

Recent progress in MyEnsdf Web tools for ENSDF evaluators

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Lawrence Berkeley National Laboratory, Berkeley, USA

Topics

Login to MyEnsdf

- Dual Login: Guest and Evaluator

PDF system

- EXFOR-NSR PDF database project.
- Functioning PDF database
- Access to database, contributions, statistics

MyEnsdf

- Current contents and recently added codes
- Future options

ENSDF Web Viewers and Editor

- ENSDF interpreted cards
- ENSDF interpreted interactive tree
- ENSDF Web-editor

Dual Login to MyEnsdf

MyEnsdf login modes: Guest and Evaluator

- **Guest:** we check only that user is “human” (to stop using robots)
- **Evaluator:** authorized entrance (registration via e-mail to NDS or NNDC).

The same as Guest + Web Editor.

Additional authorization is needed to access PDF database.

The screenshot shows the MyEnsdf login page with the following elements:

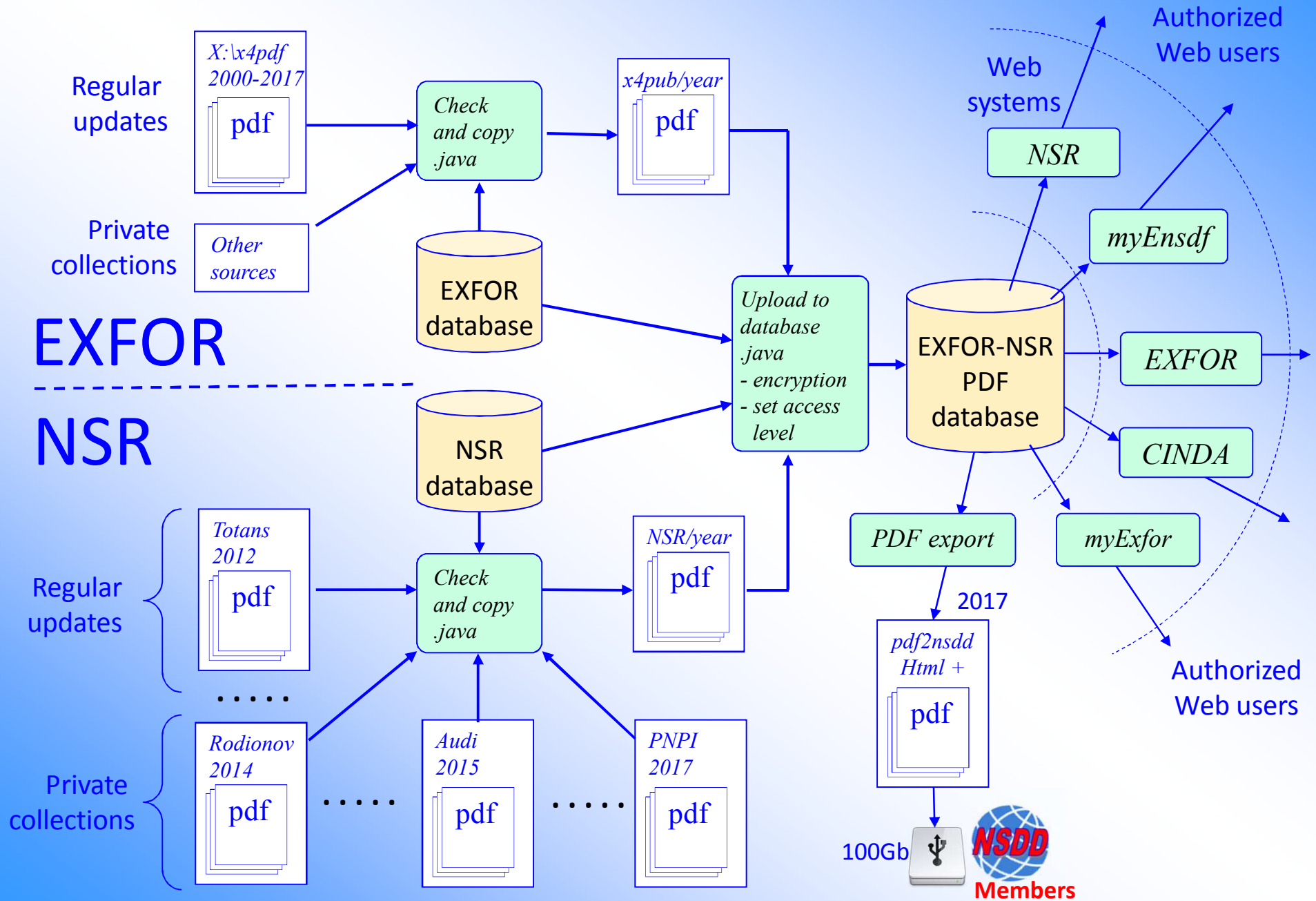
- Guest Login:** A yellow box labeled "Guest Login" points to the "Login" button in the top navigation bar.
- Authorized Login:** A yellow box labeled "Authorized Login" points to the "Guest" button in the bottom right corner.
- Switch Logins:** A red dashed arrow labeled "Switch Logins" points from the "Login" button to the "Guest" button.
- Guest Login Form:** A form titled "Web tools for ENSDF evaluators" with a "Guest:" label. It contains a "Required code:" field with a random number "3377" and a "Refresh" button, and an "Enter code:" field with the user's input "3377" and a "Go!" button. Blue arrows point from the text "Random number" and "User's input" to these fields.
- Evaluator Login Form:** A form titled "Web tools for ENSDF evaluators" with an "Evaluator:" label. It contains a "Name or e-mail:" field with the input "Evaluator", a "Password:" field with masked characters ".....", and an "Enter" button.

Part I.

EXFOR-NSR PDF database

/Common NNDC-NDS project/

Functioning of EXFOR-NSR PDF database



Access to full EXFOR-NSR PDF Database

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

Web tools for ENSDF evaluators
Web server: www-nds.iaea.org

Guest

Evaluator: Name or e-mail: Viktor
Password:
Enter

1) Enter to MyEnsdf as Evaluator



MyEnsdf: Web tools for ENSDF evaluators
by V.Zerkin, IAEA-NDS, 2011-2017, ver.2017-05-15

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

User: Viktor
Session: 176

File: Choose File No file chosen Submit Reset

Tools: alphad fntchk gabs gtol newgtol logft pandora radlst ruler xpqchk 1-5 152 aa 177Lu 235Pa 221Fr

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

17:13:59:40 161.5.149.211::Austria Access level=2

2) Go to PDF database:
- NSR PDF database
- Joined EXFOR-NSR database

Joined EXFOR-NSR PDF database by years

X4-NSR PDF collection.

Database updated: 2017-05-12. Files: 101637 from 2000-04-19 to 2017-05-12.



Total: 101637 files from 2000-04-19 to 2017-05-12. NSR files: 73875 files

-	-	-	-	-	-	1896:3	-	1898:4	1899:1	[1890-1899]:8
1910:4	1911:2	1912:1	-	-	-	-	-	1918:2	1919:1	[1910-1919]:10
1920:2	1921:2	-	-	1924:1	-	-	-	1928:4	1929:4	[1920-1929]:13
1930:2	1931:3	1932:5	1933:2	1934:4	1935:20	1936:18	1937:31	1938:29	1939:58	[1930-1939]:172
1940:52	1941:40	1942:18	1943:14	1944:19	1945:23	1946:74	1947:148	1948:161	1949:286	[1940-1949]:835
1950:386	1951:418	1952:379	1953:469	1954:544	1955:587	1956:858	1957:677	1958:901	1959:881	[1950-1959]:5900
1960:969	1961:1009	1962:1214	1963:1523	1964:1377	1965:1593	1966:1708	1967:1251	1968:1292	1969:2191	[1960-1969]:14127
1970:1814	1971:1953	1972:1851	1973:2047	1974:1814	1975:1449	1976:1402	1977:1380	1978:1401	1979:1545	[1970-1979]:18238
1980:1432	1981:1419	1982:1302	1983:1221	1984:1224	1985:1215	1986:1290	1987:1028	1988:1093	1989:1068	[1980-1989]:12292
1990:1257	1991:1072	1992:1118	1993:1344	1994:1540	1995:2144	1996:2050	1997:2133	1998:2193	1999:2396	[1990-1999]:17247
2000:2554	2001:1802	2002:1941	2003:1846	2004:2328	2005:2404	2006:2497	2007:3028	2008:2141	2009:1924	[2000-2009]:22461
2010:1904	2011:2129	2012:2089	2013:1919	2014:1747	2015:1714	2016:760	2017:94			[2010-2017]:12336

Years: 101 Publications: 101637

Full volumes: [conferences and books] [theses] [reports]

Checking mode //contributions to NSR-PDF

PDF's by years and decades with reference, title, authors, link to NSR, publishers web sites

Filter and check:

1) 201200_Totans /3662/	16) 20170322_PNPI /11229/
2) 201300_Totans /1000/	17) 20170327_PNPI /305/
3) 201400_Totans /559/	18) 201703_Totans /374/
4) 201500_Totans /618/	19) 201704_Totans /117/
5) 201510_Balraj /263/	20) 201704_Zerkin /132/
6) 201510_nndc2corr /11/	21) 20170508_Kondev /44/
7) 201510_Rodionov /2620/	22) 20170512_Zerkin /31/
8) 201512_Audi /2626/	23) 201705_Totans /841/
9) 201600_Totans /2065/	
10) 201603_Rodionov /325/	
11) 201603_Shulyak /13469/	
12) 201604_Kondev /1145/	
13) 201611_PNPI /31969/	
14) 201701_Totans /284/	
15) 201702_Totans /186/	
Sum: /73875/	

PDF's by contributors for checking

2016

1. J,APP/B,47,789,2016 Jour: Acta Physica Polonica, Part B, Vol.47, p.789 (2016) [pdf] DOI: 10.5506/APhys NSR: 2016DI02 [pdf] NSR-Reference: Acta Phys.Pol. B47, 789 (2016)
Measurement of the $^{236}\text{U}(n,f)$ Cross Section with the MicroMegas Detector
M.Diakaki, A.Kalamara, M.Kokkoris, G.Marangouli, A.Tsinganis, A.Panagiotopoulos, R.Vlastou, E.Berthoumieux,
2. J,APP/B,47,841,2016 Jour: Acta Physica Polonica, Part B, Vol.47, p.841 (2016) [pdf] DOI: 10.5506/APhys NSR: 2016MA18 [pdf] NSR-Reference: Acta Phys.Pol. B47, 841 (2016)
Study of the Near-barrier Scattering of ^8He on ^{208}Pb
G.Marquinez-Duran, A.M.Sanchez-Benitez, I.Martel, L.Acosta, K.Rusek, M.A.G.Alvarez, R.Berjillos, M.J.G.Borge, L.Standjilo, I.Strojek, O.Tengblad, R.Wolski, A.H.Zia
3. J,APP/B,47,859,2016 Jour: Acta Physica Polonica, Part B, Vol.47, p.859 (2016) [pdf] DOI: 10.5506/APhys NSR: 2016KR03 [pdf] NSR-Reference: Acta Phys.Pol. B47, 859 (2016)
Gamma Decay of the Possible 1^- Two-phonon State in ^{140}Ce Excited via Inelastic Scattering of ^{17}O
M.Krcysiek, and the AGATA Collaboration
4. J,ARI,107,391,2016 Jour: Applied Radiation and Isotopes, Vol.107, p.391 (2016) [pdf] EXFOR: D4333 DO NSR: 2016TA01 [pdf] NSR-Reference: Appl.Radiat.Isot. 107, 391 (2016)
Investigation of activation cross sections of proton induced reactions on indium up to 70 MeV for practical applicatio
F.Tarkanyi, F.Ditroi, A.Hermanne, S.Takacs, M.Baba

Contributions to NSR PDF database as of 2017-05-16

1) 201200_Totans	/3662/	16) 20170322_PNPI	/11229/
2) 201300_Totans	/1000/	17) 20170327_PNPI	/305/
3) 201400_Totans	/559/	18) 201703_Totans	/374/
4) 201500_Totans	/618/	19) 201704_Totans	/117/
5) 201510_Balraj	/263/	20) 201704_Zerkin	/132/
6) 201510_nndc2corr	/11/	21) 20170508_Kondev	/44/
7) 201510_Rodionov	/2620/	22) 20170512_Zerkin	/31/
8) 201512_Audi	/2626/	23) 201705_Totans	/841/
9) 201600_Totans	/2065/		
10) 201603_Rodionov	/325/		
11) 201603_Shulyak	/13469/		
12) 201604_Kondev	/1145/		
13) 201611_PNPI	/31969/		
14) 201701_Totans	/284/		
15) 201702_Totans	/186/		
Sum:	/73875/		

**Thanks to external
contributors!!!**

PDF Statistics (2017-05-16)

Database	References	PDF's	PDF's incl. links X4-NSR
NSR	224,317	73,831 (33%)	83,811 (37%)
EXFOR	30,423	21,508 (71%)	22,133 (73%)
CINDA+X4+NSR	86,300	22,997 (27%)	30,685 (36%)

Part II.

MyEnsdf

Web tools for ENSDF evaluators

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

MyEnsdf: data uploading and links

MyEnsdf: Web tools for ENSDF evaluators
by V.Zerkin, IAEA-NDS, 2011-2017, ver.2017-04-24

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

Evaluator: Viktor
Working area: 2
Session: 3
Use existing ENSDF file: No file chosen

or ENSDF, e.g. [text](#) tests: [alphad](#) [fmtchk](#) [gabs](#) [gtol](#) [newgtol](#) [logft](#) [pandora](#) [radlst](#) [ruler](#) [xpqchk](#) [1-5](#) [152](#) [aa](#) [177Lu](#) [235Pa](#)

```
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
```

Useful links:

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

Login: Viktor 2017/05/16:12:22:44 161.5.6.201::Austria Access level=2

Web Design and Programming: Viktor Zerkin, NDS, International Atomic Energy Agency (V.Zerkin@iaea.org)
Last updated: 05/16/2017 14:31:46

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

2) Go to use MyEnsdf

MyEnsdf Main Panel

Request #171
User: Viktor
Project: tmp151
Uploading... Remote file: /ensdf/177Lu.ens
Your input: 284Kb (290385 bytes)
...Ensdf file... Total: 3585 lines
...Nuclide: **177Lu**
...See: your file: 177Lu.ens-00, working file: 177Lu.ens. ENSDF: text, ensdf+, ensdf±, edit (editing version: 21 20 19)
...End of work: remove files and close this project → [clean](#)
 [Run utilities](#)

Running ENSDF Codes on Web

by V.Zerkin, IAEA-NDS, 2011-2017 (ver.2017-05-11)
[News, updates, versions, history](#)

Call viewers and editor **Edit previous versions of your file**

Programs with parameters **Input/output files**

Programs, parameters, run, results	Timeout: <input type="text" value="600"/> sec	Your Files [refresh]	Sort by: [name] [extension] [length] [time]
Checking and utility codes			
(1) <input checked="" type="checkbox"/> FMTCHK Checking ENSDF format /10.3e+, 15-Dec-2015/		✗ 177Lu.ens-00	290,385 2017/05/12 18:08:13
(2) <input type="checkbox"/> chk_ENSDF Total ENSDF checker /v-0.4.7, 10-Apr-2014/ <input type="checkbox"/> PNPI checking codes (see [page])		✗ 177Lu.ens	290,385 2017/05/12 18:08:13
(5) <input type="checkbox"/> sPREPRO 'some' preprocessing /2014/		✗ 177Lu.ens.fmtchk	23,384 2017/05/17 12:34:42
(6) <input type="checkbox"/> XPQCHK checks consistency of quantities given on p-card /2014/		✗ 177Lu.ens.fmtchk.err	0 2017/05/17 12:34:42
(7) <input type="checkbox"/> ENSDF_to_XML converts file ENSDF to XML /G.Shulyak, PNPI, Nov-2016/		✗ 177Lu.ens.fmtchk.inp	40 2017/05/17 12:34:41
Analysis codes		✗ 177Lu.ens.fmtchk.tt	1,394 2017/05/17 12:34:42
(8) <input type="checkbox"/> ALPHAD Alpha Hinderance Factor Program (AHF, AHFYE, ALPHAD) /v-2.0a, 08-Nov-2006/		✗ 177Lu.ens.gtol	1,046,468 2017/05/17 12:35:18
(9) <input type="checkbox"/> BrIcc calculates conversion coefficients and E0 electronic factors /v2.3b, 16-Dec-2014/		✗ 177Lu.ens.gtol.err	0 2017/05/17 12:35:18
(10) <input type="checkbox"/> BrIccMixing calculates Mixing Ratio (MR) and Normalization Factor (R) /v2.3b, 16-Dec-2014/		✗ 177Lu.ens.gtol.inp	59 2017/05/17 12:35:18
(11) <input type="checkbox"/> GABS Gamma-ray absolute intensity and normalization calculation /v-11.0, 02-Apr-2015/		✗ 177Lu.ens.gtol.newgtol.inp	40 2017/05/17 12:35:18
(12) <input type="checkbox"/> GTOL Determines level energies from a least-squares fit to E _γ 's & feedings /v-7.2h, 24-May-2013/		✗ 177Lu.ens.gtol.newgtol.out	290,385 2017/05/17 12:35:19
(13) <input type="checkbox"/> LOGFT Calculates log ft for beta decay /v-7.2, 7-Feb-2001/		✗ 177Lu.ens.gtol.newgtol.rpt	434,108 2017/05/17 12:35:19
(14) <input type="checkbox"/> PANDORA Checks physics of ENSDF files /v-7.0b, 01-May-2007/		✗ 177Lu.ens.gtol.out	290,304 2017/05/17 12:35:18
(15) <input type="checkbox"/> RADLST calculates the nuclear and atomic radiations associated with the radioactive decay /v-5.5, 05-Oct-1988/		✗ 177Lu.ens.gtol.tt	3,513 2017/05/17 12:35:19
(16) <input type="checkbox"/> RULER Calculates reduced transition probabilities /v-3.2d, 20-Jan-2009/		✗ 177Lu.ens.ndspub.err	33 2017/05/17 12:35:58
Other evaluation tools/codes		✗ 177Lu.ens.ndspub.inp	35 2017/05/17 12:35:43
(17) <input type="checkbox"/> BARON calculates model parameters for nuclear rotation bands /v1.0, 23-Jun-2014/		✗ 177Lu.ens.ndspub.pdf	440,035 2017/05/17 12:36:03
Publication tools		✗ 177Lu.ens.ndspub.pdf	440,035 2017/05/17 12:36:03
(18) <input type="checkbox"/> Upload your ENSDF file to working database /Sept. 2014/		✗ 177Lu.ens.ndspub.pa	1,721,392 2017/05/17 12:35:58
(19) <input type="checkbox"/> NDSPUB ENSDF publication program /v-12.26b, 15-Jul-2009/		✗ 177Lu.ens.ndspub.tt	21,823 2017/05/17 12:36:03
Save your files		✗ 177Lu.ens.ndspub.zeroot1	0 2017/05/17 12:35:43
(20) <input type="checkbox"/> ZIP Put all your files into ZIP archive /2015/		Total files: 20, length: 4853783 bytes =====	
		(21) <input type="checkbox"/> Submit results to NNDC /Oct-2014/ Zip and Submit to NNDC: your ENSDF file, NDSPUB Control and PDF files.	
		<input type="button" value="Run"/> <input type="button" value="[clean]"/>	

Codes in MyEnsdf (as of 2017-05-16)

Checking and utility codes

- 1) **FMTCHK** Checking ENSDF format /10.3e+, 15-Dec-2015/
- *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) **BrIcc** calculates conversion coefficients and E0 electronic factors /v2.3b, 16-Dec-2014/
- 10) **BrIccMixing** calculates Mixing Ratio (MR) and Normalization Factor (R) /v2.3b, 16-Dec-2014/
- 11) **GABS** Gamma-ray absolute intensity and normalization calculation /v-11.0, 02-Apr-2015/
- 12) **GTOL** Determines level energies from a least-squares fit to E_γ's & feedings /v-7.2h, 24-May-2013/
- * + **NEWGTOL** program for cases where GTOL does not give results due to matrix singularity (PNPI, 2009)
- 13) **LOGFT** Calculates log ft for beta decay /v-7.2, 7-Feb-2001/
- 14) **PANDORA** Checks physics of ENSDF files /v-7.0b, 01-May-2007/
- 15) **RADLST** calculates the nuclear and atomic radiations associated with the radioactive decay /v-5.5, 05-Oct-1988/
- 16) **RULER** Calculates reduced transition probabilities /v-3.2d, 20-Jan-2009/

Other evaluation tools/codes

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

Publication tools

- 18) **Upload** your ENSDF file to working database /Sept. 2014/ for editing mode * added in 2016-2017
- 19) **NDSPUB** ENSDF publication program /v-12.26b, 15-Jul-2008/

Future options of MyEnsdf

1. Now it is also available for unauthorized users (**Guests**) and can be used by students and scientists
2. Should **Java-NDS** be also running via MyEnsdf on Web servers? If yes, arrangement is needed.
3. New category “**Other evaluation tools/codes**” can be extended by general purpose programs useful for scientists working with nuclear data and students. (?)

Part III.

ENSDF Web viewers and editor

1. **Ensd+** interpreted ENSDF cards
2. **Ensd±** interactive tree-graph
3. **Ensd** web editor

1. ENSDF Interpreted ensdf+

Original ENSDF 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≤0.45·10⁻⁹sec
#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
$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



Can it be useful? e.g. →

Indication of possible problem

FL in ENSDF file

Expected FL position

1. ENSDF Interpreted

Limited interactions: collapsing blocks of information, display options

Interpreted ENSDF: ensdf+

by V.Zerkin, IAEA-NDS, 2015-2017, ver-2017-05-08

177Lu.ens

- MASS 177
 - 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)]

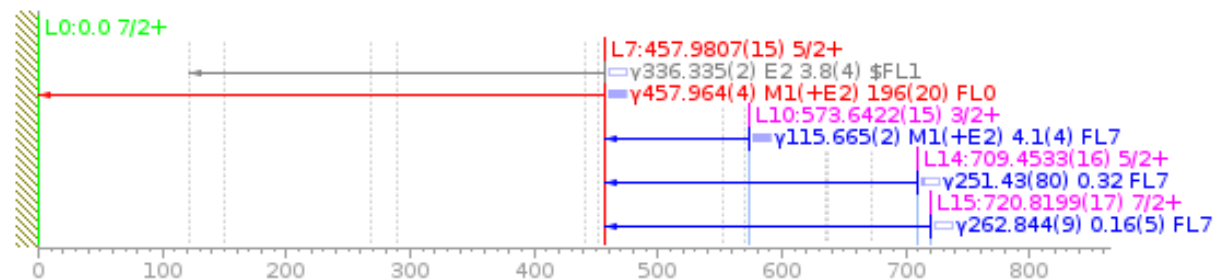
Show/Hide

- L-Fmt
- G-Fmt
- Interpret.
- #Record
- Hierarchy
- G-plot
- G-plot:ok
- L-plot/V
- L-plot/H
- L_n in/out

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

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

Level in/out γ -s #L7/148 Plot#160



Optional:
display part
of schema

2. ENSDF as interactive tree ensdf±

Welcome to ENSDF-iTree project

V.Zerkin, IAEA-NDS, 2015-2016, ver-2016-12-20

ENSDF file is presented as an interactive tree with nested structure and possibility to hide/show descriptive information and data.

184Au.ens

- MASS 184
- Nuclide 184AU
- Dataset /DECAY/ 184AU [184HG EC DECAY] #Lines:359 Records:54
 - Record Ident
 - Records /1/ Hist
 - Records /1/ GComm nRecords=8
 - Records CE /1/ GComm
 - Records G /3/ UnplacedRadiation-G nRecords=12
 - Records L /4/ Level nRecords=20
 - Level #1/20 "0.0 5+ T½=20.6 s" Lines:2 Comments:1
 - Level #2/20 "68.46 (4) 2+ T½=47.6 s" Lines:2 Comments:1 EC & radiations:1
 - Data Lines:1
 - Comments:1
 - Comment-1 Lines:1
 - 184AU cL T from Adopted Levels.
 - T from Adopted Levels.
 - EC and radiations:1
 - Gamma #1/1 "68.46 (4) M3" Lines:10 Comments:4
 - Data Lines:3

NUCID	E	DE	RI	DRI	M	MR	MP	CC	DCC	TI	DTI	EC	Q
184AU	G 68.46	4	0.90	7M3					3.19E3	2.87E+3	23		
184AUS	G LC=2.29E3	4	MC=694	10	NC+=208	3							
184AUS	G NC=178	3	OC=29.4	5	PC=0.774	11							
 - E=68.46(± 04)keV
 - Init.Level:L1:68.46(4) 2+ Final.Level:L0:0.0 5+ [E1-E0=68.46; E1-E0-Eγ = 0<1% of L1 (0.685keV)]
 - 0±0.05657
 - γ:68.46±0.04
 - Init:68.46±0.04
 - Final:0
 - 68.5
 - Relative photon intensity:RI=0.90(7)

Open/close any node of iTree

Optional display:

- bars
- cards

Interpretation

3. ENSDF Web Editor Project

2015-2017

- ❑ 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

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

- FMTCHK
- chk_ENSDF
- PREPRO
- XPQCHK
- Call MyEnsdf
- Send to MyEnsdf

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

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_{1/2}=20.6 s" Lines:2 Comments:1
Level #2/20 "68.46 (4) 2+ T_{1/2}=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:Jπ=2+,3+
Comments:0
EC and radiations:1
Edit record Edit data Remove record Ect EctCards
Gamma #1/1 "3.4 (2) (M1)" Lines:4 Comments:2
Data Lines:1
Energy=3.4(±.2)keV
init Level: L₂:Energy=71.87(±.09)keV Jπ=2+,3+ final Level: L₁:Energy=68.46(±.04)keV Jπ=2+ [E₂-E₁=3.41;
68.47±0.21932 γ:3.4±0.2 Init:71.87±0.09
Final:68.46±0.04
67 68 69 70
71 72 73
Multipolarity of transition: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

Editing in pop-up window

Records 1 /4/ Level nRecords=20 ^

- + Level #1/20 "0.0 5+ T_{1/2}=20.6 s" Lines:2 Comments:1
- + Level #2/20 "68.46 (4) 2+ T_{1/2}=47.6 s" Lines:2 Comments:1
- + Level #3/20 "71.87 (9) 2+,3+" EC & radiations:1
- + Level #4/20 "86.50 (8) (2,3)+" EC & radiations:1
- + Level #5/20 "129.13 (8) (1,2)+" EC & radiations:4
- + Level #6/20 "146.50 (12) 4+" EC & radiations:2
- + Level #7/20 "228.40 (7) 3- T_{1/2}=69 ns" Lines:4 Comments:1

Data Lines: 1

Energy=228.40(±.07)keV Spin and parity:J^π=3- T_{1/2}=69 ns

Comments: 1

EC and radiations: 4

- + Gamma #1/4 "81.9 (1) E1" Lines:4 Comments:1
- + **Edit record** **Edit data** Remove record Edit EditCard
- + Gamma #2/4 "141.8 (1) (E1+M2)" Lines:7 Comments:1
- + Gamma #3/4 "56.5 (1) E1" Lines:6 Comments:2
- + Gamma #4/4 "160.0 (1) (E1)" Lines:5 Comments:1

https://nds121.iaea.org/exfor2/servlet/EnsdfEditCode?x4act=Edit data&id=EnsDomID_0.0.0.0.10.6.R.18kwv...

https://nds121.iaea.org/exfor2/servlet/EnsdfEditCode?x4act=Edit%20data&id=...

Tree-path
...Edit Gamma Line...

Initial Gamma Record (interpreted)
Initial Level: Energy=228.40(±.07)keV Spin and parity:J^π=3- T_{1/2}=69(±6) 10⁻⁹sec
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, β	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

Data in 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]

NUCID# SE.....DE...RI..DRI...M.....MR...DMR...CC..DCC...TI...DTIIFC

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

1) Command

2) Edit data

3) Save data

Gamma #1/4 "81.9 (1) E1" Lines:4 Comments:1

[Mod] Gamma "141.8" Lines:3

[Mod] Data Lines:3

NUCID# SE.....DE...RI..DRI...M.....MR...DMR...CC..DCC...TI...DTIIFC

184AU G 141.8 2 32 4 (E1+M2)

184AU. G KC=1.725 25 \$LC=0.526 8 \$MC=0

184AU. G OC=0.00595 9 \$PC=0.000346 5

E=141.8(±.2)keV

Editing on the main window

The screenshot displays the main window of the 184Au.ens software. The menu bar includes File, Edit, View, History, Tools, Help, and About. The Tools menu is open, showing options: FMTCHK, chk_ENSDF, PREPRO, XPQCHK, Call MyEnsdf, and Send to MyEnsdf. The left sidebar shows a tree view of the file structure: 184Au.ens, MASS 184, Nuclide 184AU, Dataset /DECAY/, Record Ident, Records H, C, CE, CG, CL, P, N, PN, G, and L. The main window shows a list of levels, with Level #4/20 selected. Below the list is an editing buffer with fields for Energy (E), Decay constant (DE), Spin and parity (Jπ), Transition (T), Delay (DT), Lifetime (L), Strength (S), and other parameters. The buffer contains the following data: E=129.13, DE=8, Jπ=(1,2)+, T, DT, L, S, DS, F, MS, Q. Below the buffer are buttons for Edit record, Edit data, Remove record, Edit, and Edit radiations. The bottom part of the window shows the current level's data, including Energy=129.13(±0.08)keV, Spin and parity: Jπ=(1,2)+, and EC and radiations: 4.

Run FMTCHK on edited file

Send edited file to MyEnsdf

1) Open internal-frame for editing

2) Edit data in buffer

3) Save buffer to the file

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] #Lines:187 Records:187
 Dataset /DECAY/ 177LU [177YB B- DECAY] #Lines:187 Records:187
 Dataset /DECAY/ 177LU [177LU IT DECAY (160.44 D)] #Lines:187 Records:187
 Dataset /REACTION/ 177LU [176YB(3HE,D),(A,T)] #Lines:62 Records:62
 Dataset /REACTION/ 177LU [176LU(N,G) E=THERMAL] #Lines:68 Records:68
 Dataset /REACTION/ 177LU [176LU(D,P)] #Lines:68 Records:68
 Dataset /REACTION/ 177LU [178HF(T,A)] #Lines:41 Records:41
 Dataset /REACTION/ 177LU [(HI,XNG)] #Lines:278 Records:84

Parallel view of ENSDF datasets
 Nuclide: 177LU

Datasets //Select Datasets for further operations

#XRef	DSID	nLevels	Lev-Energy	n γ '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		
#	γ	Energy J τ	#	γ	Energy J τ
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, γ :44			17	5	761.7001 15 5/2- 32.8ns

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

(2) 177YB B- DECAY			(5) 176LU(N,G) E=THERMAL		
#	γ	Energy J τ	#	γ	Energy J τ
8	552.06 9 7/2+		8	552.0985 14 7/2+	
1) γ : 94.4 3	0.08 2 100(25) M1(+E2)		1) γ : 94.140 4	22.9 25 100(11) M1(+E2)	
2) γ : 430.5 3	0.02 1 25(13) M1+E2		2) γ : 283.33 3	0.05 5 0.22(22)	
3) γ : 552.0 1	0.07 8 88(25) M1+E2		3) γ : 401.721 9	0.43 11 1.9(5)	
			4) γ : 430.473 3	1.40 22 6.1(10) M1+E2	
			5) γ : 552.102 4	16.9 17 74(7) M1+E2	

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...M...MR...DMR...CC...DCC...TI...DTIFC 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

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

work flow

ENSDF Web Editor

Main Attractions

1. Web based (no installation needed)
2. Light and platform independent: user needs only Web browser
3. Integrated with ENSDF codes and Web systems: MyEnsdf, NSR
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

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 way how the Editor should be built are becoming clearer
3. Consultations with F.Kondev, A.Rodionov, G.Shulyak, T.Kibedi are extremely useful
4. There are still technical and general questions relevant to practices of evaluators operations on ENSDF file
5. Support from NSDD?

Thank you.