

NJOY Status

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- For the latest updates: <http://t2.lanl.gov/codes/njoy99/>
 - **up259 currently available (October 16, 2007).**
- Latest version includes “ERRORJ” (Go Chiba).
 - more tightly integrated than the preliminary merge of ERRORJ and NJOY99.161 performed in late 2006 / early 2007.
 - includes “Bug-fix for ERRORJ-2.3”, October 3, 2007.
- Working on a fortran-90/95 based version of the code for release during the current fiscal year.
 - Will include the necessary coding to process resolved resonance files using the LRF=7 (Limited Reich-Moore) format.
 - Not yet used (ENDF/B-VII.0), but use is expected “soon”.

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- For 2006 CSEWG we were at NJOY99.161 - what changed?
 - install ERRORJ in place of ERRORR;
 - increase the number of reactions that can be broadened simultaneously; also increase array space to allow larger ΔT steps;
 - revise unit base interpolation for TAB1 data where $f(E)=\text{zero}$;
 - revise processing of photon yields based upon file 3 cross sections;
 - revise cross section processing to account for mt600 to mt849 if present and mt103 to mt107 are absent (format violation?);
 - allow processing of discrete file 6 photons (^1H);
 - photonuclear processing from reconr through acer without manual intervention and multiple jobs;

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- For 2006 CSEWG we were at NJOY99.161 - what changed (con't)?
 - ACER mod to fix double counting charged particle cross sections when LAW=4;
 - CCCCR & VIEWR mods to handle JEFF-3.1 8 delayed group data;
 - LEAPR & THERMR mods to implement some long-standing file 7 format options;
 - RECONR/BROADR mods to ignore truly small cross sections when reconstructing the cross section energy mesh;
 - PURR mods
 - better sampling for narrow, widely spaced resonances;
 - correct heating calculation for either lssf=0 or 1;
 - handle case with no non-elastic cross sections (^{253}Es).

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- For 2006 CSEWG we were at NJOY99.161 - what changed (con't)?
 - HEATR mods to include file 6 charged particles (fix error in up115) and to not exceed the maximum file energy;
 - Miscellaneous code updates
 - increased array sizes (and integer and real number format fields);
 - explicit variable initialization;
 - single/double precision initialization;
 - more default plots from HEATR and ACER;
 - restructure multiple condition “if” tests;
 - use File 1 “EMAX” when available in lieu of an assumed 20 MeV upper energy limit for the evaluated file;
 - ...

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- The current version successfully executes Bob's historical 14 test problem suite plus 3 errorj jobs from Go Chiba.
 - need revised input files for test04 and test05 (errorj).
- For a generic “reconr/broadr/unresr/heatr(2)/thermr/purr/gaspr/acer(2)/viewr/groupr” job sequence:
 - all 393 ENDF/B-VII.0 files can be processed;
 - all 381 JEFF-3.1 files can be processed through viewr;
 - with patched URR data for ^{239}Pu .
 - known evaluation issues for ^{90}Ti and ^{52}Cr affect groupr jobs.
 - 335 of 337 JENDL-3.3 files can be processed.
 - known evaluation issues for ^{93}Nb and ^{207}Pb affect heatr jobs.
 - viewr issue realizing one of acer's absorption plots when the cross section is constant over the entire energy range for that plot (^{16}O).

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- Training plans during FY2008:
 - Participate in the Fall, 2007 JEFF/EFF meeting
 - NJOY User Group meeting and Workshop/Tutorial
 - Offer “hands-on” workshops at
 - 11th ICRS & 15th RPSD topical meeting – April, 2008 (near Atlanta, Ga)
 - ANS Annual meeting – June, 2008 (Anaheim, Ca)