LANL Report

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Program Overview, Theory and Evaluation

Evaluation and Theory Development

- New Pu240 evaluations, including covariances
- Capture and fission on minor actinoids (Am241, U236) adjusted
- As isotopes and V underway
- Gilbert-Cameron level density parameters from RIPL-3 discrete levels
- β-delayed neutron and γ based on FRDM-QRPA GT strength
- Nuclear reactions on excited states (PRC **80**, 024611(2009))

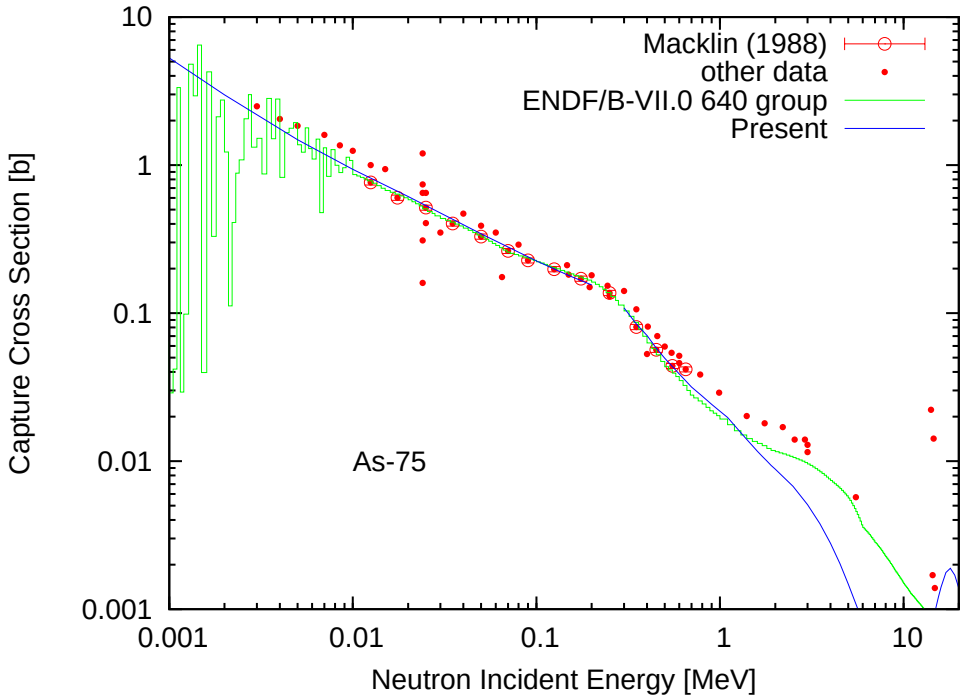
  (Received 21 July 2009; published 31 June 2009) time reversal calculation

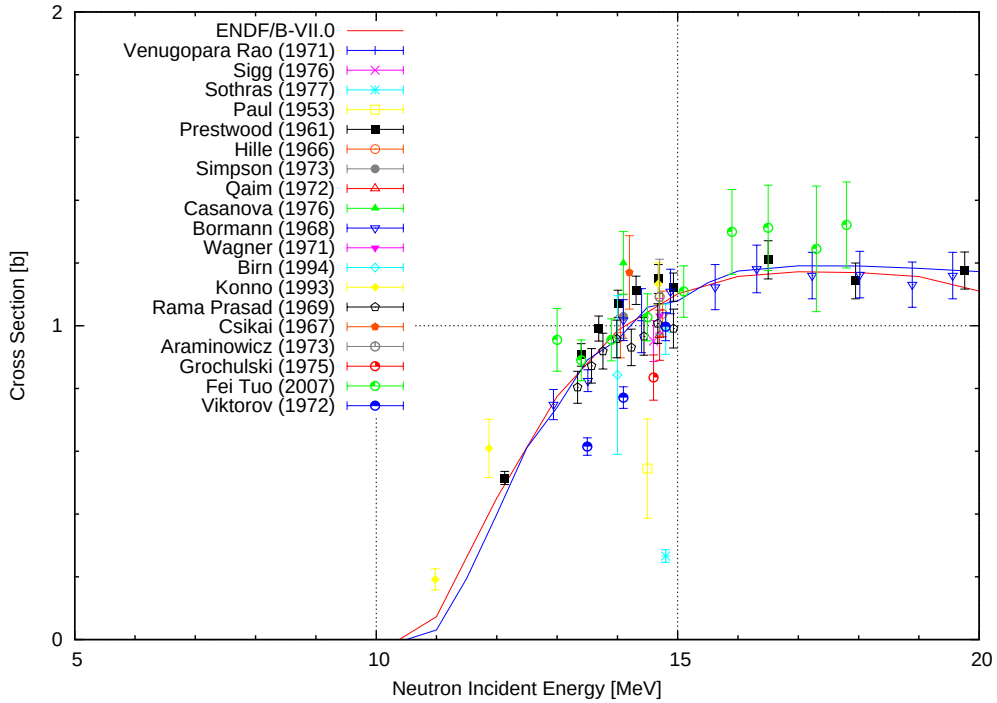
Code Development

- CGM — β-delayed γ and neutron competition
- CoH ver.3.0 (Callisto)
  - full Hauser-Feshbach plus exciton, CC, DSD, DWBA, etc
  - Monte Carlo for exclusive energy spectra
- Monte Carlo prompt fission neutron spectra continue
- Hartree-Fock BCS + DSD extended for proton capture, and odd targets

As-75 Evaluation — New CoH Calculations

Calculation for n + ^{75}As





Data Preliminary

ENDF/B-VII.0 evaluation for As isotopes at LLNL, with TALYS

CoH gives very similar cross sections

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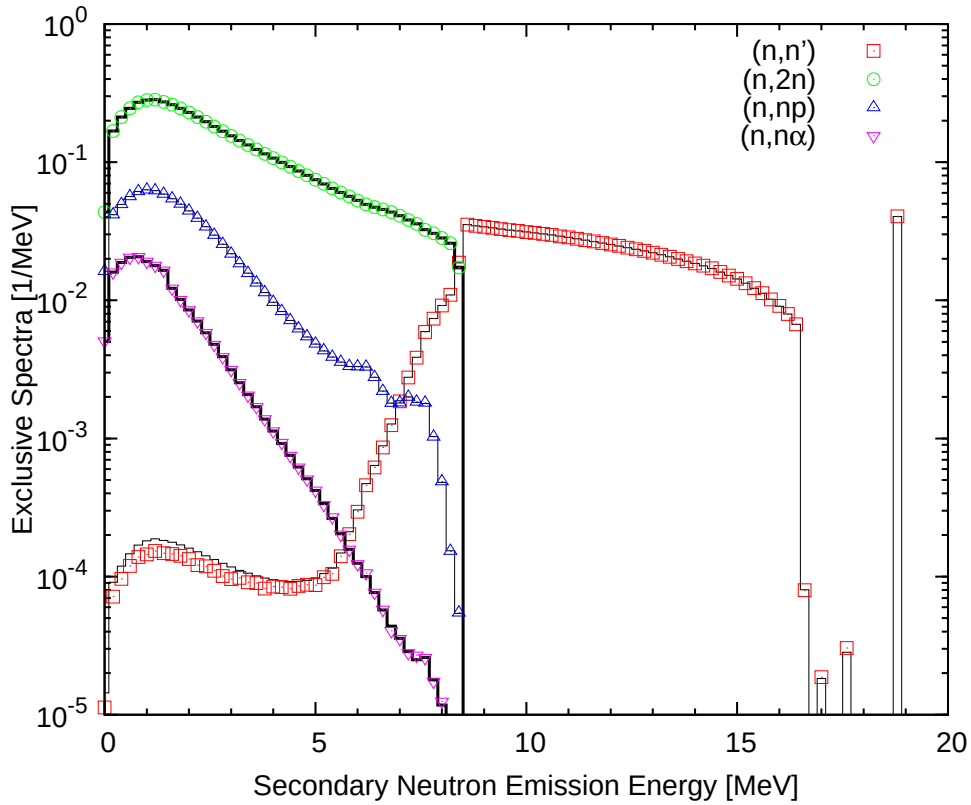
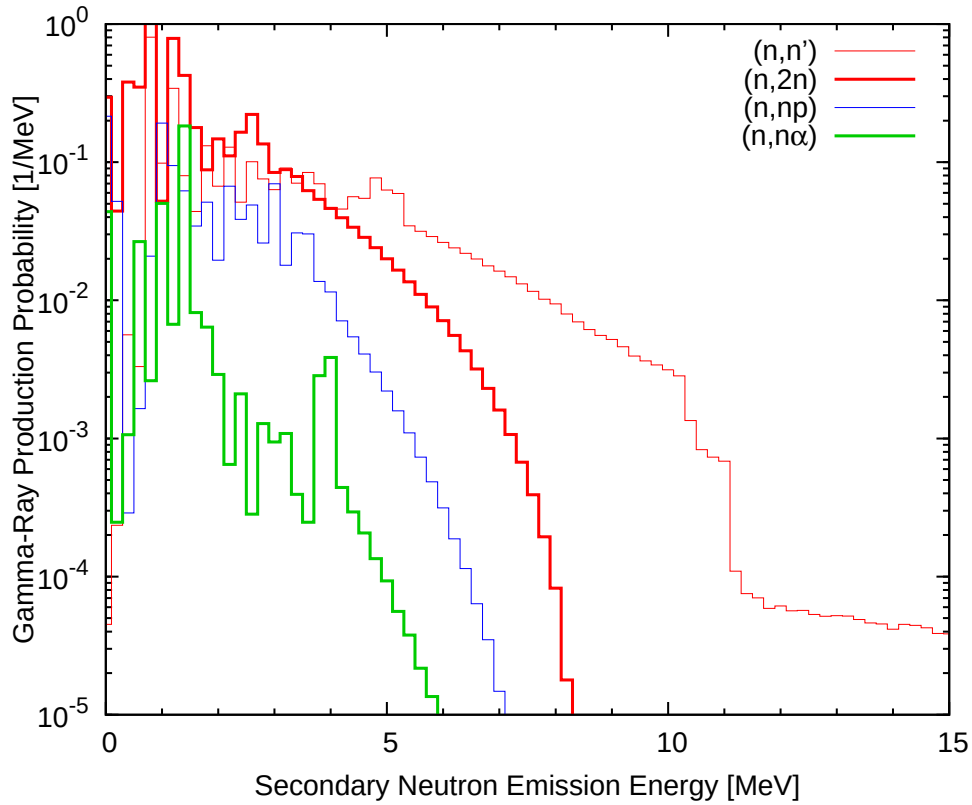
CoH: Monte Carlo Method for Exclusive Spectra

Calculation for n + ^{56}Fe, $E_n = 20$ MeV



Neutron Spectra



Gamma-ray Spectra (MC)

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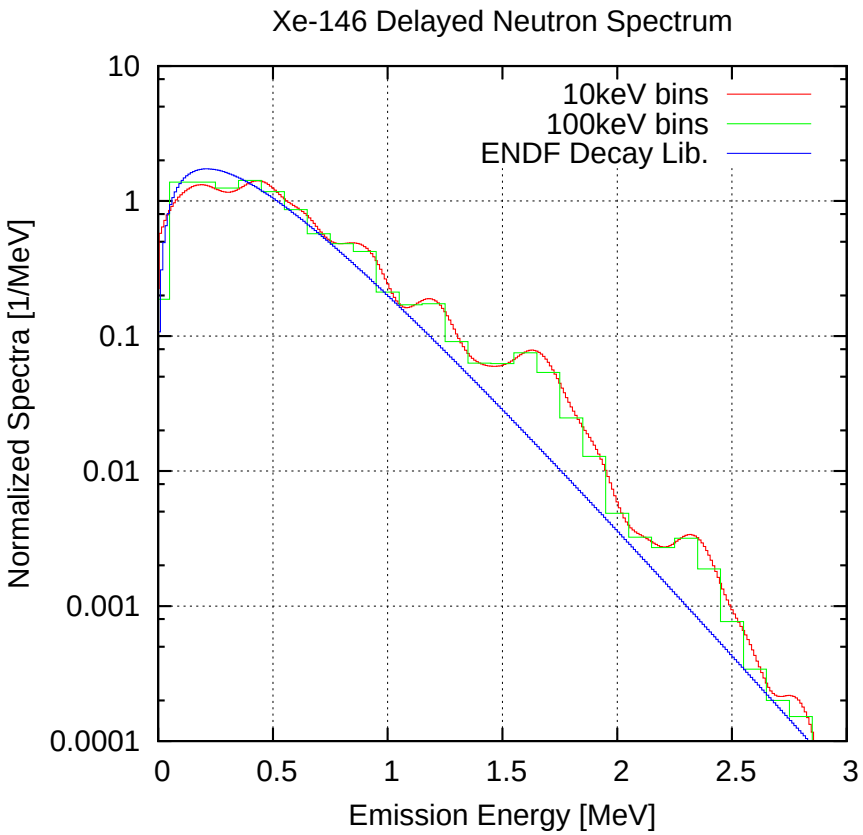
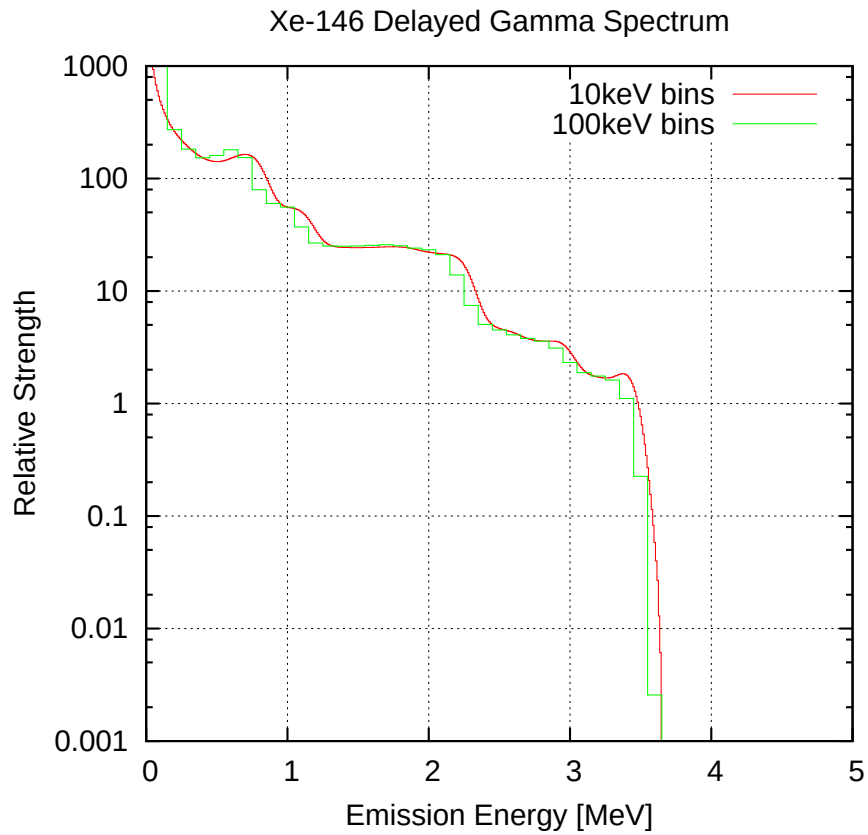
CGM Results: Beta-Delayed Neutron and Gamma

^{146}Xe





γ-ray multiplicity = 3.93

average γ energy = 354 keV

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Miscellaneous ...

Personnel Change

- M. Dupuis, now a staff member in CEA/BRC
- Job opening — post-doc and staff member

Workshops

- LANL/LLNL Fission workshop (Feb. 2009)
  - 70 participants from LANL, LLNL, BNL, LBNL, ORNL, NIST, TUNL, MIT, RPI, IAEA, CEA
- 12th Int. Conf. on Nuclear Reaction Mechanisms (June 2009)
  - Lake Como, Varenna (Italy), Villa Monastero, June 15 – 19 (2009)
- help organizing
  - CNR*09, Bordeaux, France (Oct. 2009)
  - ND2010, Jeju, S. Korea (Apr. 2010)