LANL Report

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Program Overview

Evaluation and Theory Development

- New Iwamoto-Harada model calculation for α-particle emission,
  - S. Kunieda et al., Phys. Rev. C **85**, 054602 (2012)
- Width fluctuation based on the statistical S-matrix method,
  - talk by T. Kawano at WINS2012 (Boston, USA)
- Application of Monte Carlo Hauser-Feshbach to the prompt fission neutron spectra,
  - talks by P. Talou (Varenna, Italy) and T. Kawano (Mito, Japan)
  - B. Becker et al., Phys. Rev. C, in presss
- CGM as an event generator in MCNP,
  - T. Wilcox et al., Nuclear Energy, in press
- Nickel isotppes new evaluations preliminary
- New Np236m evaluation submitted
- . . . and more
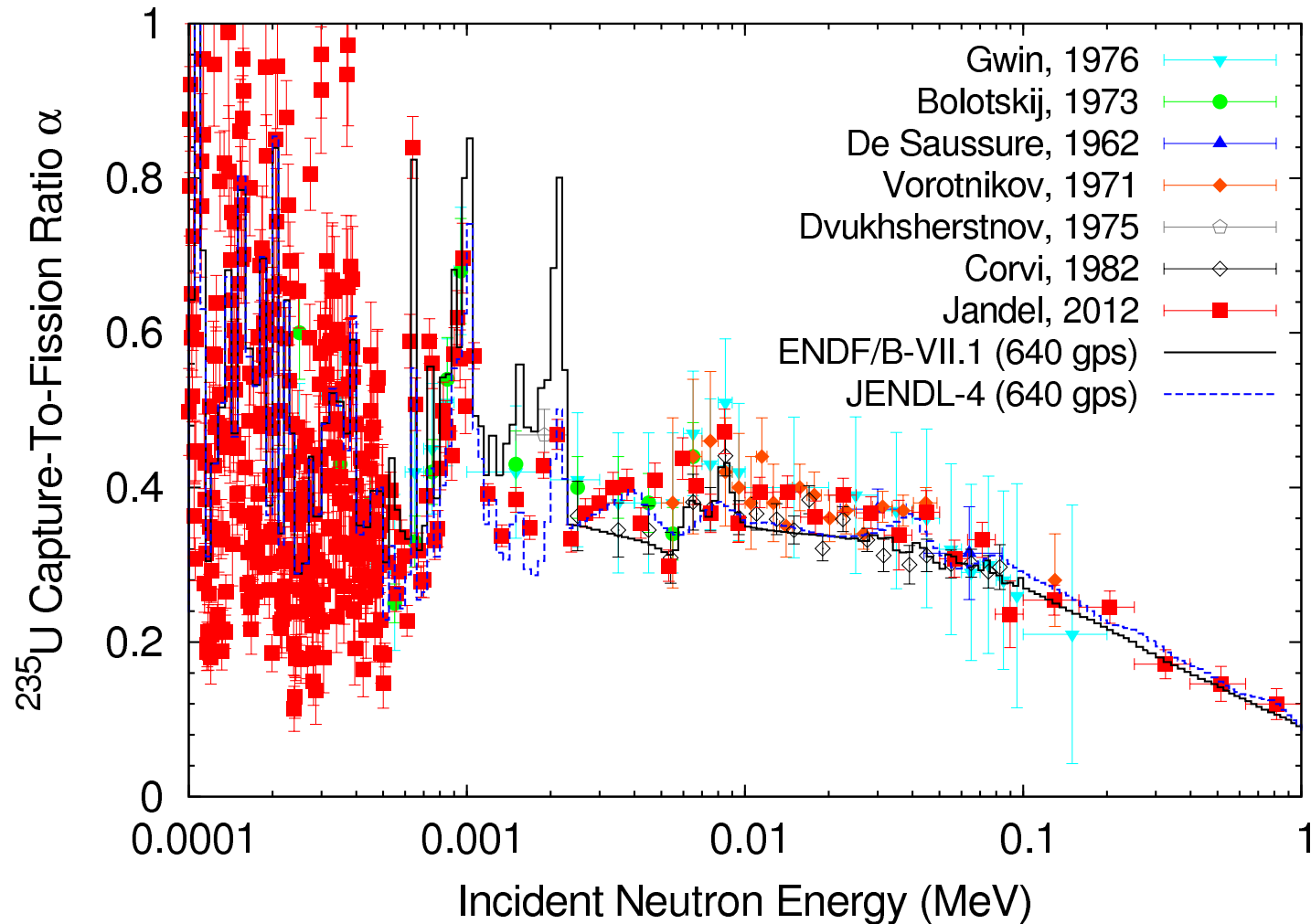
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Code Development

- CGMF (CGM + FFD) Monte Carlo prompt fission neutron spectra
  - Monte Carlo Hauser-Feshbach for the fission fragment decay
  - applied to analyze prompt gammas from fission (DANCE)
- CoH_3 ver.3.2 (Umbriel)
  - statistical Hauser-Feshbach and coupled-channels code with pre-equilibrium
  - exclusive spectrum calc. part combined version
  - optimization made for
    - light element calculation (particle emission from levels)
    - speed-up for high energy calculation
- DeCE ver.1.1.2 (Turquoise)
  - ENDF-6 data manipulation code
- New R-matrix code by S. Kunieda (ND2013 talk)
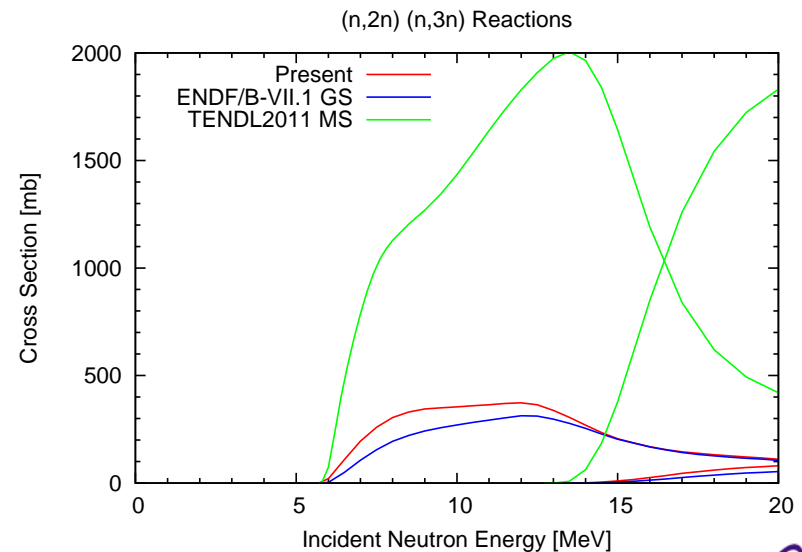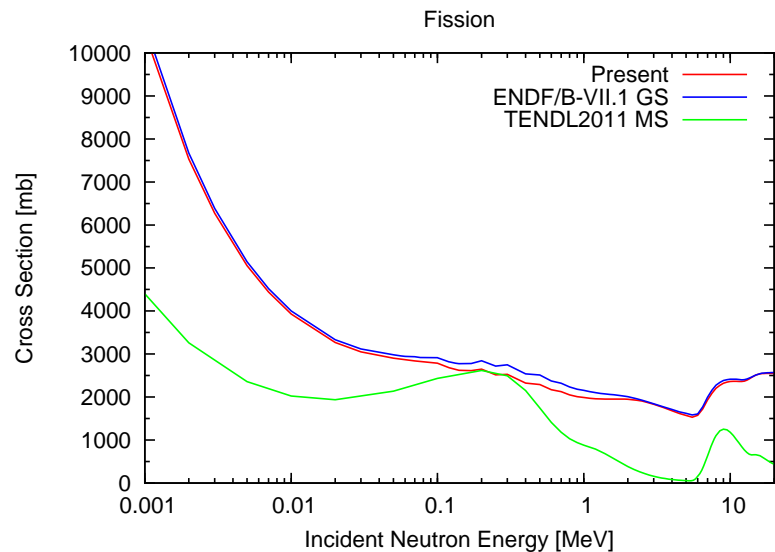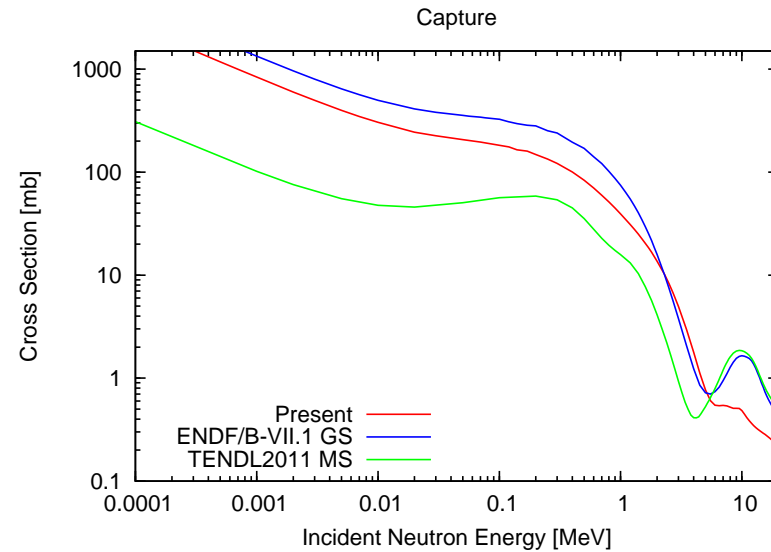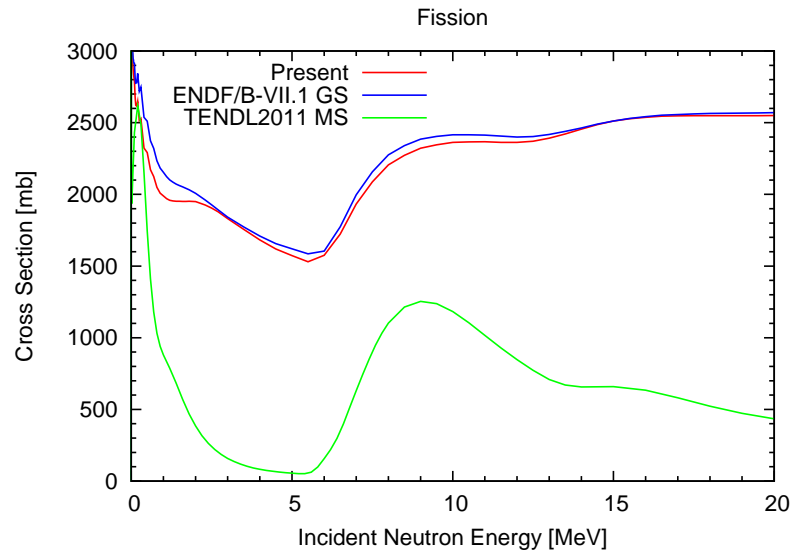
Experiments

Talk by Haight in CSEWG Measurements Committee (11/8)

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U-235 Capture and Fission

New Experimental Data from LANSCE

Np236m (60 keV, 22.5h)
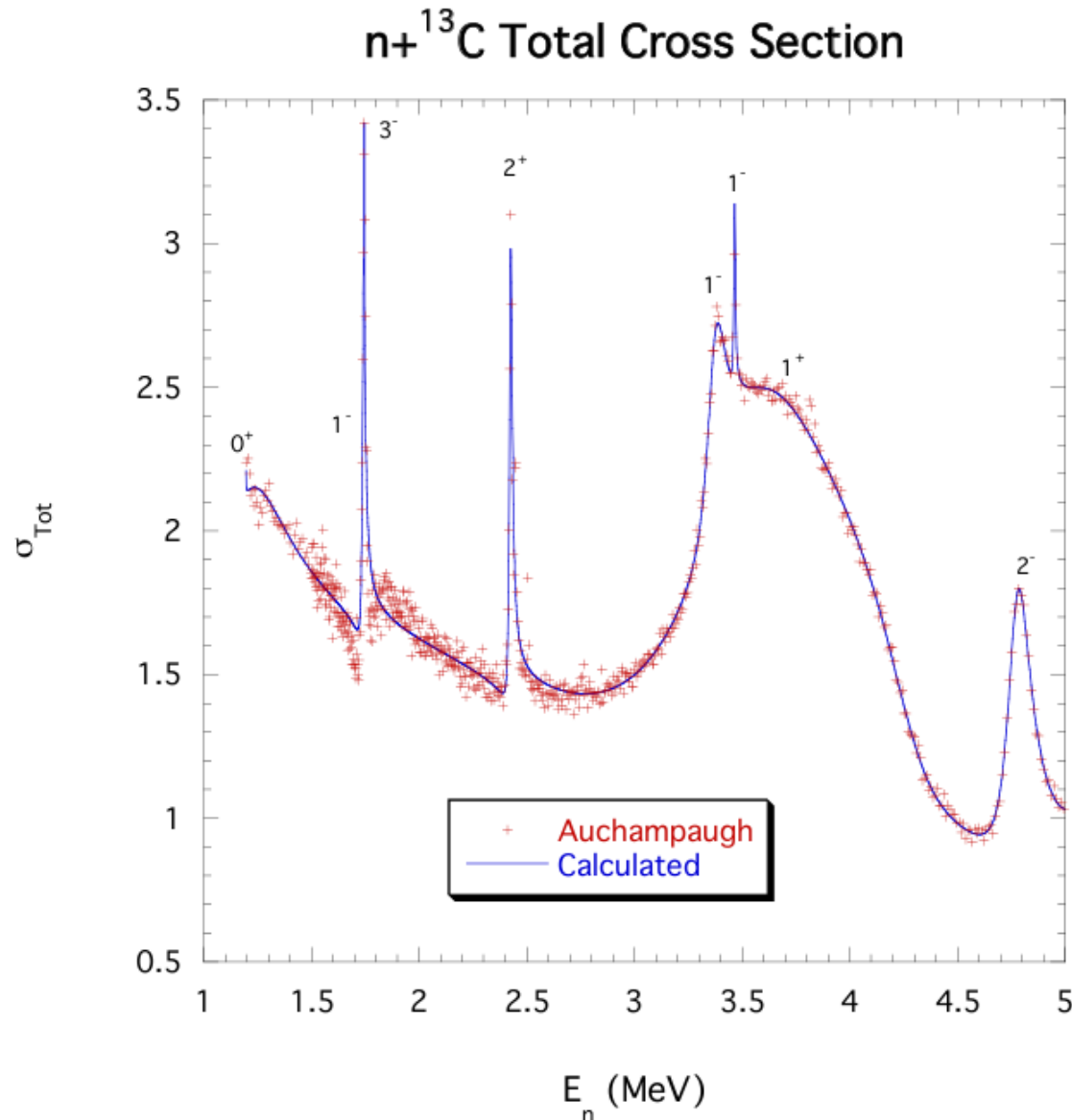
CoH3 Evaluation for the Excited Nucleus (No Exp. Data)

R-Matrix Analysis for C-14

EDA Analysis by M. Paris and G. Hale
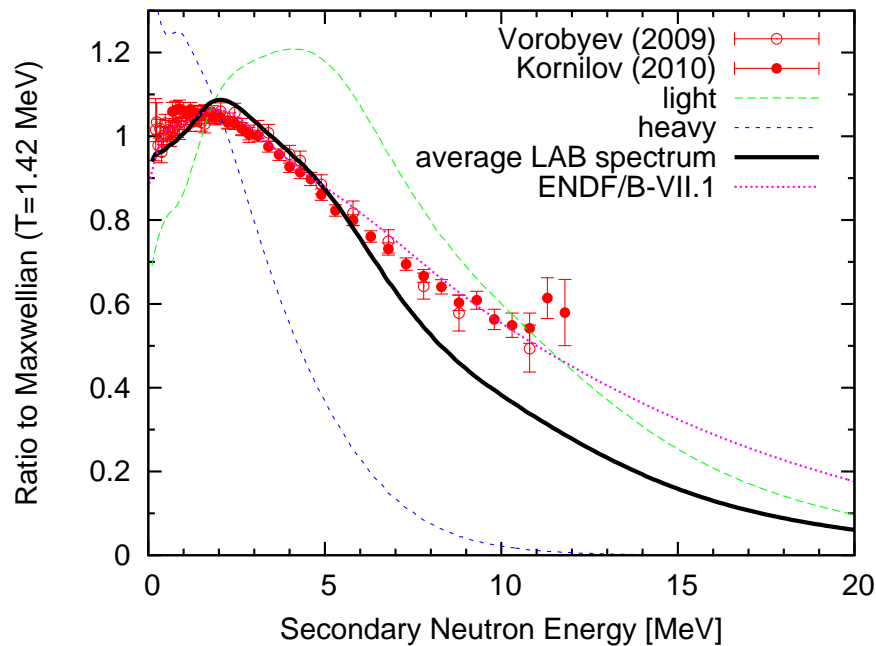

n+¹³C Total Cross Section

- Preliminary result
- ENDF has an elemental evaluation for carbon
- Implementation of XML experimental database (plan)
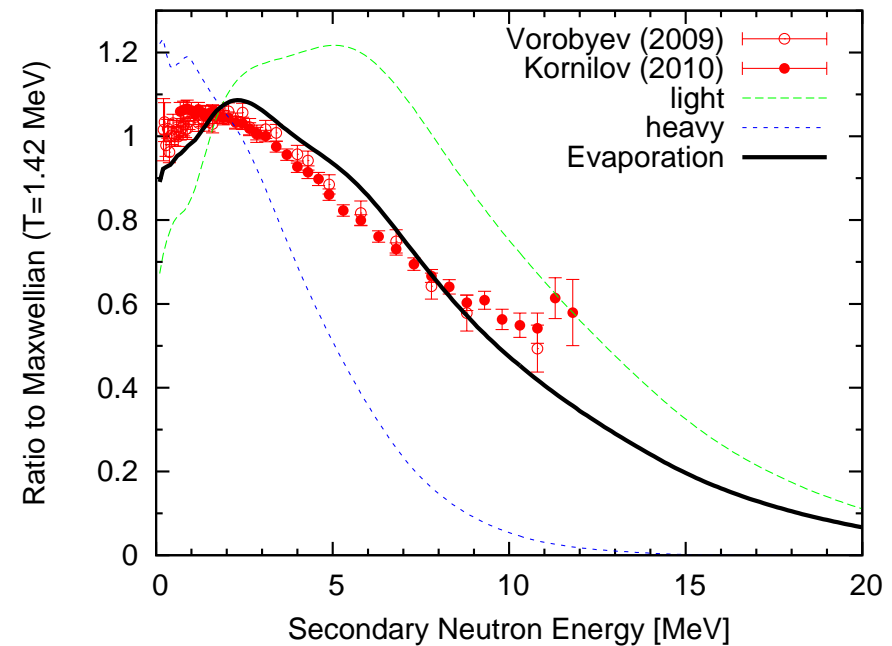
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Monte Carlo Simulation For Fission Spectrum

Monte Carlo vs. Deterministic Method

- MC FF-decay and Evaporation
- MC FF-decay and Standard Hauser-Feshbach
- MC FF-decay and MC Hauser-Feshbach

Std. Hauser-Feshbach

Evaporation

See full calculations of the MCHF (CGMF) by Becker et al. in PRC.

Miscellaneous ...

Personnel Change in T-2

- S. Kunieda — left T-2, was LTVSM from JAEA
- M. Paris — joined T-2, new staff menber
- M. Bertolli — joined T-2, new postdoc
- D. Neudecker — joined T-2, new postdoc

Organized Conferences

- Int. Conf. Nuclear Reaction Mechanism, Varenna, June 2012
- WINS2012, Boston, MA, Sept. 2012
- MCNP/ENDF/NJOY Workshop, LANL, NM, Oct. 2012

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