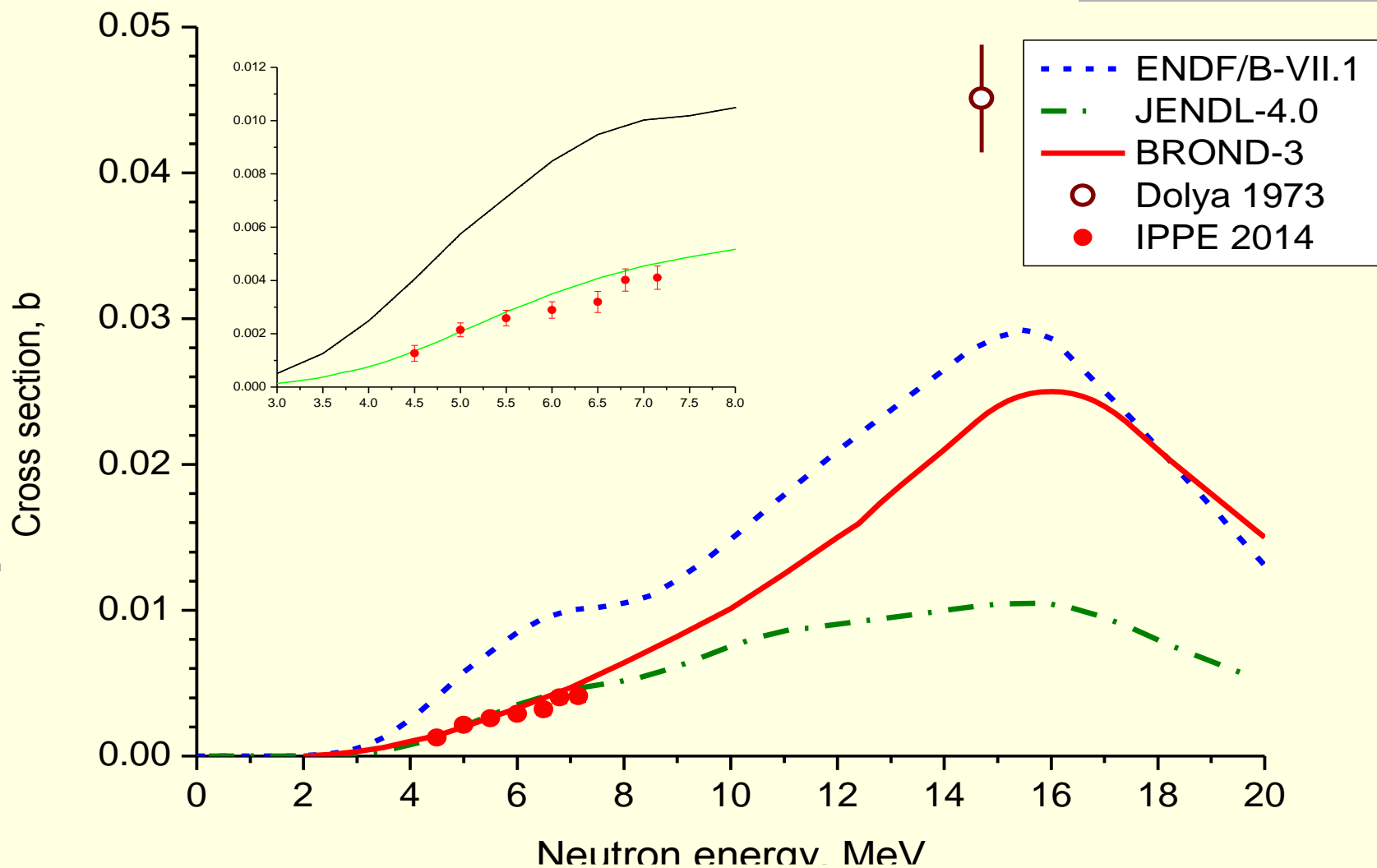


BROND-3.1 library final version

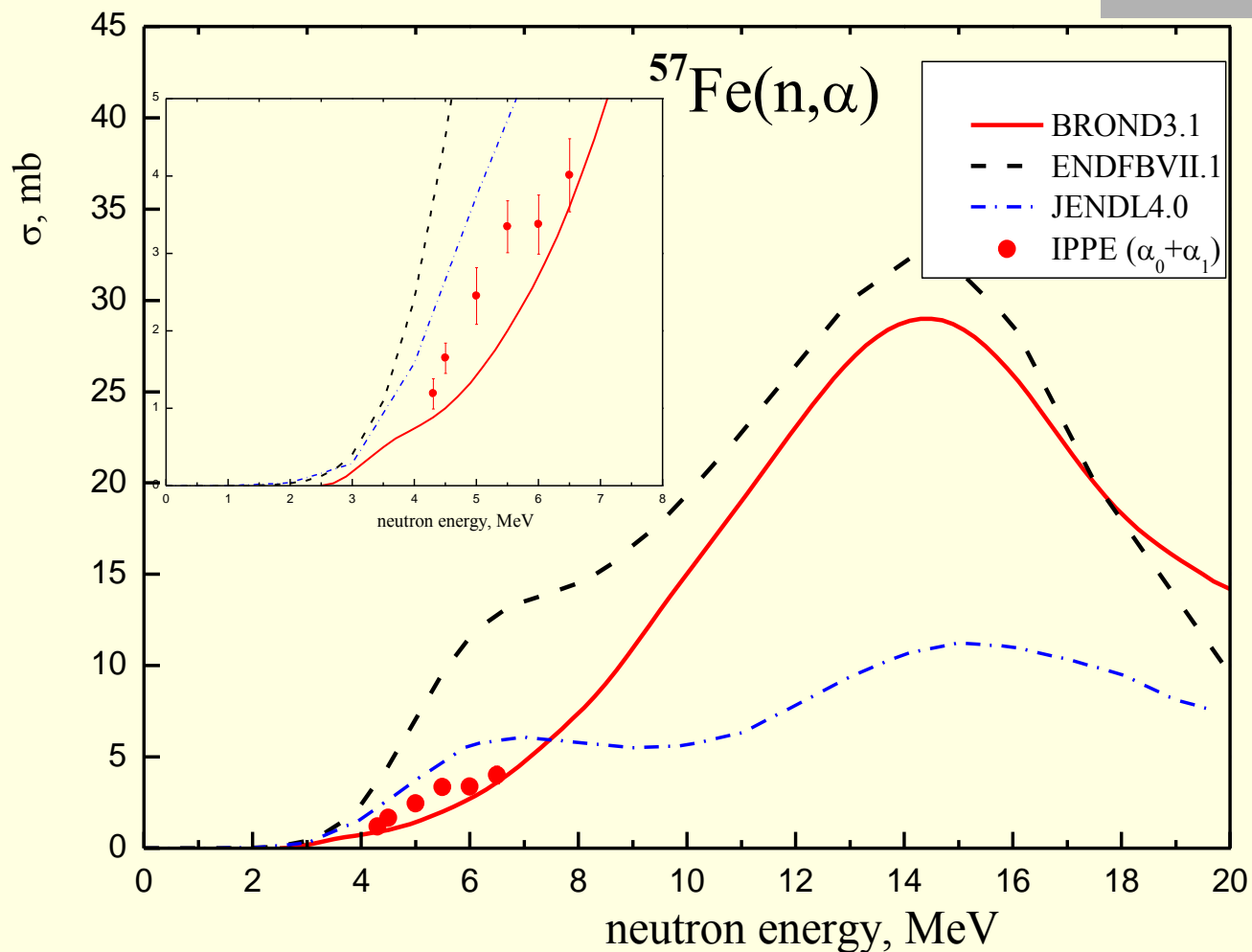
Oleg Grudzevich
Institute for Physics and Power Engineering,
Obninsk, Russia

BROND-3.1: Main features

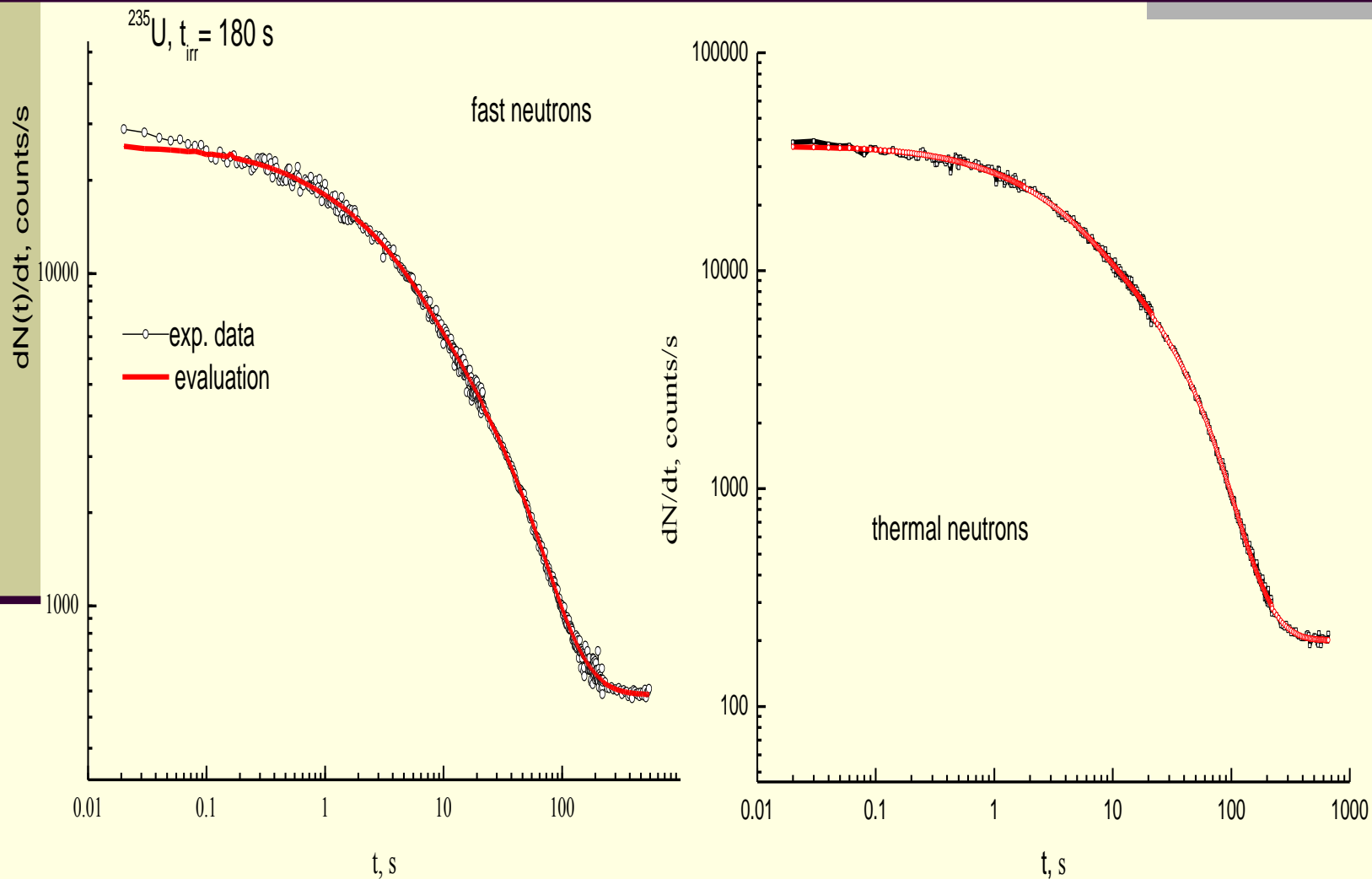
- New XS measurements
- New DN yield measurements
- Some XS reevaluations
- Cross-section uncertainty matrixes
- Data verification with the benchmarks:
spherical geometry & K-eff data
- 372 complete files
- Library release

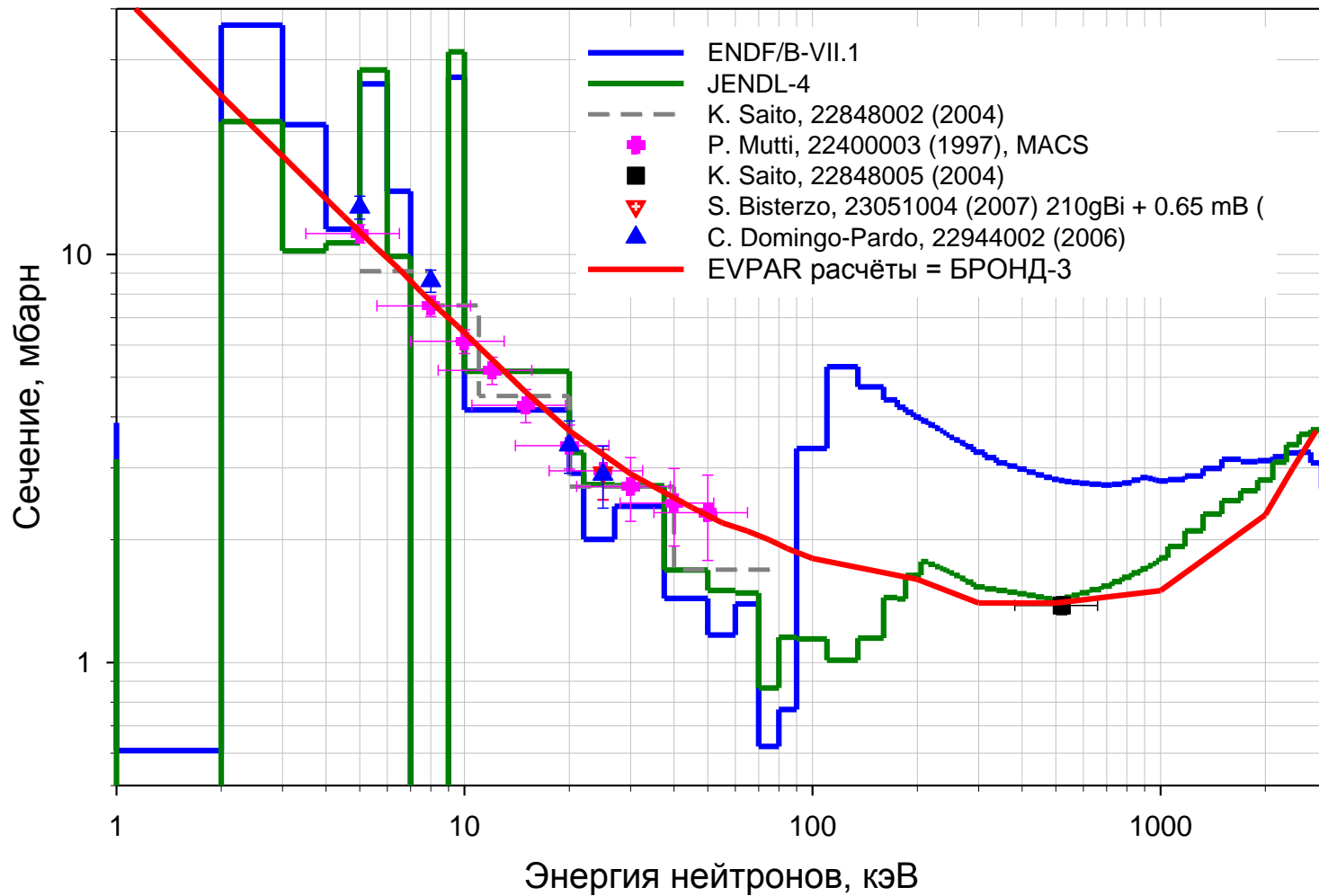
New experimental data on the $^{50}\text{Cr}(n,\alpha)$ cross sections

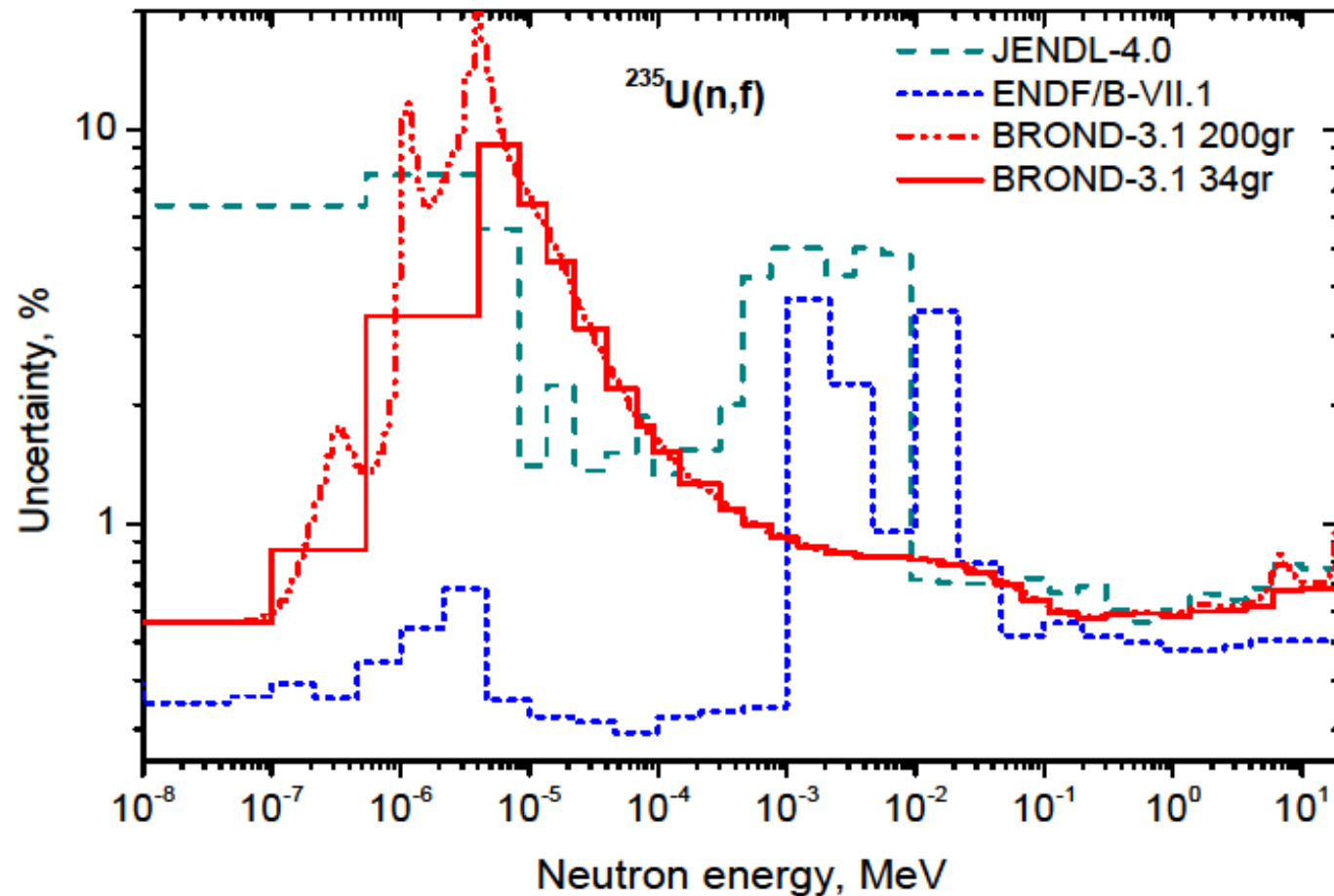
New experimental data

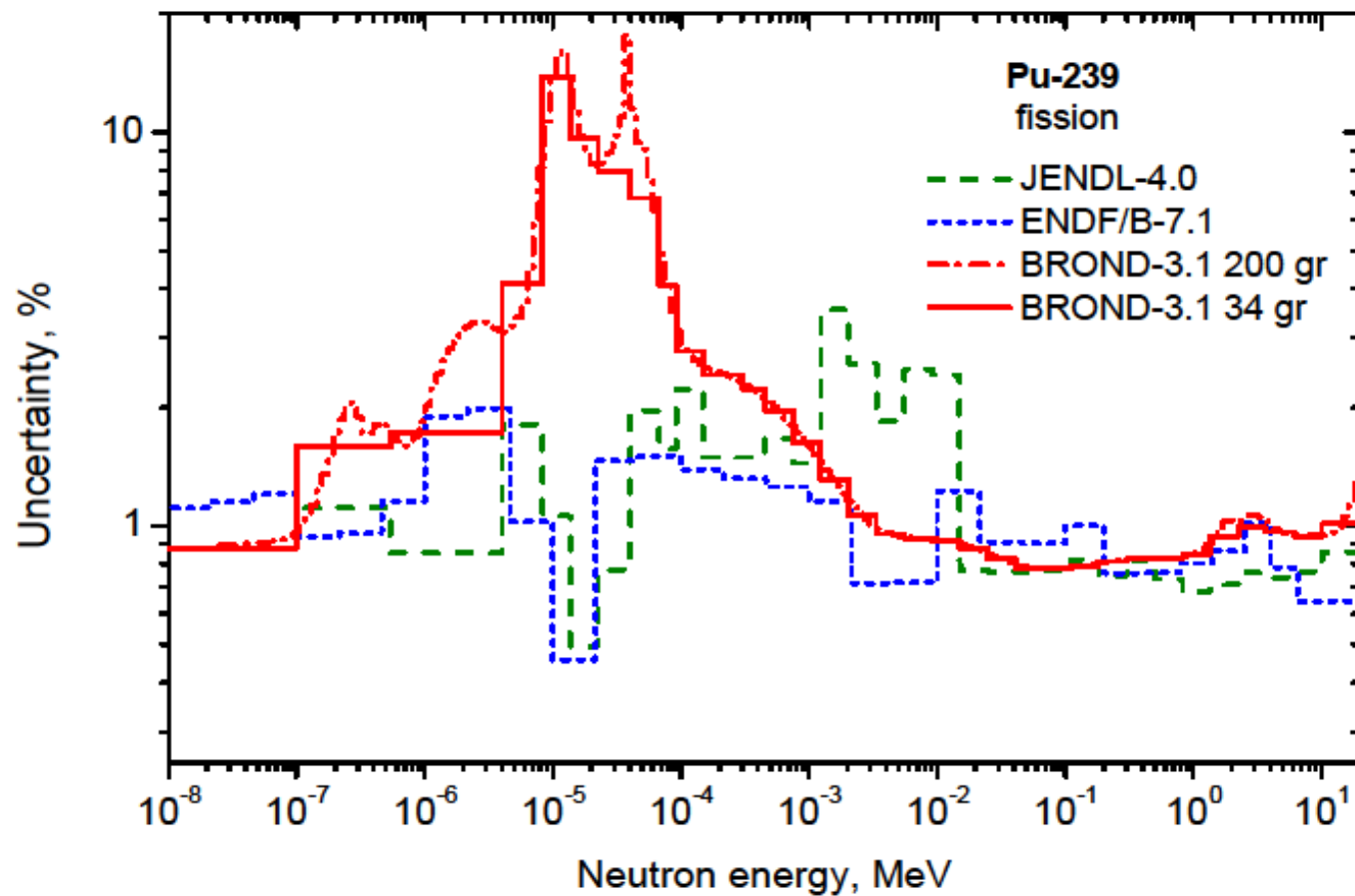


New experimental data – delayed neutron yields

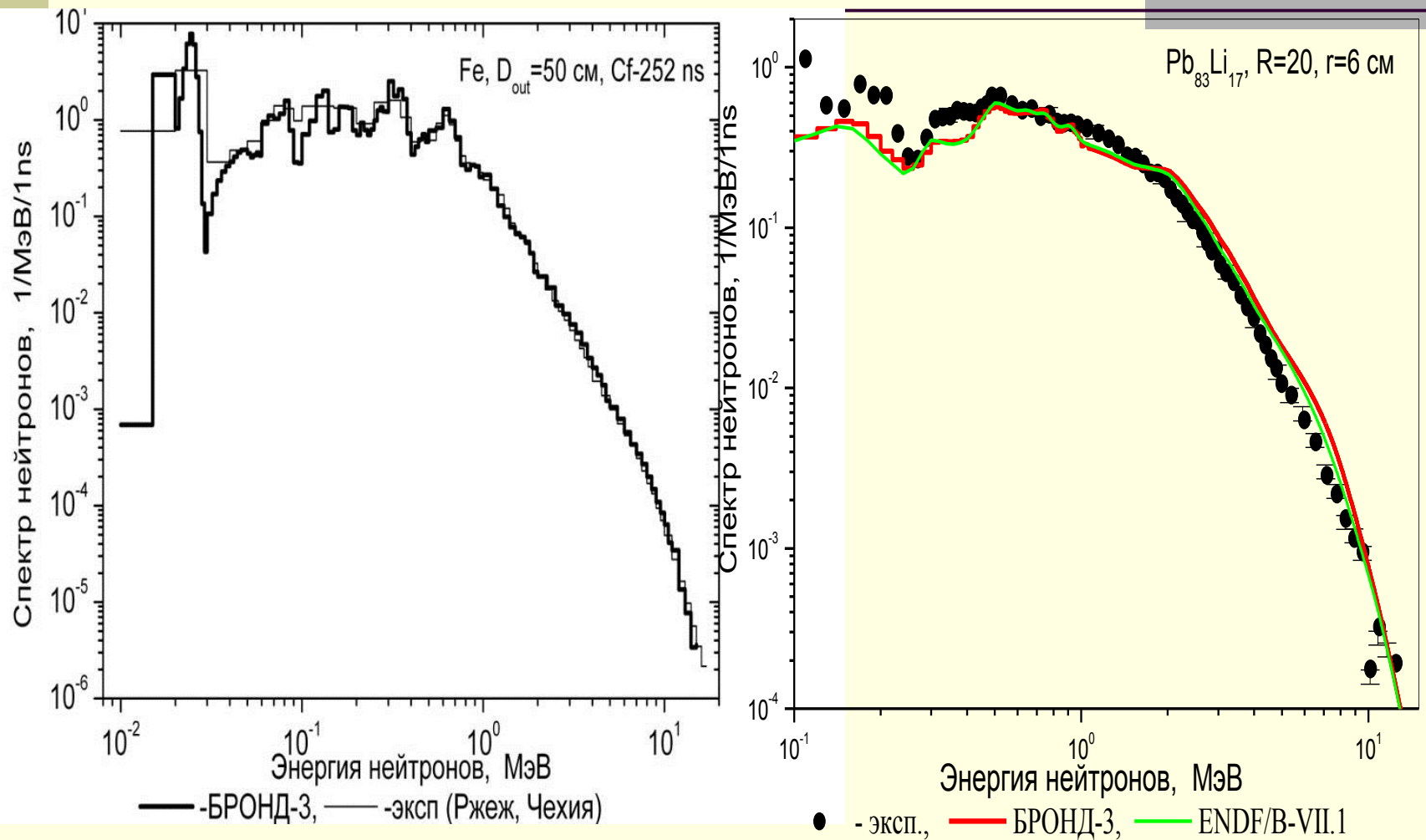


New evaluations for coolant isotopes. $^{209}\text{Bi}(n,\gamma)$ 

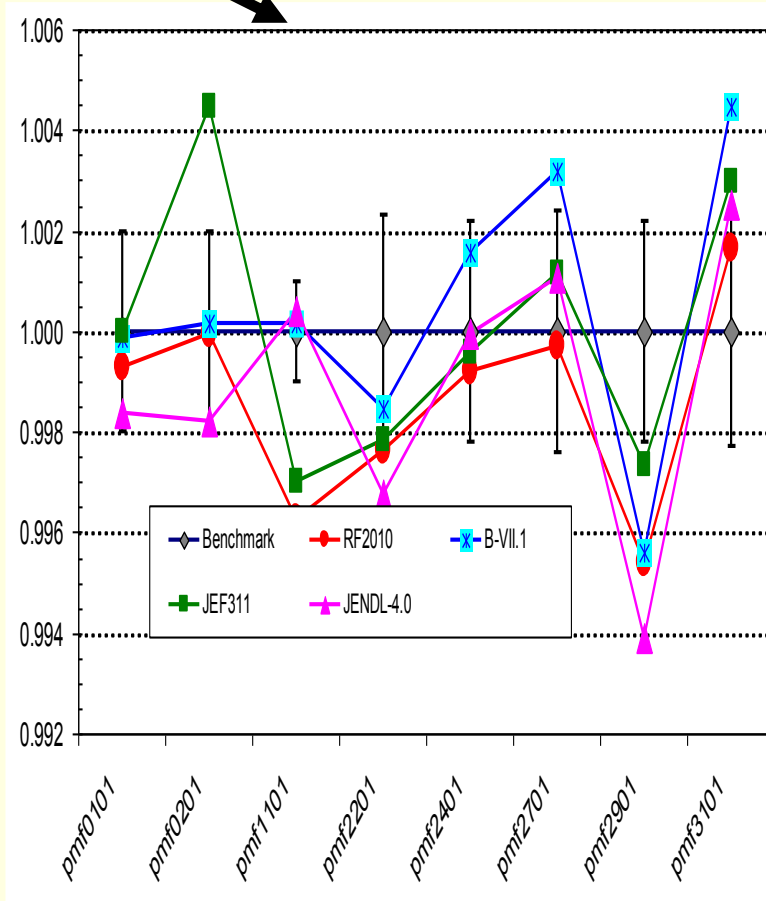
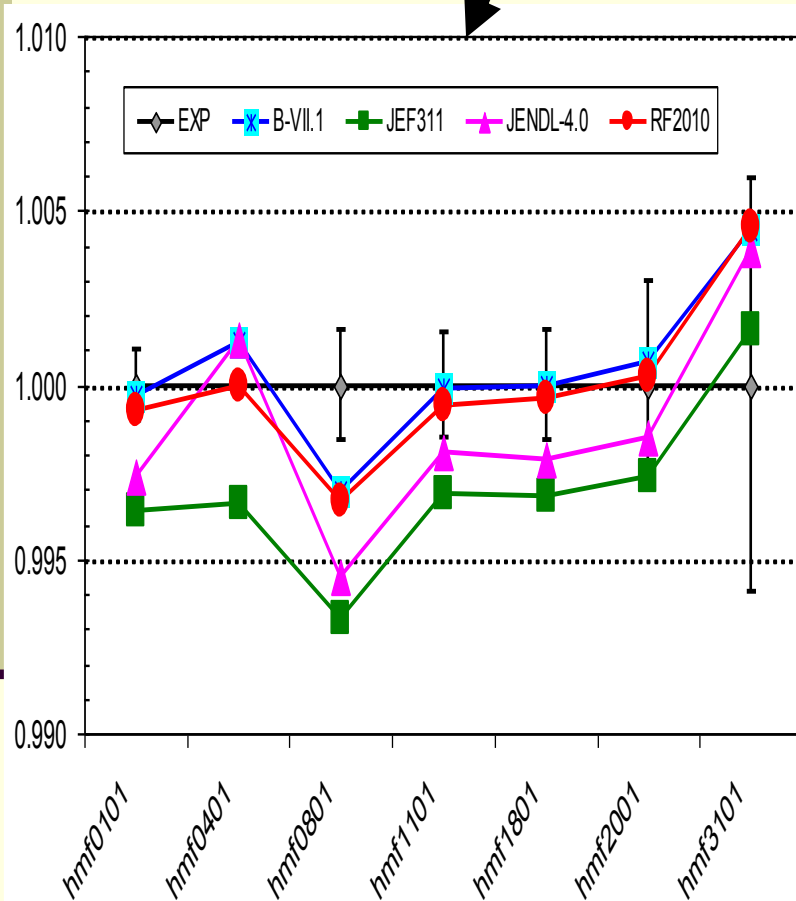
Uncertainties of the fission cross-section evaluations for ^{235}U 

Uncertainties of the fission cross-section evaluations for ^{239}Pu 

Digital simulation of neutron leakage spectra from spheres



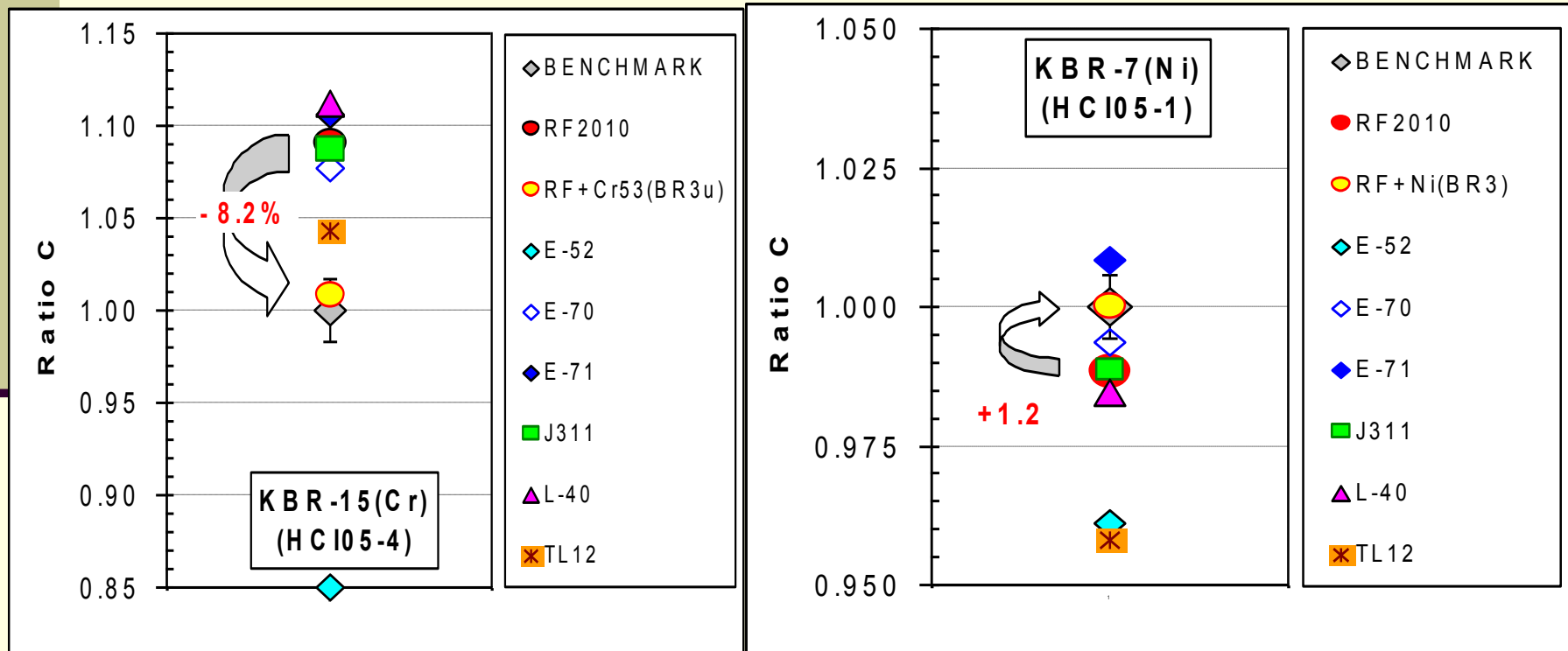
Comparison of experimental & calculated K-eff for fast uranium and plutonium critical assemblies



IPPE benchmark data and K-eff calculations

After reevaluations

E52 – ENDF/B-V.2; E70 – ENDF/B-VII.0; E71 – ENDF/B-VII.1; J311 – JEFF-3.1.1; L-40 – JENDL-4.0; TL12 – TENDL-2012.



- The compiled version of the BROND-3.1 library includes of 372 files.
- Isotopes from hydrogen to curium.
- Neutron energy range from thermal to 20 MeV.
- Covariances are included for 140 files.
- Date of release – May 2016.