MyEnsdf Web Tools

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Topics:

Part I. Processing user's nuclear data on Web-server. Concept

- Processing user's data on Web-server
- Our Web server applications
- Web server applications: summary

Part II. MyEnsdf Web tools for ENSDF evaluators

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

Part III. ENSDF Web viewers and editor

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

Part I.

Processing user's nuclear data on Web-server. Concept.

1. Processing user's data on Web-server

Oriented to nuclear data professionals producing nuclear data

Modern definition: "Cloud computing" / "SaaS" = Software as a Service

Other types of cloud computing: IaaS (Infrastructure as a Service: disk space) and PaaS (Platform as a Service)

Structure and basic ideas



User's data can be processed together

with data from databases

Beyond traditional Nuclear Data Services we can offer <u>Nuclear Data Software as a Service</u> oriented to the nuclear data compilers and evaluators

Our 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



Web server applications: summary

Advantages:

- User does not need software installation (only Web browser)
- Central maintenance of utilities (only one platform on Web server)
- It can implement specific operations connecting with central database and Web (e.g. search for duplications of EXFOR references, DOI checking,...)
- Convenient Web interface to old legacy codes (automatic connection input-output of programs)
- Comparison users' data with data from central databases

Disadvantages:

- User needs Internet or can have problems with Internet connection (possible solution: VM technology)
- Adding new program: replace sequential dialogue by single web input-form

Potential problems and limitations:

- Speed, resources on server computer system
- IT security (current solution: password protection)

Part II.

MyEnsdf Web tools for ENSDF evaluators

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

MyEnsdf: programs and operations

Run remotely ENSDF analysis and utility codes:

- FMTCHK /10.4, 10-May-2017/ - chk ENSDF /v-0.4.7, 10-Apr-2014/ - chk PARENT /24-Jan-2009/ - chk_brackets /20-Apr-2012/ - PREPRO, XPQCHK /2014/ - ALPHAD, ALPHAD_RADD /v-2.0a, 06-Nov-2006, RaddD:16-Aug-2016 / - Brlcc, BrlccMixing /v2.3b, 16-Dec-2014/ - GABS /v-11.0, 02-Apr-2015/ /v-7.2h, 24-May-2013/ - GTOL /v-7.2, 7-Feb-2001/ - LOGFT /v-7.1c, 12-Oct-2017/ - PANDORA /v-5.5, 05-Oct-1988, parameters: 2012/ - RADLST /v-3.2d, 20-Jan-2009/ - RULER

Run remotely <u>NDSPUB</u>: *//old*

generates tables and drawings; allows editing control file for producing final PS/PDF; connected to NNDC relational databases: ENSDF and NSR

- Views: <u>ensdf+</u> (interpreted "ENSDF cards"); <u>ensdf±</u> (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 co-ordinators

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.



Request #12 User: Zerkin Access level=2 Project: tmp1 Uploading Your input: 29Kb (296 Ensdf file Total: 361 lines Nuclide: 184AU See: your file: 184Au.ens-00, wo End of work: after you finished, p	02 l orkir olea	bytes) ng file: 184Au ase, remove y	L.ens. ENSE your files a	UNDING ENSDF Coc v.Zerkin, IAEA-NDS, 2011-2018	es on Web (ver.2018-05-03) ns, history	- Ci	all viewers and editor	Main panel	
Programs parameters run results	iii c	Timer	ut: 600 se	20	Your Files [refresh]	50	rt hv: [name] [extension] [length] [time]		
Checking and utility codes		Times			× 1943u ong 00		20 602 2019/10/16 15:29:22		
 Checking and utility codes (1) ■ ■ FMTCHK Checking ENSDF Analyzes the format of an ENSDF formatted TEvaluated Nuclear Structure Data File. A Mai /by J.K.Tuli, NNDC, Brookhaven National Li Input File: 184Au.ens ▼ Errors only (or full report) ♥ Check continuation cards □ Report only fatal errors □ Suppress warning message: □ Suppress XREF/DSID check Runi Stopi Tresult] [termin × 184Au.ens.fmtchk. × 184Au.ens.fmtchk. × 184Au.ens.fmtchk. (2) ● Chk_ENSDF Total ENSDF check ⊕ PNPI checking codes (see [pag (5) ● SPREPRO 'some' preprocessin (6) ● XPQCHK checks consistency (7) ● ENSDF_to_XML converts file Analysis codes 	s s inp inp tt ckee ge]) ig /2 of c e EN	(clean) (cl	lay-2017/ forms to Data Sets" Ru 27 2018/1 40 2018/1 52 2018/1 2014/ n on p-card /G.Shulyak, PNF	Timeout Parameters n/interrupt program Output files 0/16 15:29:49 0/16 15:29:49 0/16 15:29:49	 184Au.ens-00 184Au.ens.fmtchk 184Au.ens.fmtchk. 184Au.ens.fmtchk. 184Au.ens.fmtchk. 184Au.ens.fmtchk. 184Au.ens.ndspub. 184Au.ens.ndspub. 184Au.ens.ndspub. 184Au.ens.ndspub. 184Au.ens.ndspub. 184Au.ens.ndspub. 184Au.ens.pandora 	err inp tt err inp pdf ps tt zeroct a.err a.err a.err a.err a.err a.err a.err a.err a.err a.err a.err a.err a.err a.err a.err t.t zeroct a.err b.err a.err a.err a.err a.err a.err a.err a	29,602 2018/10/16 15:28:23 29,241 2018/10/16 15:29:49 0 2018/10/16 15:29:49 40 2018/10/16 15:29:49 662 2018/10/16 15:29:49 662 2018/10/16 15:29:49 33 2018/10/16 15:32:13 35 2018/10/16 15:32:12 60,163 2018/10/16 15:32:14 172,859 2018/10/16 15:32:13 2,905 2018/10/16 15:32:12 29,241 2018/10/16 15:26:10 0 2018/10/16 15:26:10 301 2018/10/16 15:26:10 7,336 2018/10/16 15:26:10 41 2018/10/16 15:26:10 3,368 2018/10/16 15:26:10 1,305 2018/10/16 15:26:10 1,305 2018/10/16 15:26:10 1,090 2018/10/16 15:26:10 1,580 2018/10/16 15:26:10 bytes	Working files	It
 (8) ■ ALPHAD Alpha Hinderance Factors (9) ■ ALPHAD_RADD Alpha Hindera Aug-2018/ 	ctor ance	· Program (AH e Factor Progr	F, AHFYE, Al am (AHF, Al	.PHAD) /v-2.0a, 06-Nov-2006/ IFYE, ALPHAD) /v-2.0a + RaddD:16-	(22) Submit results Zip and Submit to NNDC: y	to NND /our ENSI	=== C /Oct-2014/ DF file, NDSPUB Control and PDF files.		
(10) 🗄 BrIcc calculates conversion c	oef	ficients and E0) electronic f	actors /v2.3b, 18-Dec-2014/	Run [clean]	1	🕗 Mozilla Firefox		_ [
(11) 🗄 BrIccMixing calculates Mixing	g Ra	atio (MR) and I	Normalizatio	n Factor (R) /v2.3b, 16-Dec-2014/			https://www-nds.iaea.org/exfor/servlet/EnsdfF	RunUtil	
(12)	nter ies eta (from a least-s	alization cal quares fit to -Feb-2001/	culation /v-11c, 08-Jan-2017/ Ey's & feedings /v-7.2h,			Treatment ENSDF file by FMTCHK program Basic file: 184Au.ens Input file: 184Au.ens Timeout: 10min		
(15) PANDORA Checks physics of	- L	IST OF NSR-RE	Author 4	Show: M DOI L Authors L I	itle	DOL	Elapsed time=00:00:0	2finished	
(16) IT RADLST calculates the nuclea /v-5.5, 05-Oct-1988/	1	1969HA03 pdf	P.G.Hansen	Phys.Lett. 28B, 415 (1969); Erratum Ph (1969)	hys.Lett. 28B, 663	10.10		start	
(17)	2	1970FIZZ pdf	M.Finger	CERN-70-29 (1970); see 1970FI16			FMTCHK version 10.4 [10-May-2017]		
Other evaluation tools/codes	3	1970HA18 pdf	P.G.Hansen	Nucl.Phys. A148, 249 (1970)		10.10	INPUT file (DEF: fmtchk.inp): OUTPUT fil	Le (DEF: fmtchk.rpt):	
(18) E BARON calculates model para	4	1971HU02 pdf	H.Hubel	Phys.Rev. C3, 756 (1971)		10.11	Errors only or full report (E, F): Check of 1844U 184HG EC DECAY	continuation cards (Y, N): Report only fatal e	rror
Publication tools	5	1972FI12 pdf	M.Finger	Nucl.Phys. A188, 369 (1972)		10.10	2 error(s) reported	5545,15541801,1570MELOIONES 201002	
	6	1975H003 pdf	P.Hornshoj	Nucl.Phys. A239, 15 (1975)		10.10	1 warning(s) reported		
	7	1978NE10 pdf	W.G.Nettles	J.Phys.(Paris) 39, 343 (1978)			Program completed successfully		
(20)	8	1990ED01 pdf	R.Eder	Hyperfine Interactions 59, 83 (1990)			Program: fmtchk Error-code=0 main prog	finish	
Save your files	9	1994IB01 pdf	F.Ibrahim	Z.Phys. A350, 9 (1994)					
(21) TIP Put all your files into ZIP a Note. Codes are updated on requests of the second sec	10	1994R0ZY	B.Roussiere	Proc.8th Int.Symposium on Capture Ga Related Topic, Fribourg, Switzerland, 2 J.Kern, Ed., World Scientific. Singapore	amma-Ray Spectroscopy and 20-24 September 1993, e, p.231 (1994)		File: 184Au.ens.fmtchk EVALUATED NUCLEAR STRUCTURE DATA FILE	SYNTAX CHECK FMTCHK version 10.4	AS
🗉 List of Datasets and Nuclides	11	1994WA23 pdf	J.Wauters	Phys.Rev. C50, 2768 (1994)		10.11			
T List of NSR-References Show:	12	2003IBZZ pdf	F.Ibrahim	Priv.Comm. (2003)			:	4	

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 $E\gamma$'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	f Dat	ase	ts and Nuclides										
# Mass	Nucl	DR	DSID		DSType	nRec	nLines	nLevels	γ's	DS	Nuclide		
1 177	177L	U	ADOPTED LEVELS, GAM	MAS	ADOPTED	256	1417	204	331	ds ds+	1) nuc nuc+ 177LU		
2 177	177L	UΒ	177YB B- DECAY		DECAY	36	187	17	44	ds ds+			
3 177	177L	υc	177LU IT DECAY (160.44	4 D)	DECAY	24	81	7	10	ds ds+			
4 177	177L	UΕ	176YB(3HE,D),(A,T)		REACTION	54	62	36		ds ds+		Get Nuclide: ensdf, ensdf+	
5 177	177L	υA	176LU(N,G) E=THERMAL	_	REACTION	550	1451	148	722	ds ds+			
6 177	177L	υD	176LU(D,P)		REACTION	59	68	45		ds ds+			
7 177	177L	UF	178HF(T,A)		REACTION	39	41	27		ds ds+		Get Dataset: ensdf, ensdf+	
8 177	177L	UG	(HI,XNG)		REACTION	84	278	65	118	ds ds+			
			•										
1 7 7 7 7 7	17	CT 11			1071M-45	10750	-11 100	(D-0502)	DO	2002			
1771.II	1/ H TV	D=LI D=LI	(N,G) E=THERMAL ILSAUT=F C KONDEVSC	ידי=ייד	19/1Ma45, 19 98 801	,19/50 1 (200	911,199 13)\$CUT=	1-Aug-20	DS 025	2003	05		
177LU (C 19	96Pe	e05: Measured: EG, I	G,	001	1 (200	579001	1 110g 20	029				
177LU20	C Be	nt c	crystal spectrometer	I I	nterprete	ed El	SDF:	ensdf+					5
177LU (C 19	75Ge	ell: Measured: EG, I	G. b	y V.Zerkin, IAE	A-NDS,	2015-2017	, ver-2017-1	0-25				Show/Hide
177LU20	C Ga	mma-	-ray anti-Compton sp	ec -	177Lu.ens #	±4							□ L-Fmt
177LU (C 19	/1Ma	145: Measured: EG, I	.G ,	- MASS 177 :	*							✓ Interpr
177TT (C GE	(LI) bor:	0 detectors. 1005ch10 1003p-30		- Nuclide 17	7LU 🕿							#Record
1771.1120	~ 19	81St	-28. 1980Be05. 1978A	11	- Dataset /	REACTIO	DN/ 177LU	[176LU(N,G)	E=TH	ERMAL] 🖄			Hierarc
177LU30	C 19	72Be	e85, 1971Be40, 1971M	1i0:	- Ident	76LU (N	C) E-THERM	IAT.	1971	Ma45 1975	5Ce11 1996De0503NDS 20	200305 #Record 1/1 Ident Line:1748	G-plot
177LU40	C 19	65He	e06 .		- Hist	H F	Record(s): 1	HD .	19/1	ma45,1575	JGE11,1990FE0303ND3 20		L-plot/
177LU (CL E\$	Fro	om a least-squares f	it	177LU H T	YP=FUL\$	AUT=F.G. K	CONDEV\$CIT=N	IDS 98	, 801 (20	003)\$CUT=1-Aug-2002\$	#Record 1/1 Hist Line:1749	L-plot/
177LU20	CL sp	ecif	fied.									#AUT: F.G. Kondey	L L _n in/or
177LU (CL J\$	From	n the measured elect	roi		*****						#CIT: NDS 98, 801 (2003)	
177LU20	CL ba	nd s	structure with both	ca:	LCComm	~~~~		~~~~~~	*****	~~~~~~		**************************************	
177TT	JL TT ST me	ansı Erer	LTIONS.	1.0	177LU C 1	.996Pe05	: Measured	: EG, IG, H	CE, I	CE, GG co	pin, GG(T).	#Record 1/4 GComm Line:1750[2]	
177LU (⊂⊥ ⊥γ ℃L Ε(rion A) Ŝ	PT 7/2[404] (a{-7/2	116:	177LU2C B	ent cry	stal spect	rometer. Do	uble	focusing	magnetic spectrometer.	1996Pe05 ^[pdf] : Measured: EG, IG, ECE, ICE, GG coin, GG(T). Ber	it crystal
177LU20	CL is	suc	ported by the obser	ve								spectrometer. Double focusing magnetic spectrometer.	
177LU30	CL an	d g{	[-K}-g{-R} values ((q{·	177LU C 1	975Ge11	: Measured	: EG, IG. 0	Gamma-	ray band-	-filter spectrometer.	#Record 2/4 GComm Line:1752[2]	
177LU40	CL we	ight	ed average from val	ue		amma-ra	y anti-Com	pton specti	Omete	r.		1975Ge11 ^[pdf] : Measured: EG, IG. Gamma-ray band-filter spectro	meter.
177LU50	CL an	d sy	stematics of simila	r		<u></u>		<u> </u>	<u></u>	<u></u>		Gamma-ray anti-Compton spectrometer.	
177LU60	CL nu	clei	L.		177LU C 1	971Ma45	: Measured	: EG, IG, H	CE, I	CE, GG co	oin. B spectrograph.	#Record 3/4 GComm Line:1754[2]	
177LU (CLE(B)\$	PI 9/2[514] (h{-11/	2}				*******				1971Ma45[port]: Measured: EG, IG, ECE, ICE, GG coin. B spectrog GE(LI) detectors	,raph.
177LU20	JL 15	sup	ported by the obser	ve	17710 C 0	ther: 1	0055h19 1	993Be20 10		5 10972-	53 19860k02 1984Re24	#Record 4/4_GComm_Line:1756/41	
					177LU2C 1	981St28	, 1980Be05	, 1978All2,	1972	Ma54, 197	72Mi16, 1972Ge20, 1972Ful	112, Other: 10055h18[pdf] 1003Be30 1088Ca05[pdf] 1087Be53	
					177LU3C 1	972Be85	, 1971Be40	, 1971Mi01,	1970	F109, 197	70Be56, 1968Be70, 1965Ma1	118, 1986Ok02 ^[pdf] , 1984Be34 ^[pdf] , 1981St28, 1980Be05 ^[pdf] , 1978Al	12[pdf]
								*******	****			XXXX 1972Ma54 ^[pdf] , 1972Mi16 ^[pdf] , 1972Ge20 ^[pdf] , 1972Fu12 ^[pdf] , 197	72Be85,
												1971Be40 ^[pdf] , 1971Mi01 ^[pdf] , 1970Fl09, 1970Be56, 1968Be70,	
												1965Ma18(Peri), 1965He06(Pari).	
					- GComm	CL F	Record(s): 2	7 	. +k-	C	anging uplage athenning	#Record 1/27, CComm Line:1760(2)	
					177LU CL E	.≽ from	a ieast-sg	uares Iit t	o the	G ray er	ergies, unless otherwise		

Main panel: list of NSR References



Note. Authors, Reference, DOI's, Title are taken from NSR database on the fly

Programs' parameters, output files

•				
FMTCHK	 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 	<pre>X 184Au.ens.fmtchk X 184Au.ens.fmtchk.inp X 184Au.ens.fmtchk.tt</pre>	1,027 40 662	2018/10/17 15:03:54 2018/10/17 15:03:53 2018/10/17 15:03:54
chk_ENSDF	Chk_ENSDF Total ENSDF checker /v-0.4.7, 10-Apr-2014/ Written by G. Shulyak, Petersburg Nuclear Physics Institute Nuclear Data Center [page]). Analyzes the format of an ENSDF formatted file to verify that it conforms to "Eva File. A Manual for Preparation of Data Sets", BNL-NCS-51655-01/02-Rev	, Russia, 1996-2014 (see aluated Nuclear Structure Data		
	Input File: 184Au.ens	× 184Au.ens.chk ENSDF.err	2,032	2018/10/17 15:07:54
	-w: Suppress warning messages	× 184Au.ens.chk ENSDF.tt	157	2018/10/17 15:07:54
	<pre>-x: values: [<=\$~01deFGHINpPrui = Short help from the program -d level - output level (default = 0) -w - no warning messages -x flags - suppress any messages < - ignore 'value <= dvalue' message = - ignore 'value == dvalue' message \$ - ignore 'extra \$' message ~ - ignore 'COND impossile with DVALUE 0 - used '1' in comments as 1-st record 1 - suppress '1' in comments d - suppress 'Invalid DATE' message e - ignore empty field of E/DE F - ignore 'undefined FLAG' message G - ignore skipped uncertainty in '2 G H - ignore 'H'-record 1 - ignore 'Incompatible NUCID' message p - suppress 'Invalid PUB' message P - consider "PG" and "PL" as comm r - suppress 'Src(Reaction)Dst' message u - consider "2u " as comment</pre>	<pre>x] (see help below) y message d of comments y: KC, LC, MC, e ent e</pre>		
	X - ignore '2 L XREF=x(2)'			

Programs' parameters, output files

Bricc	 BrIcc calculates conversion coefficients and E0 electronic factors /v2.3b, 18-Dec-2014/ Brlcc v2.3b (by T.Kibedi, 2003-2014) calculates conversion coefficients (for electron conversion and pair production) and E0 electronic factors using cubic spline interpolation. See [manual] 										
	Input File: 184Au.ens										
	List conversion coefficients for all subshells										
	Calculate conversion coefficients for all transitions										
	Lowest CC value to be put on G-card: 1e-4 (default 1.E-4)										
	Assumed value MR for E2/MI transitions: 1 (default 1.)										
	Run [result] [terminal] [clean]										
	× 184Au.ens.bricc.BrIcc.lst 184,092 2018/10/17 15:12:56										
	X 184Au.ens.bricc.Cards.mrg 29,646 2018/10/17 15:12:56										
	X 184Au.ens.bricc.Cards.new 18,391 2018/10/17 15:12:56										
	X 184Au.ens.bricc.Compar.lst 29,892 2018/10/17 15:12:56										
	× 184Au.ens.bricc.ens 29,241 2018/10/17 15:12:56										
	× 184Au.ens.bricc.inp 21 2018/10/17 15:12:54										
	× 184Au.ens.bricc.tt 8,277 2018/10/17 15:12:56										

BrlccMixing

E BriccMixing calculates Mixing Ratio (MR) and Normalization Factor (R) /v2.3b, 18-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/ed	dit text below	See how-to in:	[manual]	Use example:	[1] [2] [3]				
99TC G 140.511 1 3	100 M1+E2	+0.13	4						
99Tc 140.511 1									
M1+E2 0.13 1.0									
# NsrKey Shell Id	ccVal Unc	Type							
1981Ge05 K 0.	.097 3	A				-			
1981Ge05 T 0.	.119 3	A				_			
1969Ag04 L1/L2 12	2 4	R							
Note. Results are collected in the files *.htm and *.zvd									
Run [result] [terminal]	[clean]								
× 184Au.ens.brid	cmixing.BrIccl	Mixing.in	361	2018/10/17	15:15:15				
× 184Au.ens.brid	cmixing.BrIccl	Mixing.lst	2,450	2018/10/17	15:15:17				
× 184Au.ens.brid	cmixing.BrIccl	Mixing 01.dat	279,219	2018/10/17	15:15:15				
× 184Au.ens.brid	cmixing.BrIccl	Mixing 01.plt	2,464	2018/10/17	15:15:15				
× 184Au.ens.brid	cmixing.err		70	2018/10/17	15:15:17				
× 184Au.ens.brid	cmixing.htm		1,881	2018/10/17	15:15:17				
× 184Au.ens.brid	cmixing.in		361	2018/10/17	15:15:15				
× 184Au.ens.brid	cmixing.inp		3	2018/10/17	15:15:15				
× 184Au.ens.brid	cmixing.tt		2,696	2018/10/17	15:15:17				
×*184Au.ens.brid	cmixing.zvd		217,328	2018/10/17	15:15:17				

Wrapping program BrlccMixing

BrlccMixing

 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]



Programs' parameters, output files

GTOL Determines level energies from a least-square	s fit to Eγ's & fee	dings /v-7.2h, 2	4-May-2013/						
Input File: 184Au.ens									
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%, Hsic	c-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]									
× 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	× 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

GTOL

E 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

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]
 - × 184Au.ens.pandora
 - X 184Au.ens.pandora.err0
 - × 184Au.ens.pandora.gam
 - × 184Au.ens.pandora.gle
 - × 184Au.ens.pandora.inp
 - × 184Au.ens.pandora.lev
 - × 184Au.ens.pandora.rad
 - X 184Au.ens.pandora.rep
 - × 184Au.ens.pandora.tt
 - X 184Au.ens.pandora.xrf

- 29,241 2018/10/17 15:23:09 301 2018/10/17 15:23:09 9,464 2018/10/17 15:23:09 7,336 2018/10/17 15:23:09 41 2018/10/17 15:23:09 3,368 2018/10/17 15:23:09 1,305 2018/10/17 15:23:09 226 2018/10/17 15:23:09 1,090 2018/10/17 15:23:09
 - 1,580 2018/10/17 15:23:09

Programs' parameters, output files

RADLIST	RADLST calculates the nuclear and atomic radiations associated with the radioactive decay /v-5.5, 05-Oct-1988/ The program RADLST (Radiation Listing) is designed to calculate the nuclear and atomic radiations associated with the radioactive decay of nucley. It uses as its primary input nuclear decay data in the ENSDF format. By T.W.Burrows Brookhaven National Laboratory. See [manual]									
	Input File: 184Au.ens									
	Output Radiation Listing									
	Output ENDF-like File									
	Cutput File For Nudat									
	Output Mird Listing									
	Calculate Continua									
	Calculate Bremsstrahlung									
	Run [result] [terminal] [clean]									
	X 184Au.ens.radlst.ENSDF.RPT	13,825	2018/10/17 15:26	:44						
	× 184Au.ens.radlst.inp	19	2018/10/17 15:26	5:44						
	X 184Au.ens.radlst.RADLST.INP	29,241	2018/10/17 15:26	5:44						
	X 184Au.ens.radlst.RADLST.RPT	32,412	2018/10/17 15:26	5:44						
	× 184Au.ens.radlst.tt	1,393	2018/10/17 15:26	:45						

RULER

E RULER Calculates reduced transition probabilities /v-3.2d, 20-Jan-2009/ RULER (1984-2009) either calculates the reduced electromagnetic transition strengths and compares these to the Recommended Upper Limits (RUL) or calculates BEXW and BMXW for inclusion in ENSDF datasets. See [manual]

Input File: 184Au.ens								
Mode of Operation: C Calculate BEAW and BMAW								
Assumed DCC theory (%): 1.4 (Bricc-1.4%,	Hsicc-3%, etc.)							
Run [result] [terminal] [clean]								
× 184Au.ens.ruler.inp	41 2018/10/17 15:28:46							
× 184Au.ens.ruler.rpt	47,512 2018/10/17 15:28:46							
× 184Au.ens.ruler.tt	722 2018/10/17 15:28:46							

Wrapping program BARON

				•										
_		Other evalua	tion tools/codes											
BA	ARON	BARON c	alculates model p	arameter	s for nuclear rotation b	ands /v1.0, 2	3-Jun-2014/							
		by L.P.Kabina, S.S	r evauation and model of S.Lisin, I.A.Mitropolsky,	tescription of T.M.Tvukavin	nuclear rotation bands a (PNPI, 2014-2016), See [Prep	rint.rus1								
		A:107	Z:71		- (, , , ,									
		NC:10 r	number of calcula	ted levels										
		K:5 p	projection of spin	or minima	il spin									
		🔽 вм (Bohr-Mottelson m	nodel)										
		VMI	(Variable Moment	t of Inertia	a model)									
			hatic limit 🔍 🗛	heolute ur	certainties									
		Sign	atura shift On											
		E Detation			certainties no/posto/odit toxt bolo			Evampla	or [1] [2]	[2]				
			181 Danu (1 C(1) ([Mev] } ly	pe/paste/edit text belo	W See [F	eprintj	Example	S; [1] [2]					
		13/2 1.9	90006			/			1	▲				
		17/2 2.7	74565			Welcome to	BARON	on Web						
		Note, Resul	lts are also prese	nted in th	e files *.htm and *.zvd	Running: 20	18/10/17:	15:31:54						
		Rund Tress	ult] [terminal]	[clean]		10/Lu Band	1 with $K =$			50.000 Marc				
		<u>Kun</u> [rest	84Au ens baron	htm.		5/2 2.5	K-E(EXP),M	ev E(EXCI),Me	0.398	0.286	J 6.994			
		× 1	84Au.ens.baron	.inp		7/2 9.5			0.697	0.682	10.408			
		× 1	84Au.ens.baron	.prn		9/2 18.5	1.058		1.058	1.069	12.786			
		× 1	84Au.ens.baron	1.temp		13/2 42.5	1.900		1.900	1.880	16.607			
		× 1	84Au.ens.baron	.tt		15/2 57.5			2.336	2.310	18.281			
		×∗1	84Au.ens.baron	n.zvd		17/2 74.5	2.746		2.746	2.755	19.857			
	Create	d by BARON on Web 2	2018/10/17:15:31:54			21/2 114.5			3.358	3.691	22.793			
		107Lu Band w	vith K=5	150		23/2 137.5			3.486	4.181	24.177			
	U T			150		Rand with	V - 5/	°						
	4 - 📩	E(Exp) E(BM)	/	4		MODEL FOR	BANDS W	2 ITH K > 1/	2					
	E = =	E(UMI)				BM polynd	mial par	ametrizati	on					
	-			•		9/2	MeV DE 1.0583	(EXP), MeV 0.0010	E(CALC), 1.0583	MeV (Ee	(жр-ксал)	0.00	(Eexp-Ecalc)/	0.00
	3			- 3		13/2	1.9001	0.0010	1.9001	0.00)	0.00	0.00	0.00
	-	G		-		17/2 E0[MeV]	2.7457	0.0010 688+00	2.7457	0.00)	0.00	0.00	0.00
Ŋ				-		A [MeV]	0.4449	59E-01	0.153E-03					
х ш	-			-		B [MeV]	-0.1544	55E-03	0.160E-05					
	2 -	*	14 De	- 2		VMI paran	etrizati	on kev						
			16-7A-54	-		I E(EXP),	MeV DE	(EXP), MeV	E(CALC),	MeV J, M	leV-1	((Eexp-Ec	alc)/DE)**2	
	-	EO/MD	x=74.5 x=2.755			9/2	1.0583	0.0010	1.0686	12.7	/86 507 -	10.36 19.97	107.31 398.72	
	1	E(BM)	x=74.5 y=2.746	-1		17/2	2.7457	0.0010	2.7552	19.8	57	9.51	90.36	
	- /		[A=r4.3 y=2.r40]	-		E0 [MeV]	0.4641	82E-01 57E+01	0.305E-02					
	[2			1		C [MeV+3]	0.5358	07E-02	0.216E-04					
	0	50	100	150		G	0.5906	57E-01	0.598E-02					
						DEDIA.	17. I	UU Kev						



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)
 - Lemporary and permanent areas
 - privileged users
 - continuing work (multiple entries)

Part III.

ENSDF Web viewers and editor

- 1. Ensdf+ interpreted ENSDF (records-cards)
- 2. Ensdft interactive tree-graph
- 3. Ensdf++ web editor

1. ENSDF interpreted ensdf+

Original ENSDF text



1. ENSDF interpreted ensdf+



#L7/148 L7:457.9807(15) 5/2+ Level in/out y-s #L7/148 Plot#160 L0:0.0 7/2+ y336 335(2) E2 3.8(4) \$FL1 y457.9807(15) 5/2+ y457.9807(15) 5/2+ y457.9807(15) 5/2+ y457.9807(15) 5/2+ y457.9807(15) 5/2+ y457.9807(15) 5/2+ y457.9807(15) 5/2+ y452 3.8(4) \$FL1 y457.985(2) MI (+E2) 4.1(4) FL7 y115.865(2) MI (+E2) 4.1(4) FL7 y251.4380(0) 0.32 FL7 L15:720.8199(17) 7/2+ y262.844(9) 0.18(5) FL7 0 100 200 300 400 500 800 700 800	Current level L7 Show/Hide L-Fmt G-Fmt Interpret. #Record Hierarchy G-plot Display option
177LU L 457.980715 5/2+ 0.45 NS LE C 177LU CL T\$From 1996Pe05. Other: T LT 0.8 NS (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]).
177LU G 336.335 2 3.8 4 E2 177LU 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.	#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 121.6457±0.0025 Init:457.9807±0.0015 V:336.335±0.002 Final:121.6296±9.0E-4 457.97 457.98 457.99 Final:121.6296±9.0E-4 FL 1: [5σ] 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[pdf]). Note, that values overlap with these for the 336.33G depopulating the state at 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).	<pre>#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]).</pre>

#L36/148 L36:1150.767(21) (11/2+) Level in/out γ-s #L36/148 Plot#189	Current level L36
L1:121.6296(9) 9/2+ L30:1019.873(22) (9/2+) L30:1150.767(21) (11/2+) V1030.873(5) 0.38(6) FL30 V244.31 E2 7.1 7FL24 V1030.0(8) (MI (+E2)) 7.7(13) FL1 L47:1318.645(21) (13/2+) L47:1318.645(21) (13/2+) U107.872(2) 2.4(3) FL36 L47:1318.645(21) (15/2+) V107.872(2) 2.4(3) FL36 L47:1318.645(21) (15/2+) V107.872(2) 2.4(3) FL36 U107.872(2)	FL is not given
177LU L 1150.76721 (11/2+) t 177LU G 130.873 5 0.38 6 Y	#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-Ey =0.021=0.5σ] Relative shoten integrity: PI=0.28(6)
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). 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. 1201.649 KEV level.	Relative photon intensity:RI=0.33(0) INCall EST L24*, [140] #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] 906.457±0.021 y:244.31 y:244.31 Final:906.74±0.05 1150.6 1150.8 1150.8 1150.8 y:244.31 y:244.31
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 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±



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 ensdf++



Editing in pop-up window



Editing on the main window



Integrated editing



Parallel view of ENSDF datasets Nuclide: 177LU

Datasets //Select Datasets for further operations

0 REACTION

0 REACTION

0 REACTION

M1+E2

Run GTOL

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

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 be work are becoming clearer
- Consultations with experienced evaluators are needed (from time to time)
- There are still technical and general questions relevant to the best practices and implementation of evaluators operations on ENSDF file

Thank you.

Citing of the materials of this presentation should be done with proper acknowledgement of the IAEA and author