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Evaluation work at LLNL in FY06

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for the LLNL CNP Group

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FY06 Highlights



Submitted 3 full evaluations for inclusion in ENDF/B-VII library

- ^{74}As (Brown, Kim, Mughabghab)
- ^{75}As (Brown, Pruet, Kim)
- ^{240}Am (Brown, Pruet), not accepted (buggy EMPIRE run)

Created new ENDF format for β -delayed post-fission γ 's
(Pruet/Brown)

- Format accepted as standard Nov 2005
- ^{239}Pu and ^{235}U data included in ENDF/B-VII

Submitted 489 cross-section only partial evaluations for activation calculations (Hoffman/Kelley)

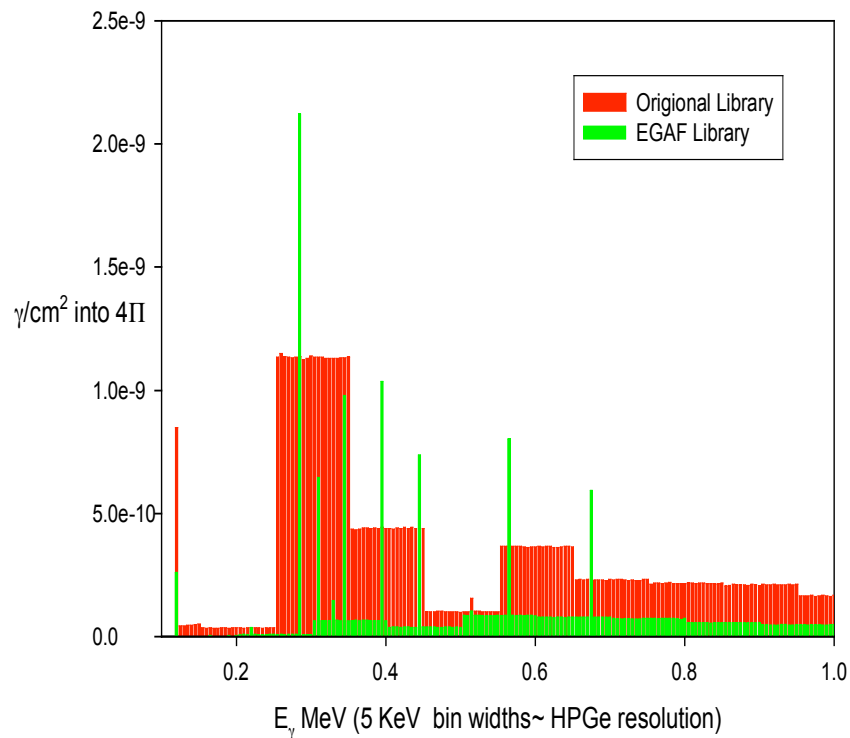
- NNDC had to create the ENDF/A library just to store this data
- More coming...

Adding thermal γ data to 20 evaluations based on the EGAF library (Sleaford/McNabb), in progress.

Adding EGAF libraries to ENDF/B



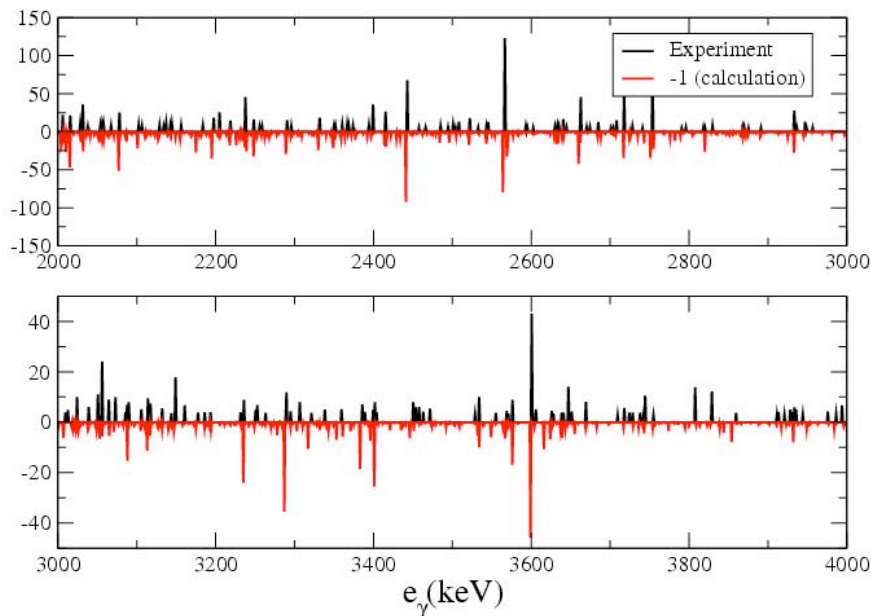
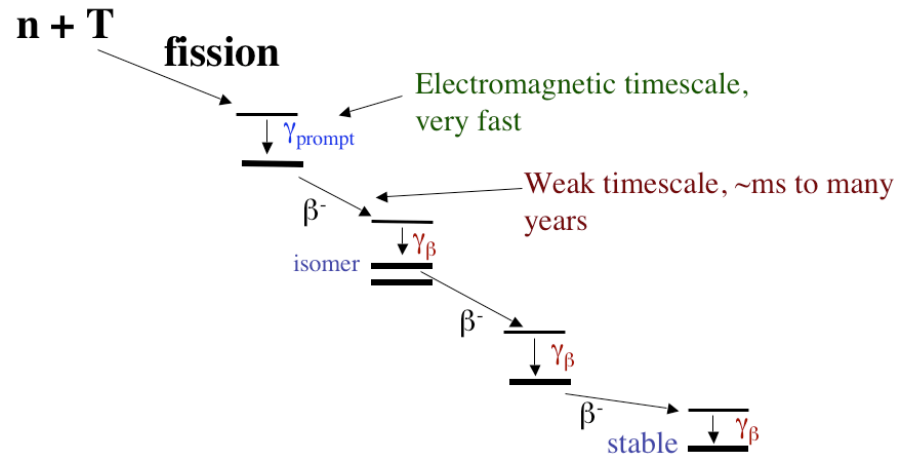
MCNP5 runs: Pd104 + n_{thermal} Original ENDF library vs EGAF library



B. Sleaford thesis work for PhD @ UCB Nucl. Eng.

- Evaluated Pd and other isotopes using Dicebox.
- Developing Fortran Code to extract epithermal and higher energy neutron capture gamma spectra from EMPIRE-II output.
- Contributed to Pd cross section paper to be submitted to Physical Review C shortly.

Simulating β -delayed γ 's from fission



Monte-Carlo model (J.Pruet, *et al.* NIM A, 521, 608 (2004))

- Generate fission fragment from England and Rider.
- Follow β -decay chain to stability
- Collect γ 's along the way.
- Generally good agreement w/ experiment of Norman et al.

Putting data in ENDF/B format



- Approximate γ spectrum/unit time as product of time distribution and multiplicity:
- $s_{\gamma}(E, E_{\gamma}, t) = y(E, E_{\gamma}) T(t)$
- In MT=460, MF=1, 14
- 3129 lines in ^{239}Pu ,
3262 lines in ^{235}U
- Data in use in COG transport code

