

Validation/Testing work at LLNL

D.A. Brown for LLNL/CNP Group

- phpBugTracker
- Typical ENDF/B-VII Bugs
- Future plans



Bugs tracked internally (for now)

phpBugTracker - Home

http://oban/phpBT/index.php

mail.llnl.gov MyLLNL LLNL Access CSEWG NNDC CNP Big Actinide Scorecard ENDF/B-VI Bugs News Google Yahoo!

phpBugTracker

Find Bug

Home Add a new bug Query Bugs View Reports Create a New Account Read Documentation

Email: Password:

Five most recently submitted bugs

- Multiplicity for (n,2n) and (n,3n) not quite right (ENDF/B-VIIbeta0)
- Multiplicity for (n,2n) and (n,3n) not quite right (ENDF/B-VIIbeta0)
- MF3 and MF6 incident energies not in sync (JEFF-3.1)
- MF3 and MF6 incident energies not in sync (JEFF-3.1)
- MF3 and MF6 incident energies not in sync (JEFF-3.1)

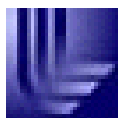
Quick Stats

Status	# bugs
Unconfirmed	71
New	0
Assigned	3
Reopened	0
Resolved	16
Verified	0
Closed	3

Five most recently closed bugs

- Multiplicity for (n,2n) and (n,3n) not quite right (ENDF/B-VIIbeta0)
- Multiplicity for (n,2n) and (n,3n) not quite right (ENDF/B-VIIbeta0)
- 234U (MAT=9225) (ENDF/B-VIIbeta0)
- 233U (MAT=9222) (ENDF/B-VIIbeta0)
- 232U (MAT=9219) (ENDF/B-VIIbeta0)

Project	Open	Fixed	Not a bug	Won't Fix	Deferred	Works for me	Duplicate	Total
ENDF/B-VIIbeta0	6	2	1	0	0	0	0	9
ENDF/B-VI.r.8	36	0	0	0	0	0	0	36
ENDF/B-VI.r.8McLane	19	6	2	0	0	0	0	27
IAEA Photonuclear Database	1	0	0	0	0	0	0	1
JEFF-3.0	1	7	0	0	0	0	0	8
JEFF-3.1	10	0	0	0	0	0	0	10
JENDL-3.3	1	0	1	0	0	0	0	2



Customizable views

Back Forward Reload Stop <http://0bar1.phpb1/query.php?project=7&status%3B%3D=1&status%3B%3D=2&st> Search Print

[Home](#) [Bookmarks](#) [MyLLNL](#) [CNP](#) [PAT](#) [LITE](#) [meetingmaker](#) [Physics News](#) [Physical Data](#) [Slashdot](#) [Google](#) [News](#)

phpBugTracker

Find Bug

[Home](#) [Add a new bug](#) [Query Bugs](#) [View Reports](#) [Read Documentation](#) [Administration Tools](#)

Bugs assigned to me: 0 / 0 | Bugs reported by me: 28 / 11 | [Personal Page](#) | [Logout](#)

ID	Title	Description	Priority	Component
18	237Np (MAT=9346)	There are two problems with this evaluation: a typo and two conflicting options. The typo in the ENDF/B-VI file involves a permutation of 2 digits in line 16340 (MF=12 data for MT=59). The thrd entry in the line is 5.935700+4 and it ought to be 5.953700+4. What happens here is that the MF=12 file gives the probability of jumping to various levels, and we are trying to jump to a level which does not exist. The other problem is that discrete gamma data for inelastic (n,n') is represented as a continuum cascade with gamma energy shifted by a mass ratio. This is the result of a mix of 2 incompatible ENDF/B-VI options: -For inelastic scattering the evaluator may represent the data as energy levels with branching ratios for the jumps to the lower levels (LO=2). -For compound reactions the continuum gammas may be represented as a set of discrete lines (LO=1), and there is a rule for shifting the frequencies of these lines, depending on the energy of the incident particle (LP=2). It makes no sense to say that the discrete lines form inelastic scattering (MT=51,52,...,MT<91) represent a gamma continuum, but that is what is in the ENDF/B-VI file. (The flag is set LO=2 in place of LO=1)	3 - Medium	za093237
80	Wrong number of angular components specified for outgoing alpha in MF6 MT849	The NA flag was mistakenly set to 0 for the first two incoming energy tables. As a result, there was a mis-match between the specified table size and the number of coefficients stored in the table. NA should be set to 1 for both energies. The offending sequence numbers are 6 and 11. These also explain the errors found by CHECKR on the NNDC web site.	3 - Medium	za042095
81	Wrong number of angular components specified for outgoing proton in MF6 MT649	The NA flag was mistakenly set to 0 for the first two incoming energy tables. As a result, there was a mis-match between the specified table size and the number of coefficients stored in the table. NA should be set to 1 for both energies. The offending sequence numbers are 9 and 14. These also explain the errors found by CHECKR on the NNDC web site.	3 - Medium	za043099

1 - 3 of 3

[Download to spreadsheet](#)



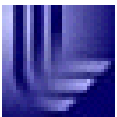
Why phpBugTracker?

- Open source
- Same feature set as Bugzilla
- Installs by RPM on Linux
- Bugs stored in MySQL database
- Easy to use
- Can export to spreadsheet (feature not working in version we have installed)



Bug summary

- Common bugs:
 - Energy's aren't balanced (known issue)
 - MF=3: Q values are “old” (known issue)
 - MF=6: Multiplicities not quite constant & not quite integers (i.e. varies from 1.0 to 1.0001)
 - MF=4: Data in wrong frame
 - MF=12: Confused discrete γ 's
- Several bugs previously reported for ENDF/B-VI_{r8} and ENDF/B-VII β 0 still not fixed:
 - ^{237}Np (confused γ 's in MF=12 for (n,n'))
 - ^{242}Am , $^{242\text{m}}\text{Am}$ (multiplicity not constant in (n,2n), (n,3n))
- Complete list available from me



Future Plans

- Automated library testing against suite of test problems
 - Monte-Carlo & deterministic modes
 - Jezebel, Godiva and friends
- Testing data from ENDL and ENDF formats
 - formatting
 - basic physics
 - simple test problems in MCNP, LLNL codes

