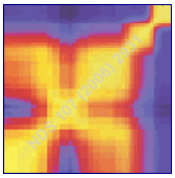

Evaluation of Tungsten Nuclear Data with Covariances

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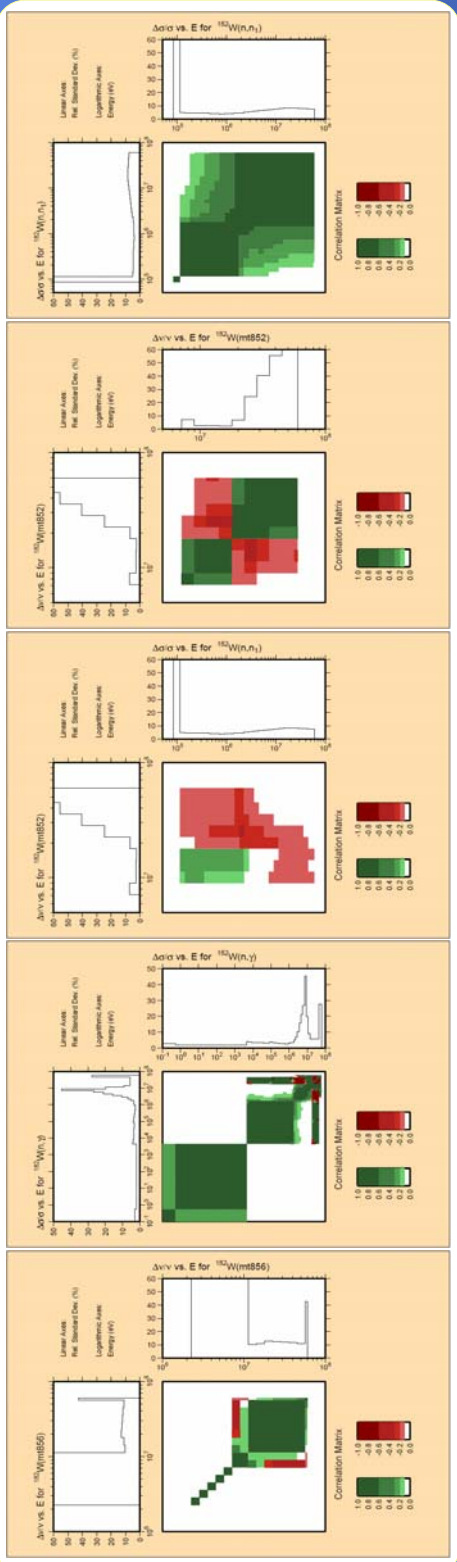
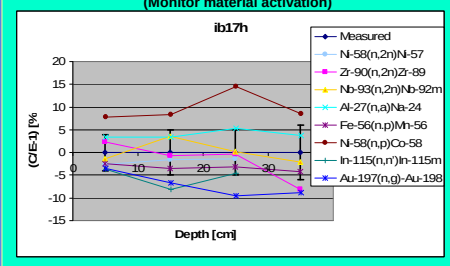


Evaluation of ^{180,182,183,184,186}W

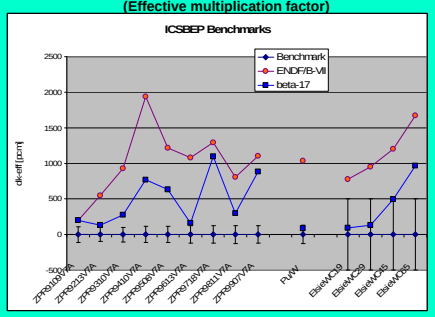
Co-ordinated activity through the IAEA, featuring:

- Resonance evaluation: minor adjustments to existing resonance parameters (consistency with activation data), covariances by the retro-active method.
- Model calculations with the EMPIRE code above the resonance range; covariance matrix prior by the Monte Carlo technique, including reaction correlations.
- Experimental data taken into account by the generalised least-squares technique through the Gandr system.
- Extensive validation: SINBAD fusion benchmarks (FNG) and ICSBEP fast reactor benchmarks (ZPR-9, W-reflected Pu sphere and Los Alamos Elsie-assemblies).

SINBAD FNG-Tungsten Benchmark
(Monitor material activation)



ICSBEP Criticality Benchmarks
(Effective multiplication factor)



Conclusions

- *Evaluation methodology is feasible and reliable*
- *Benchmark results are good*
- *Improvements in keV region require new measurements*

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- *Covariance prior from model calculations is important to preserve physics constraints*
- *Monte Carlo technique is convenient to generate prior*
- *Experimental data are mainly used to constrain the uncertainties*
- *Assignment of systematic uncertainties is important*
- *Generalised least-squares method is applied*

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