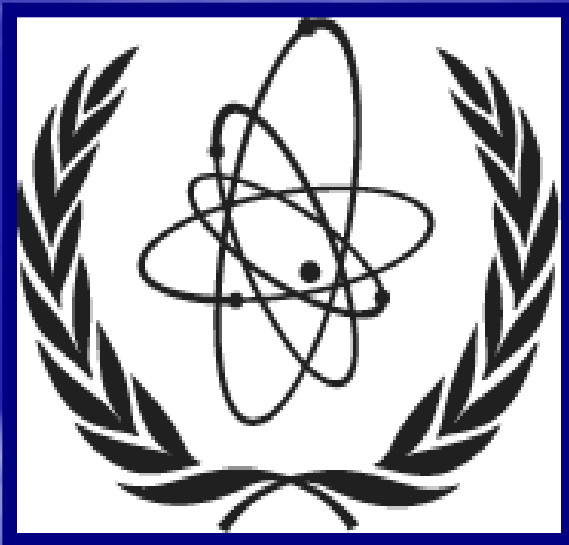


Tungsten and Mn evaluations



Robin Forrest, Nuclear Data Section
International Atomic Energy Agency

^{55}Mn & W isot - IAEA coordinated evals

- Resonance evaluation by Luiz Leal (ORNL)
- EMPIRE code for the fast neutron region
- Newly developed dispersive optical models both for W isotopes and Mn using coupled channel formalism (CC)
- Non-coupled levels by DWBA
- Pre-equilibrium emission by exciton model
- Width fluctuation by HRTW method
- Radiative strength function - Modified Lorentzian (RIPL)
- Level densities - Enhanced Generalized Superfluid Model (RIPL-3 EGSM)
- Covariances: EMPIRE Monte Carlo + GANDR



W-isotopes - Status

- Validation results – big improvement compared to ENDF/B-VI.8, but criticality is overpredicted; possible cross-interference effects in benchmarks are being investigated by I. Kodeli and A. Trkov
- Excellent LSDS results validating Leal RR evaluation
- LLNL EGAF levels to be used (EMPIRE ready)...
- New resonance measurements at Geel ...



^{55}Mn status

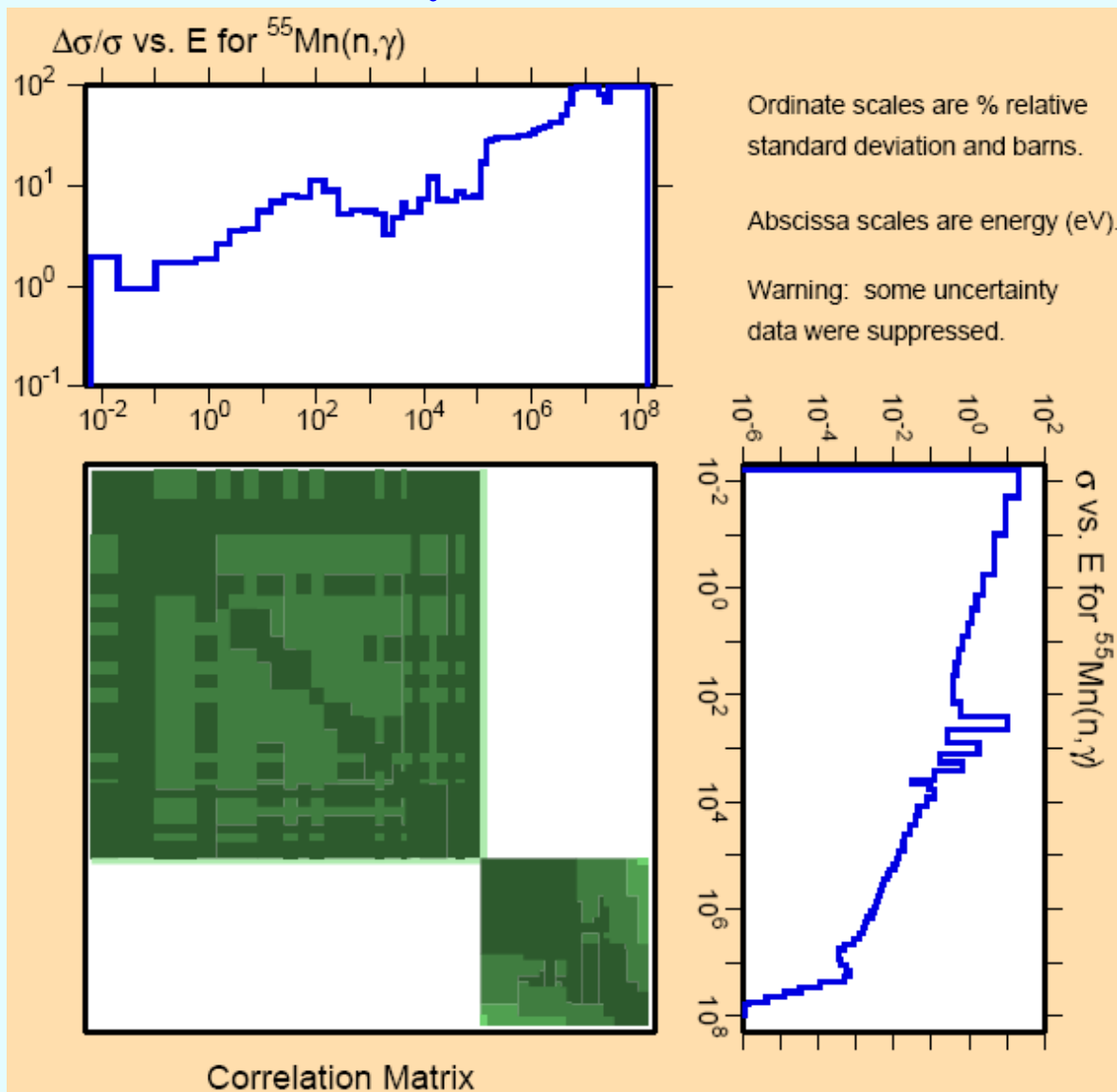
- Excellent LSDS results validating Leal RR evaluation
- Marked improvement of RI

Fast neutron region – validation in progress

- “low” tendency in Cf-252 spectrum averaged cross section
- FNG-W Mn-55 activation 60% high → problem with measurement?
- Inelastic cross section to be resolved



$^{55}\text{Mn}(n,\gamma)$ covariances



RR validation by LSDS

NUCLEAR SCIENCE AND ENGINEERING: **144**, 142–156 (2003)

Precise Validation of Database (n, γ) Cross Sections
Using a Lead-Slowing-Down Spectrometer
and Simulation from 0.1 eV to 30 keV:
Methodology and Data for a Few Elements

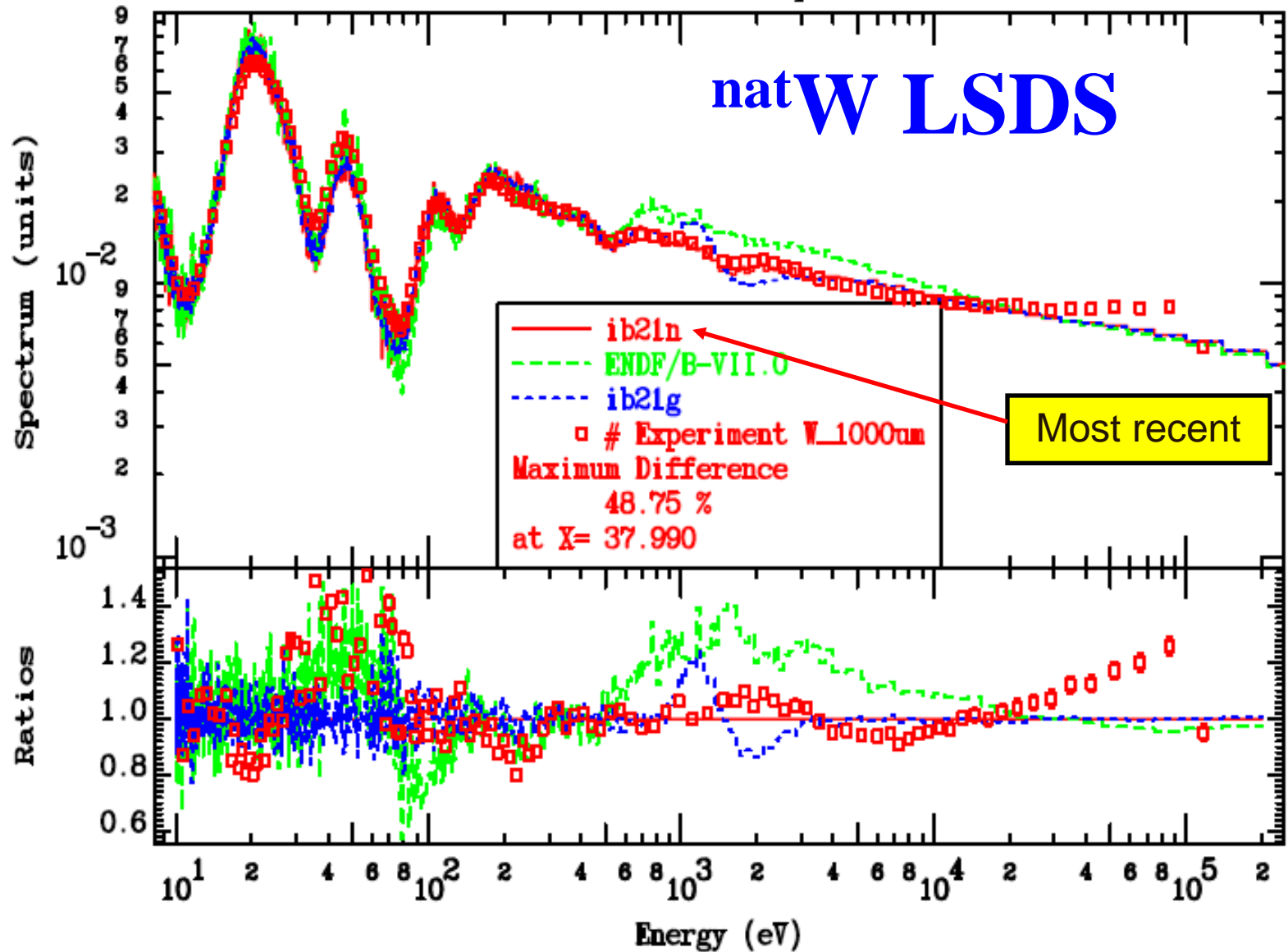
L. Perrot, A. Billebaud,* R. Brissot, A. Giorni, D. Heuer, J.-M. Loiseaux, O. Méplan, and J.-B. Viano

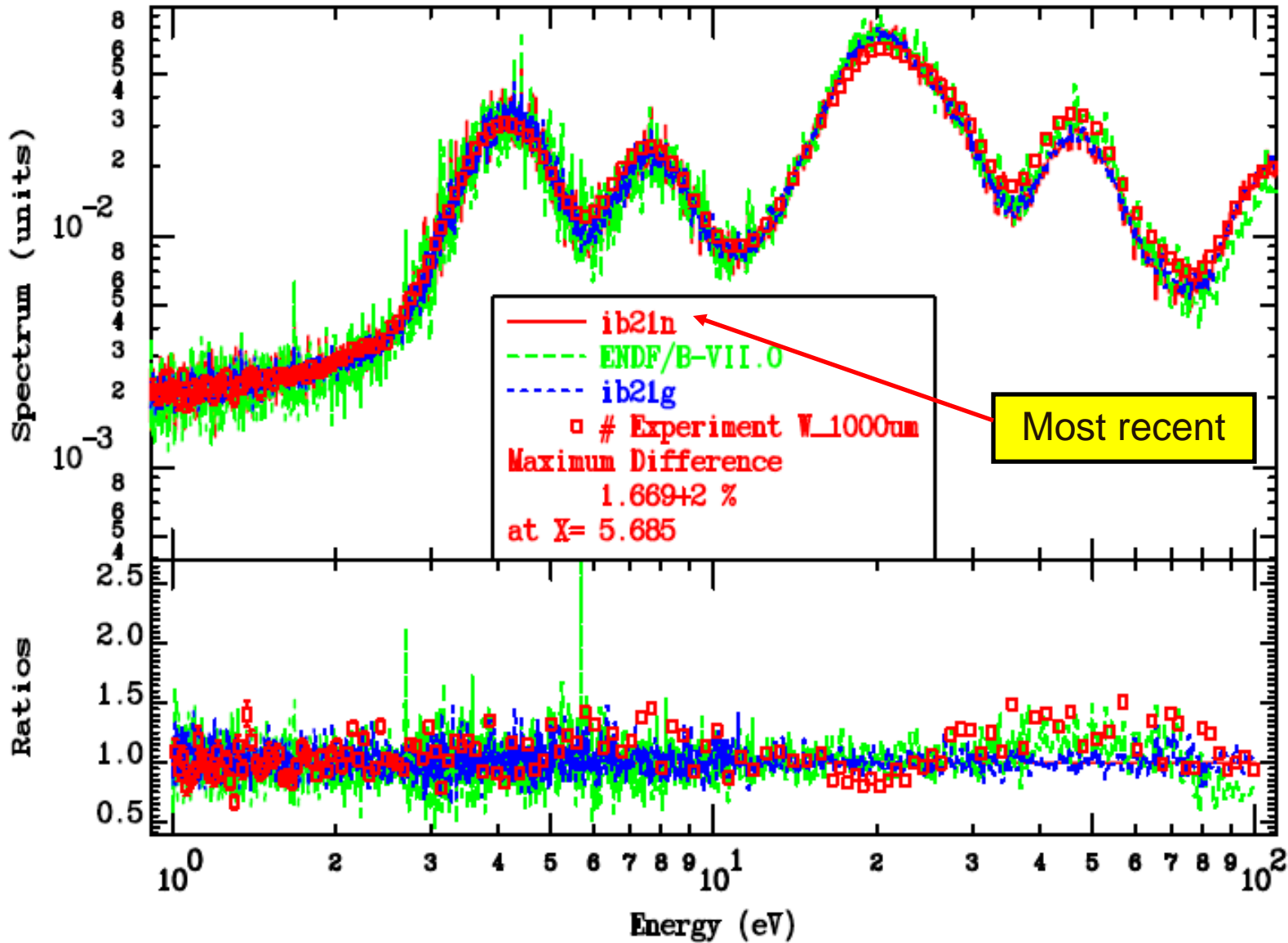
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53, av. des Martyrs, F-38026 Grenoble, Cedex, France*



Grenoble Lead Slowing-down Spectrometer
W 1000 um sample

natW LSDS





Grenoble Lead Slowing-down Spectrometer
Mn 2400 um sample

