictionary: Allowed Operations
#           Alowed 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
```

Dictionaries. 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
```

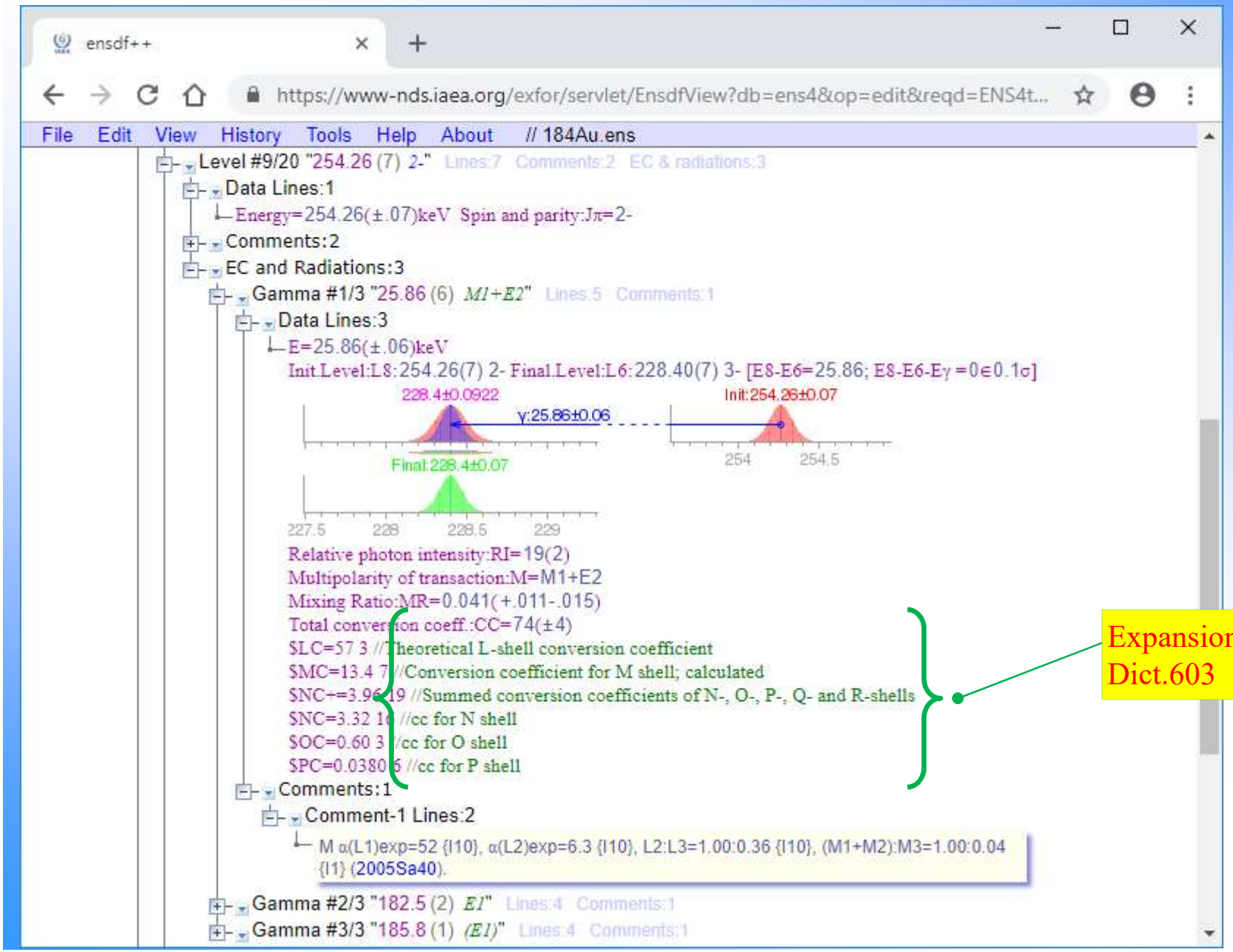
DICT_ARC_NEW.605 cont.

```
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
```

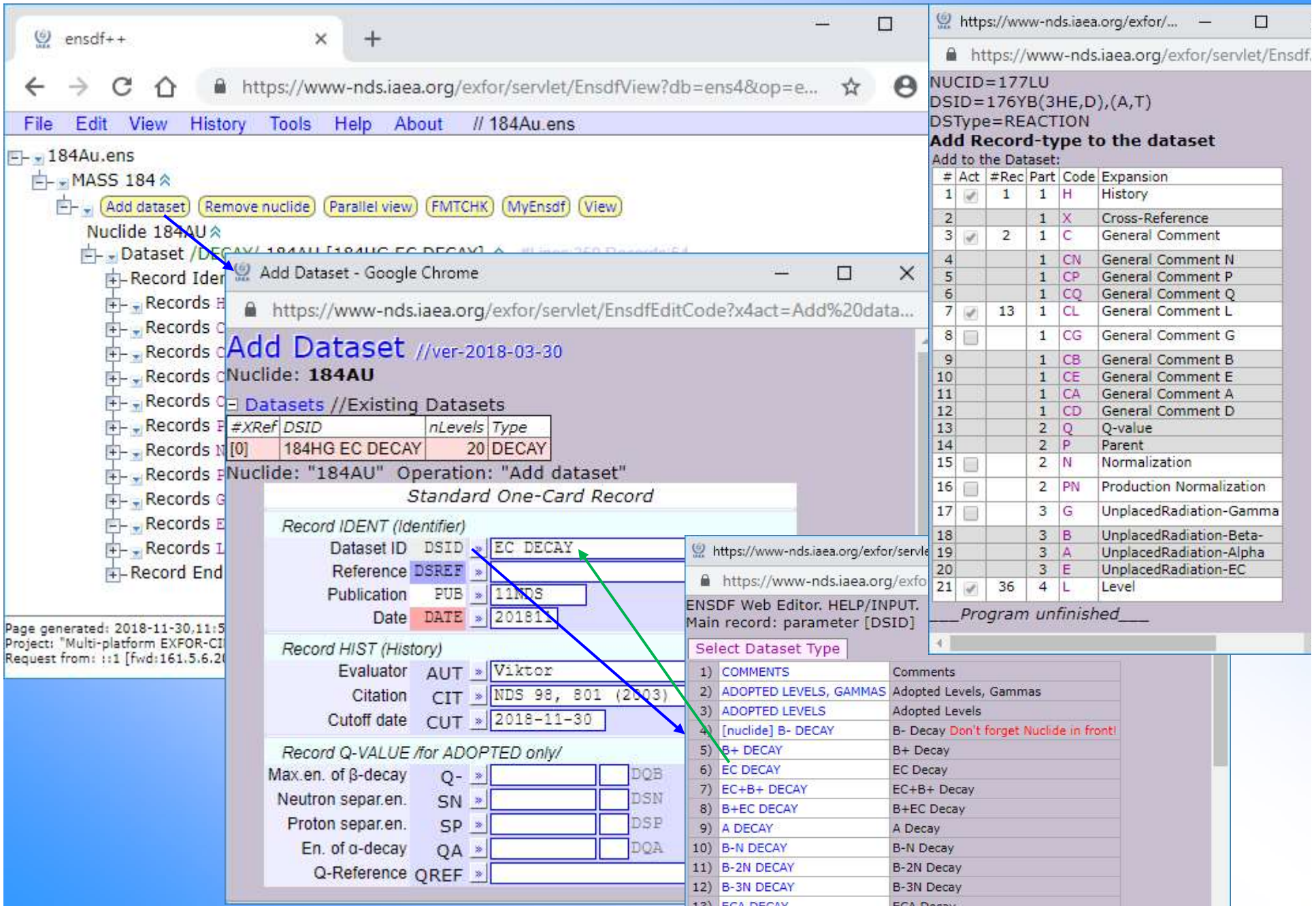
DICT_ARC_NEW.605 cont.

```
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 Dictionaries: Help + input



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

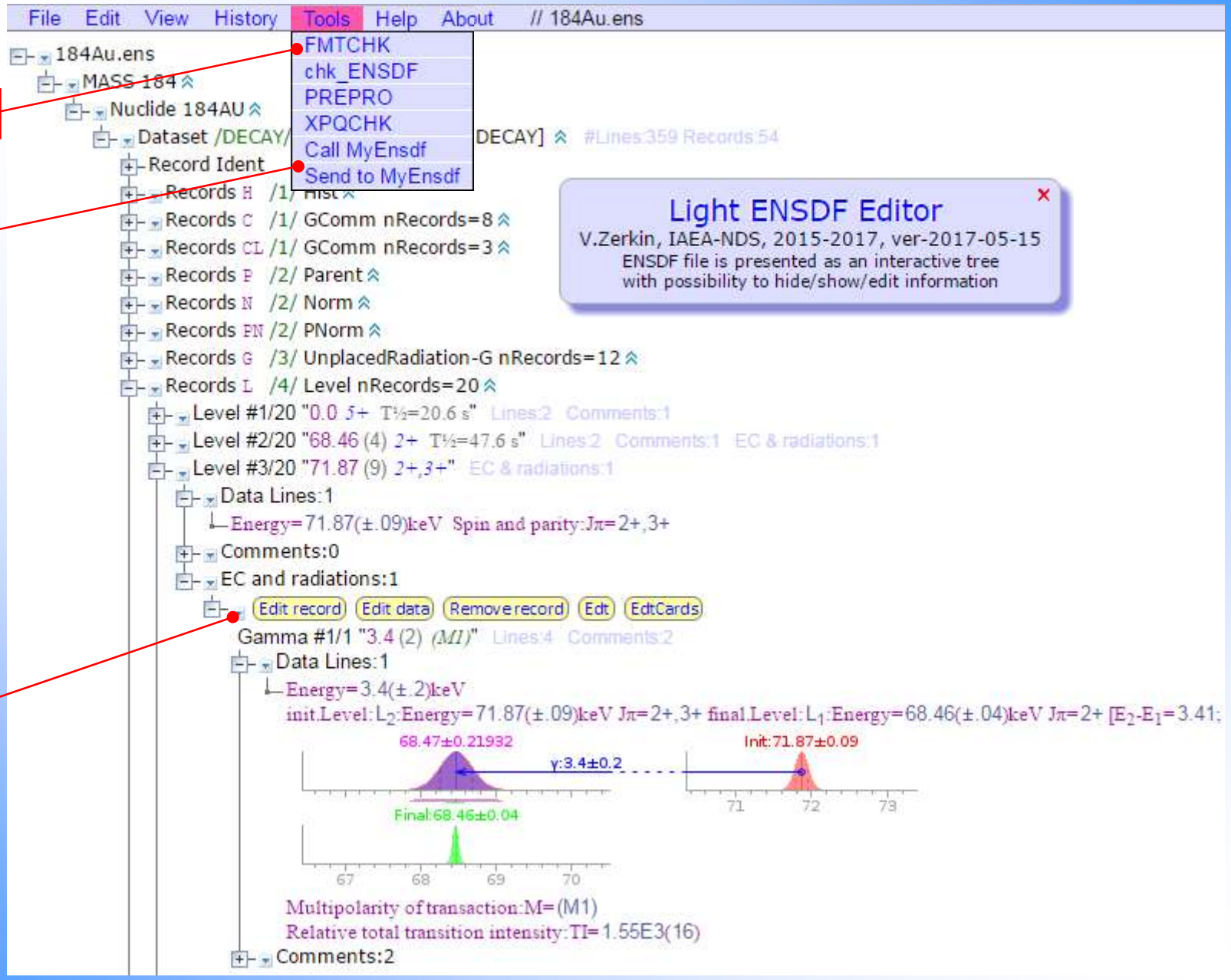
1. Web based (no installation, only Web browser needed)
2. Platform independent
3. Integrated with ENSDF codes, MyEnsdf, NSR database and Web
4. Can be useful for beginners: showing structure of ENSDF file, offering online help, preventing input errors
5. Can be useful for experienced evaluators by implementing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

ENSDF Web editor ensdf++

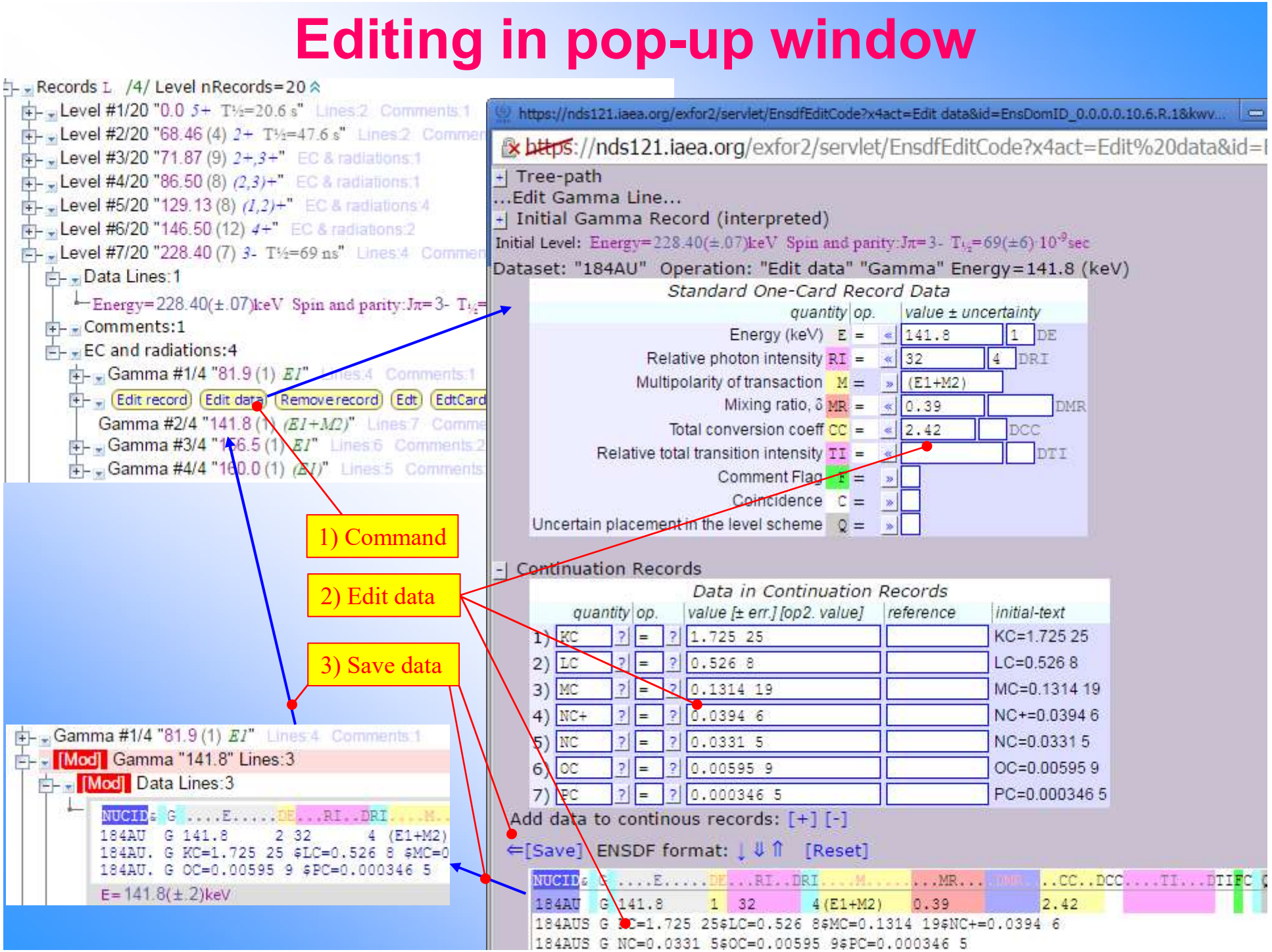
Run FMTCHK

Send ENSDF to MyEnsdf to run other codes

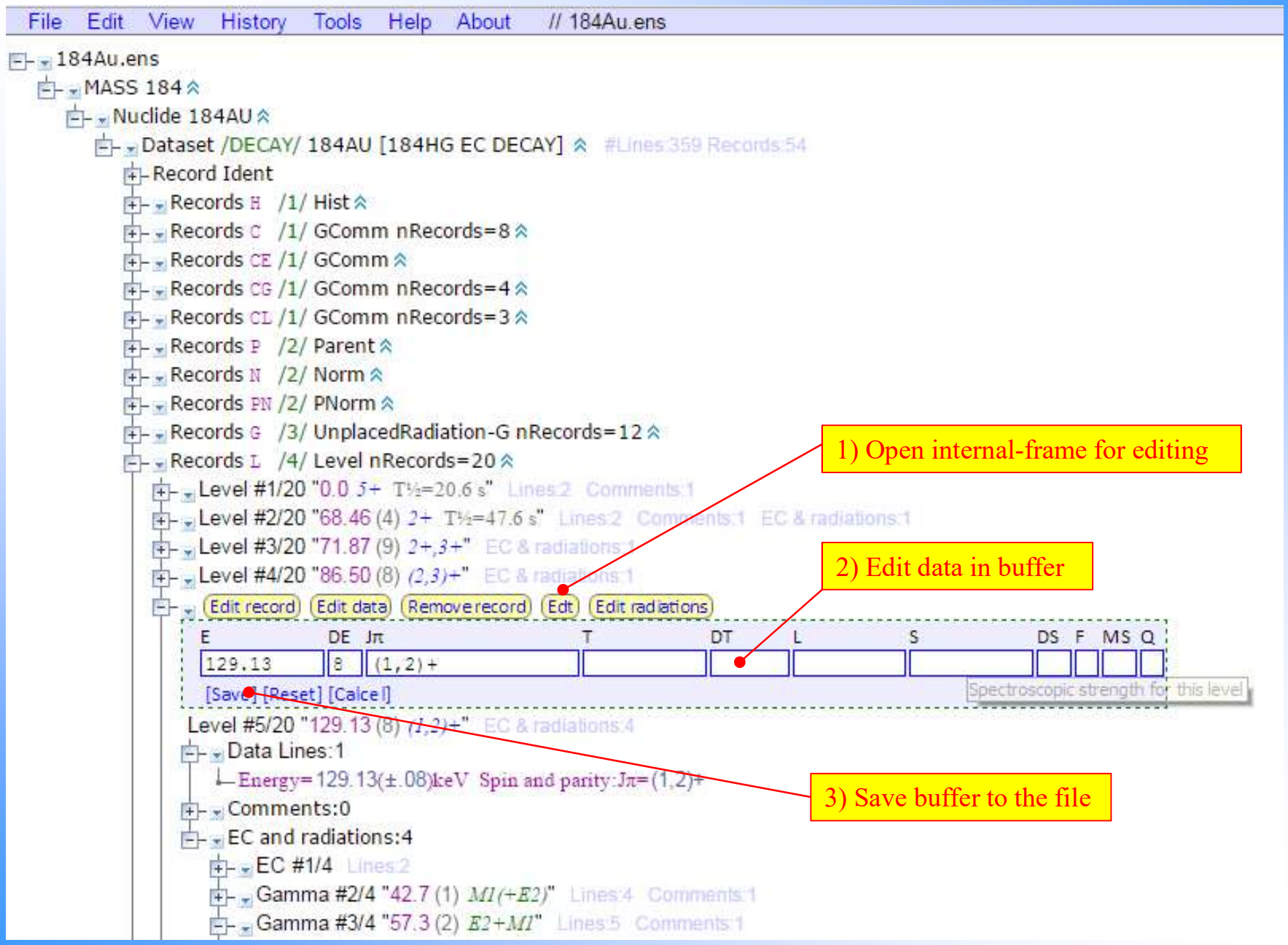
Commands on a node extend iTree ENSDF Viewer



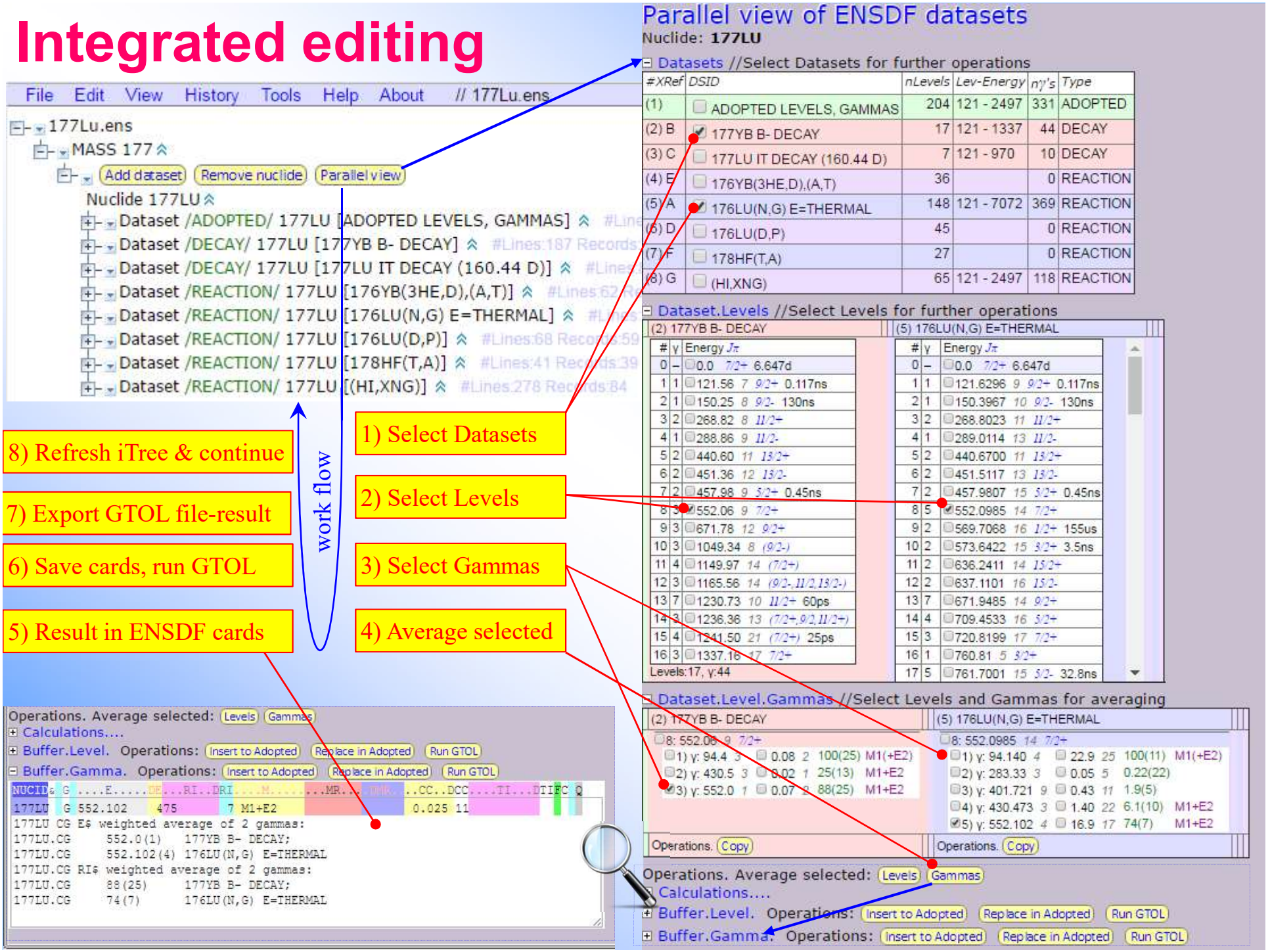
Editing in pop-up window



Editing on the main window (REJECTED)



Integrated editing



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.