LANL Report

T. Kawano

Collaboration / Coordination

- CSEWG Evaluation Committee meeting, USNDP Nuclear Reaction WG
- Complete the ND2004 conference proceedings.
- Participated in NEA WPEC 2005 meeting in Antwerp, led a small meeting of the WPEC Subgroup A on nuclear model codes.
- Talk at 2004 IAEA Vienna meetings — Th-U fuel cycle, RIPL
- Talk at 2005 Gen-IV workshop — Monte Carlo method to estimate uncertainties in the k_{eff} for Jezebel.
- Hosted key researchers from CEA/BRC, Bordeaux, JAERI/Japan, Geel.
- A student from Japan visited T-16 to develop McGNASH modules
  - T. Watanabe from Kyushu University, Japan
- Two workshops at LANL — for R.E. MacFarlane, and for D. Madland

Information Dissemination

Web Site Maintenance

- Upgraded T-16 web site by P.Talou.
- The latest LANL evaluations were made available via our WWW site:
  `http://t16web.lanl.gov/`

Los Alamos

Nuclear Reaction Physics, I

ENDF Evaluations

- New improved evaluations for the ^{241,242g,242m}Am have been submitted for ENDF/B-VII.
- Photonuclear data have been submitted for ENDF/B-VII.
- We have performed new GNASH analyses for LANSCE/GEANIE data on ^{191,193}Ir and ^{48}Ti.
- Evaluation of the light elements standards was done.
- New calculations for the β-delayed neutron energy spectrum, based on Möller's β decay data and Hauser-Feshbach calculations.

Covariance Data

- A new capability has been established as a collaboration between LANL and BNL/NNDC, to generate covariance data.

Nuclear Reaction Standards

- The new standards, IAEA CRP, have been included in ENDF/B-VII.

Los Alamos

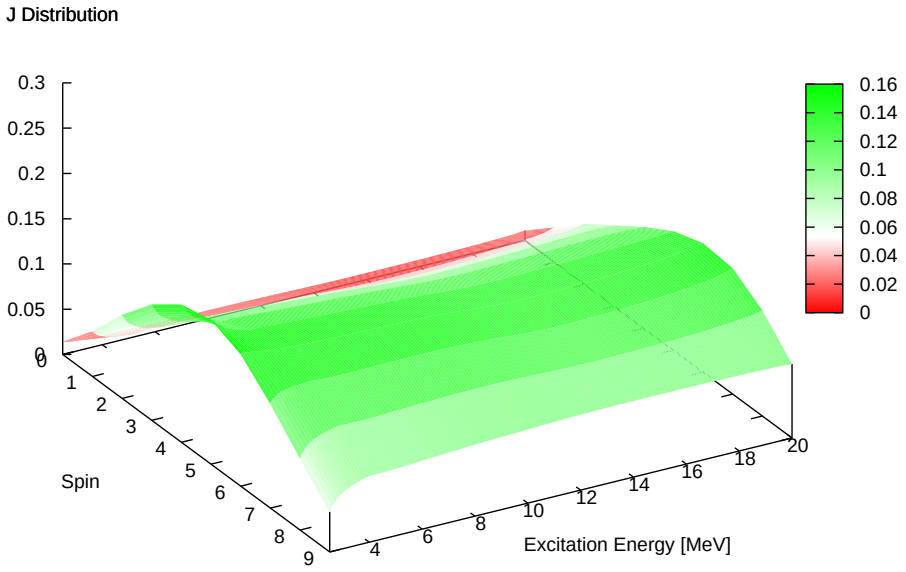
Nuclear Reaction Physics, II

Nuclear Model Development

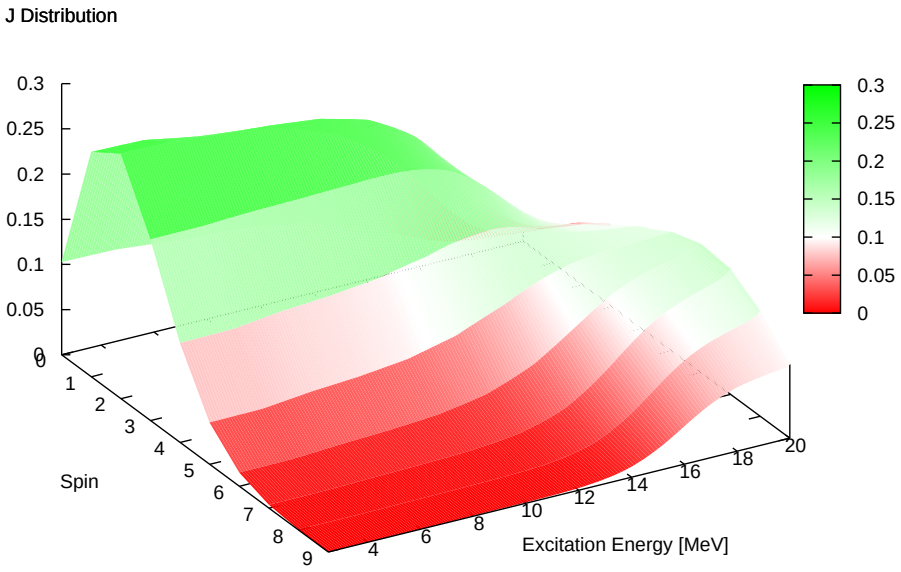
- Developed a new GNASH analysis for spin physics in the pre-equilibrium process.
- Calculation and interpretation γ-ray reactions for ^{191,193}Ir(n,γ), wtich produce unstable products and isomers.
- Developed a new code to calculate β-delayed neutron spectrum.
- Direct/Semidirect capture module for McGNASH, using Hartree-Fock BCS calcualations.

Spin Distribution in the Continuum

CN Reaction Only



CN + FKK



- The FKK calculation suppresses the high-spin state population in the continuum because its angular momentum transfer is not so large.
- We expect that transitions from the higher spin-state become smaller.

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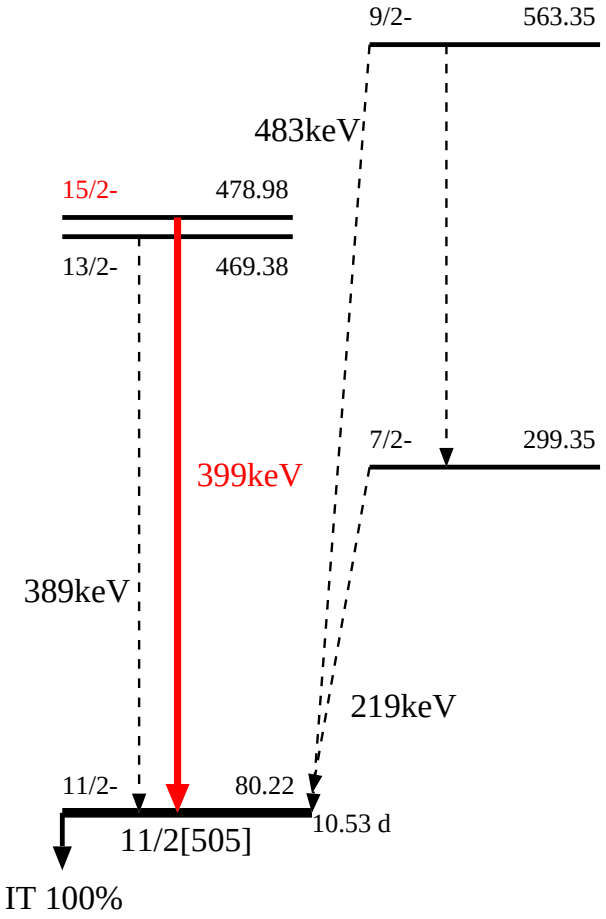
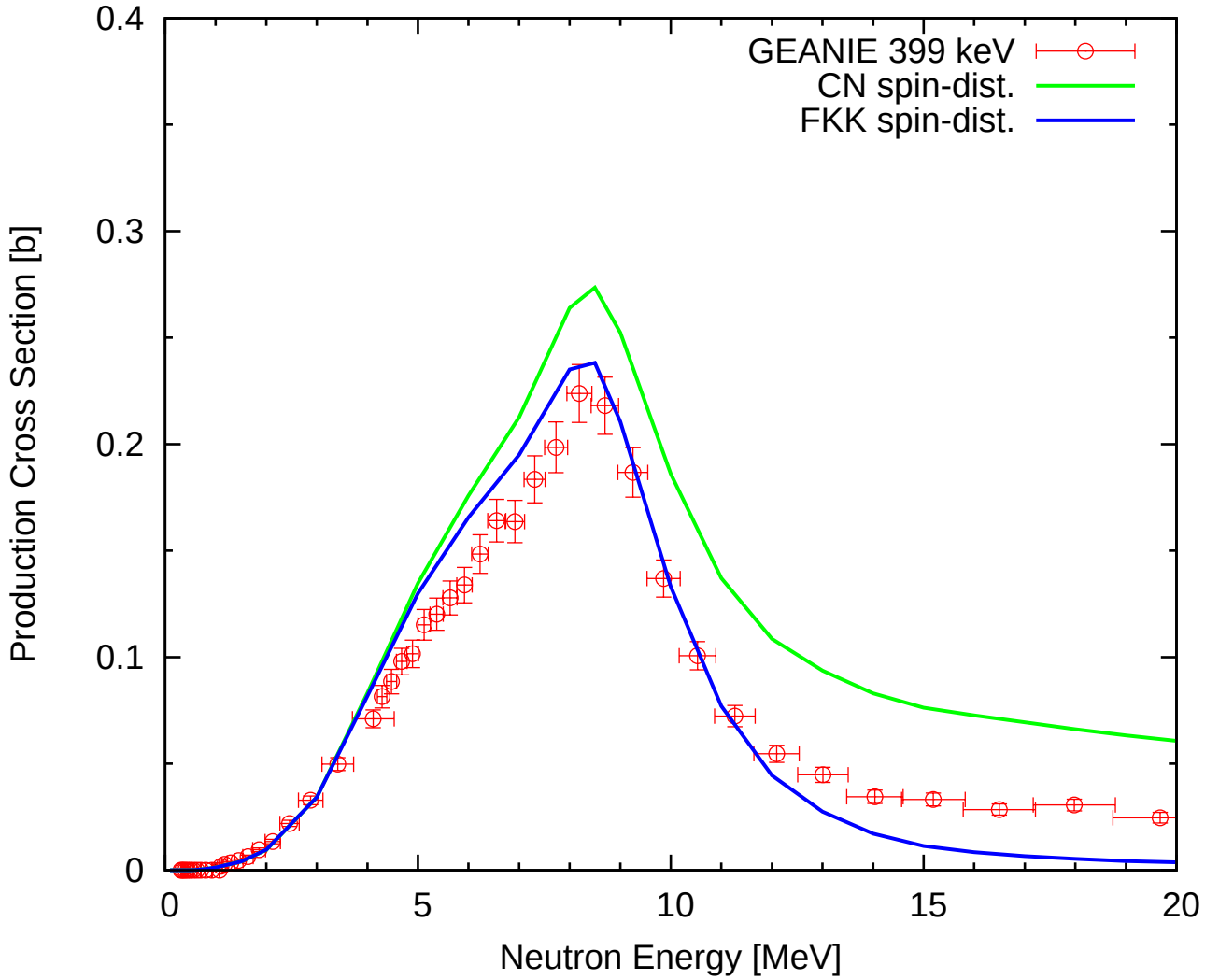
Gamma-ray to the Isomeric State, 399 keV

478.94 keV $15/2^-$ → **80.22 keV** $11/2^-$





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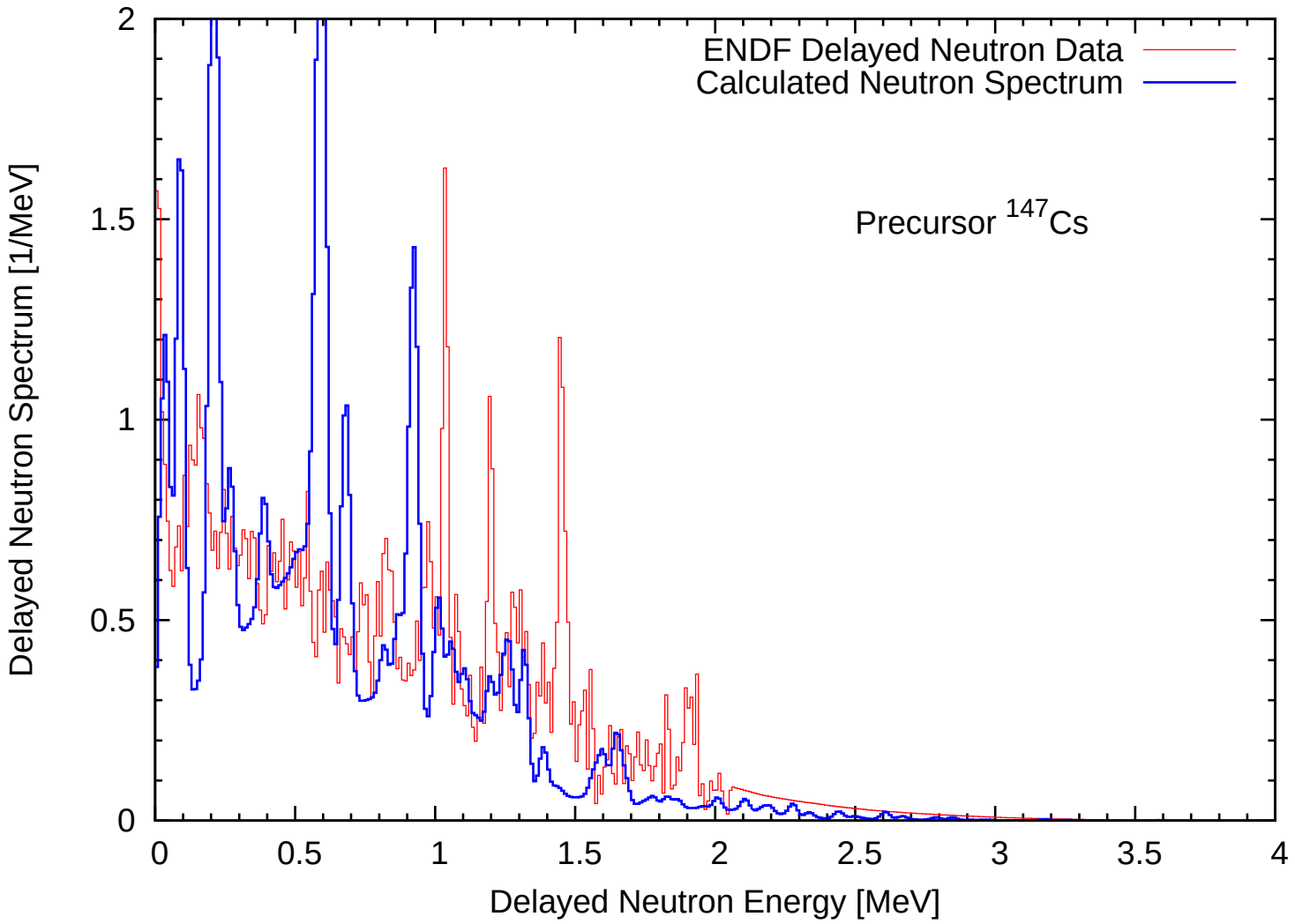
Delayed Neutron Spectrum



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