Some very preliminary indications from recent adjustment studies intercomparison

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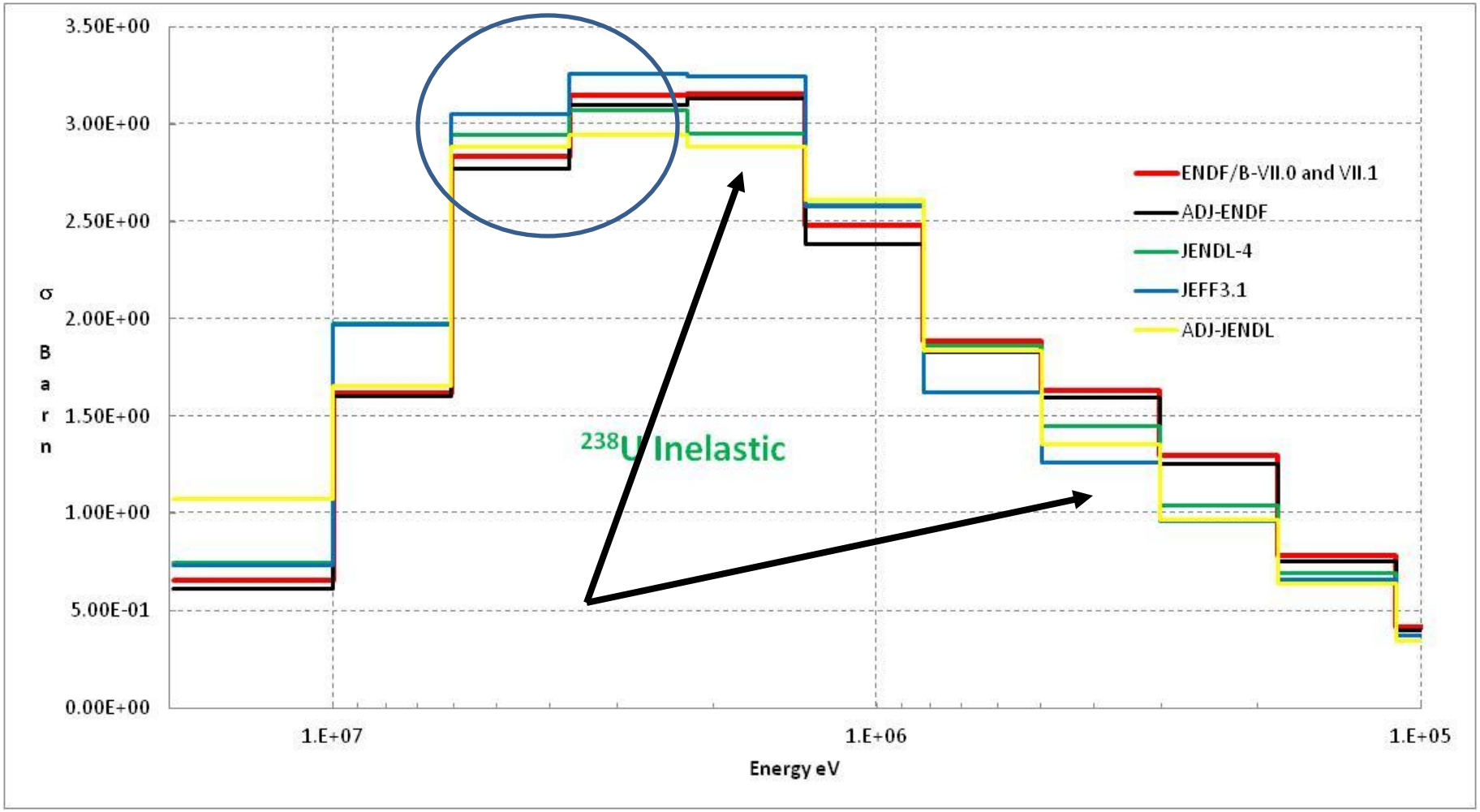
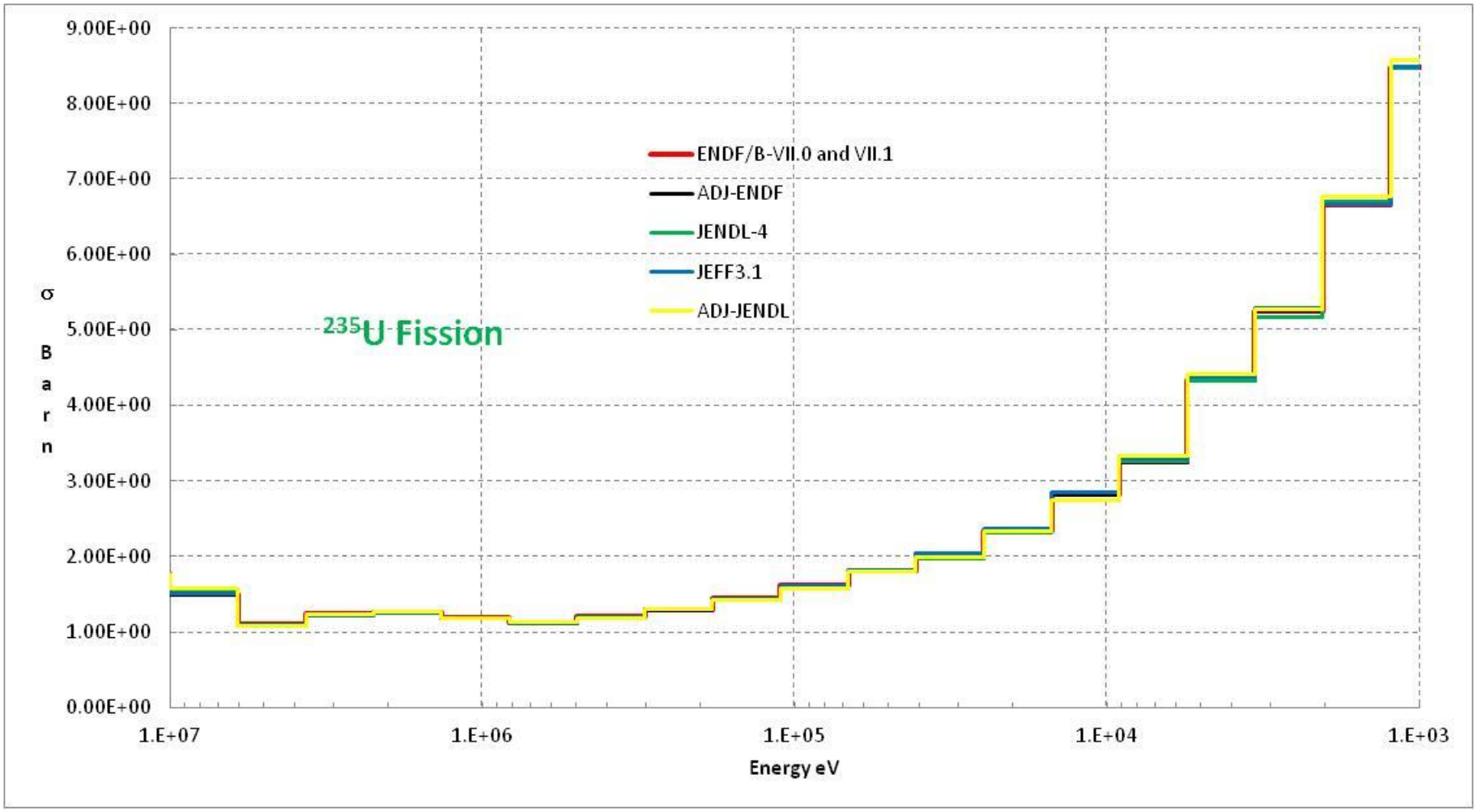
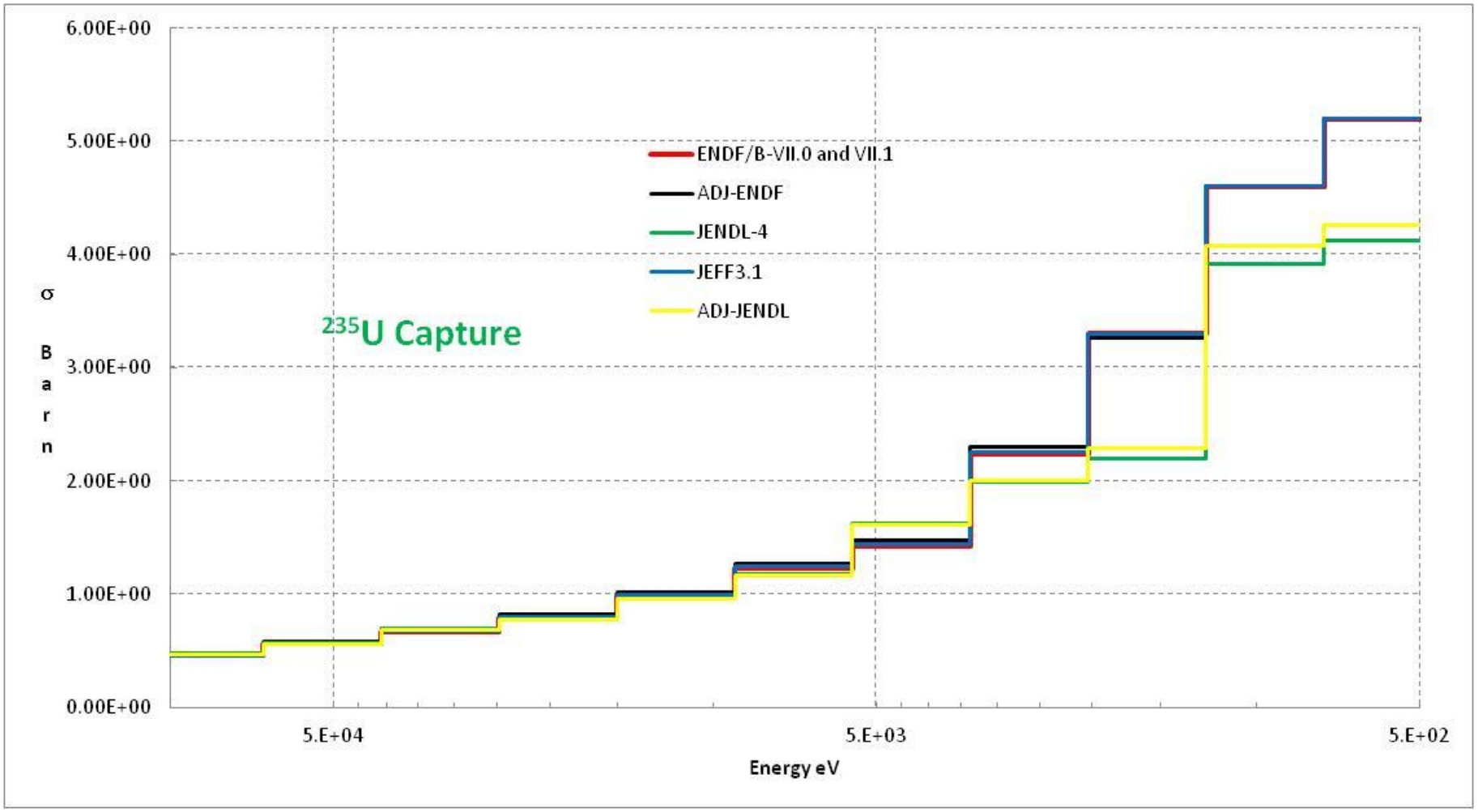


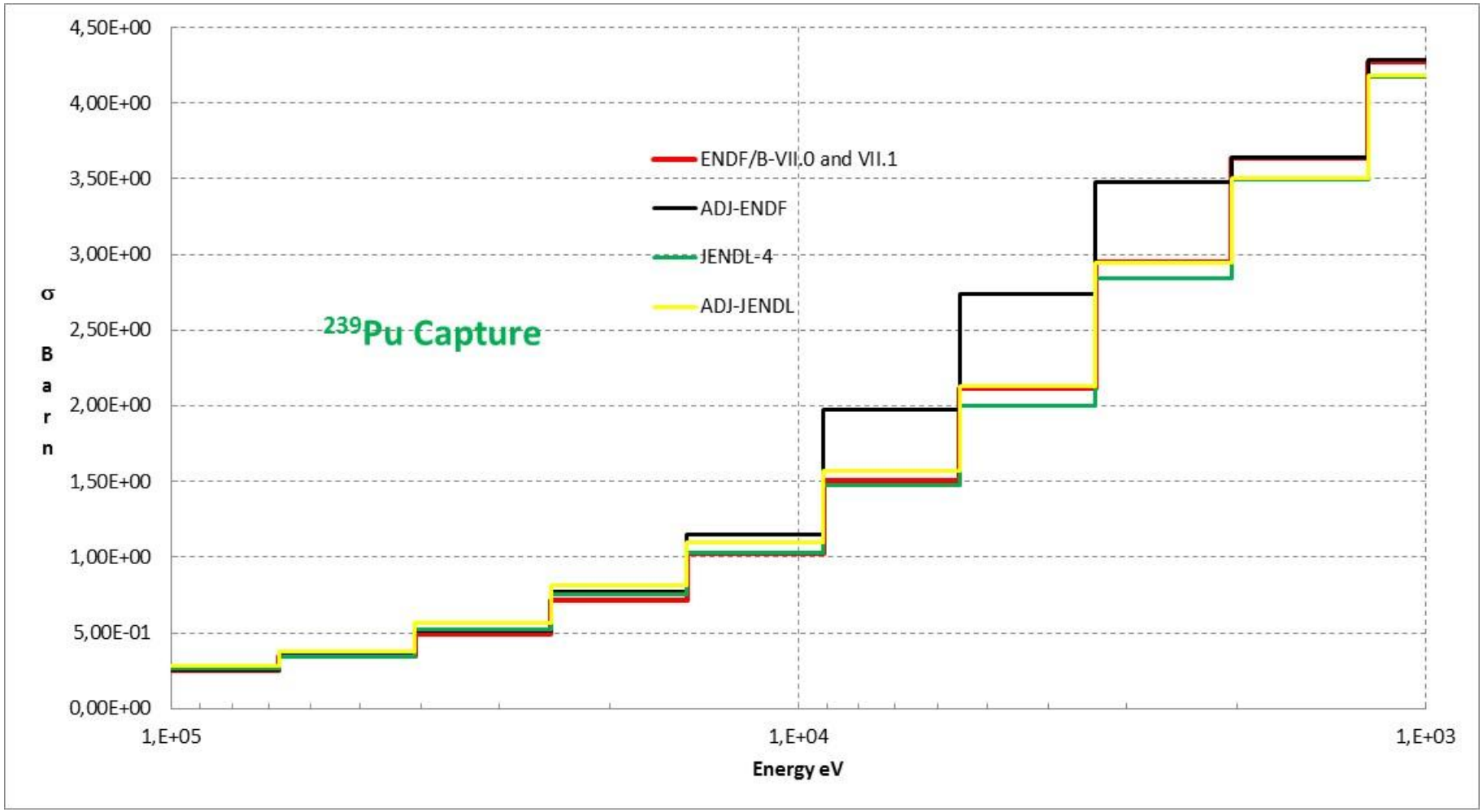
- JEFF values often discrepant with respect to ENDF and JENDL
- Both adjustments ENDF and JENDL indicate lower values in the ~3-6 MeV range
- Discrepancies between ENDF and JENDL in the ranges 2-3MeV and ~300-600 keV
- Probably need of specific integral experiments (e.g. sphere transmission, flat or steep adjoint flux etc)



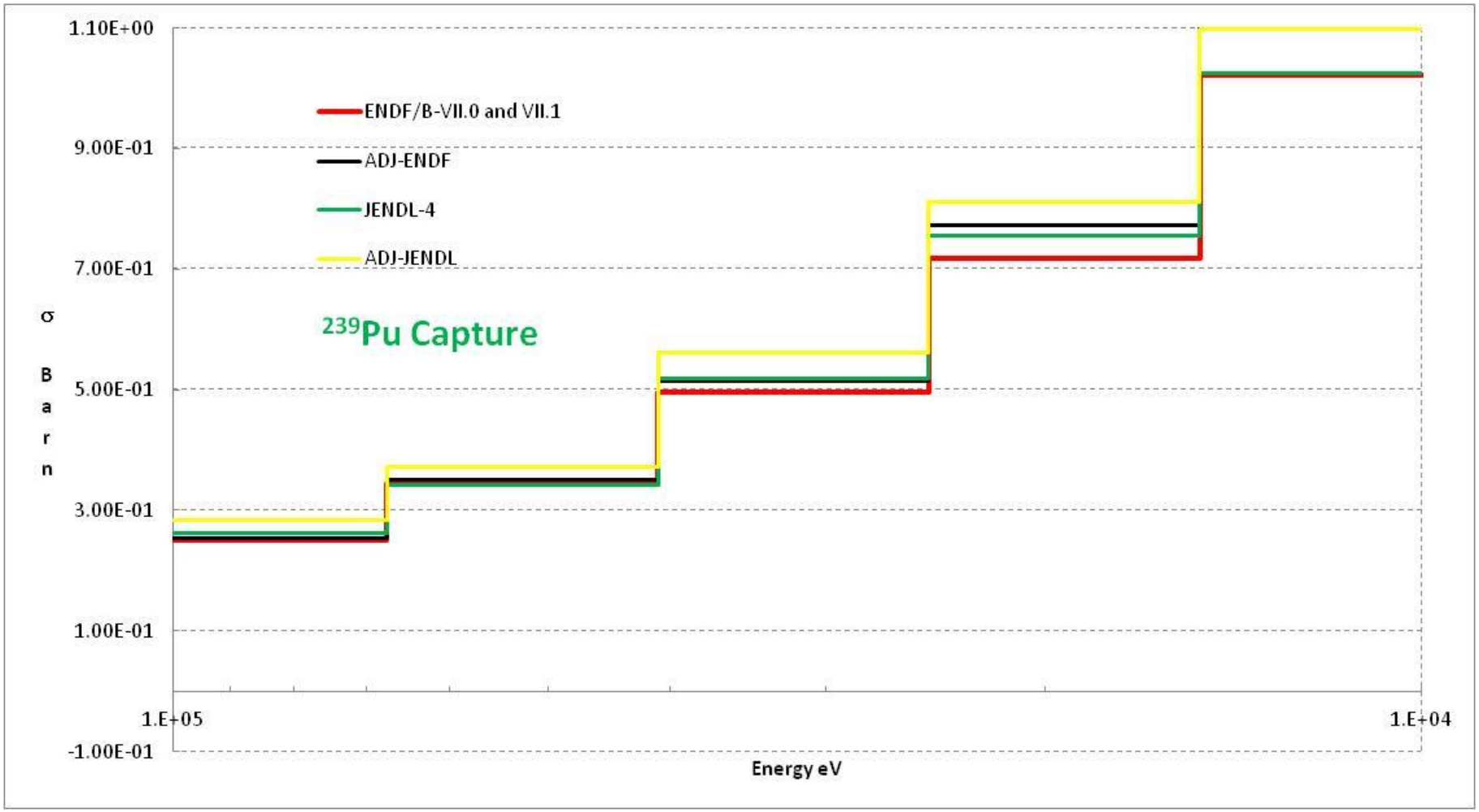
- Relatively small adjustments
- More sensitive experiments needed



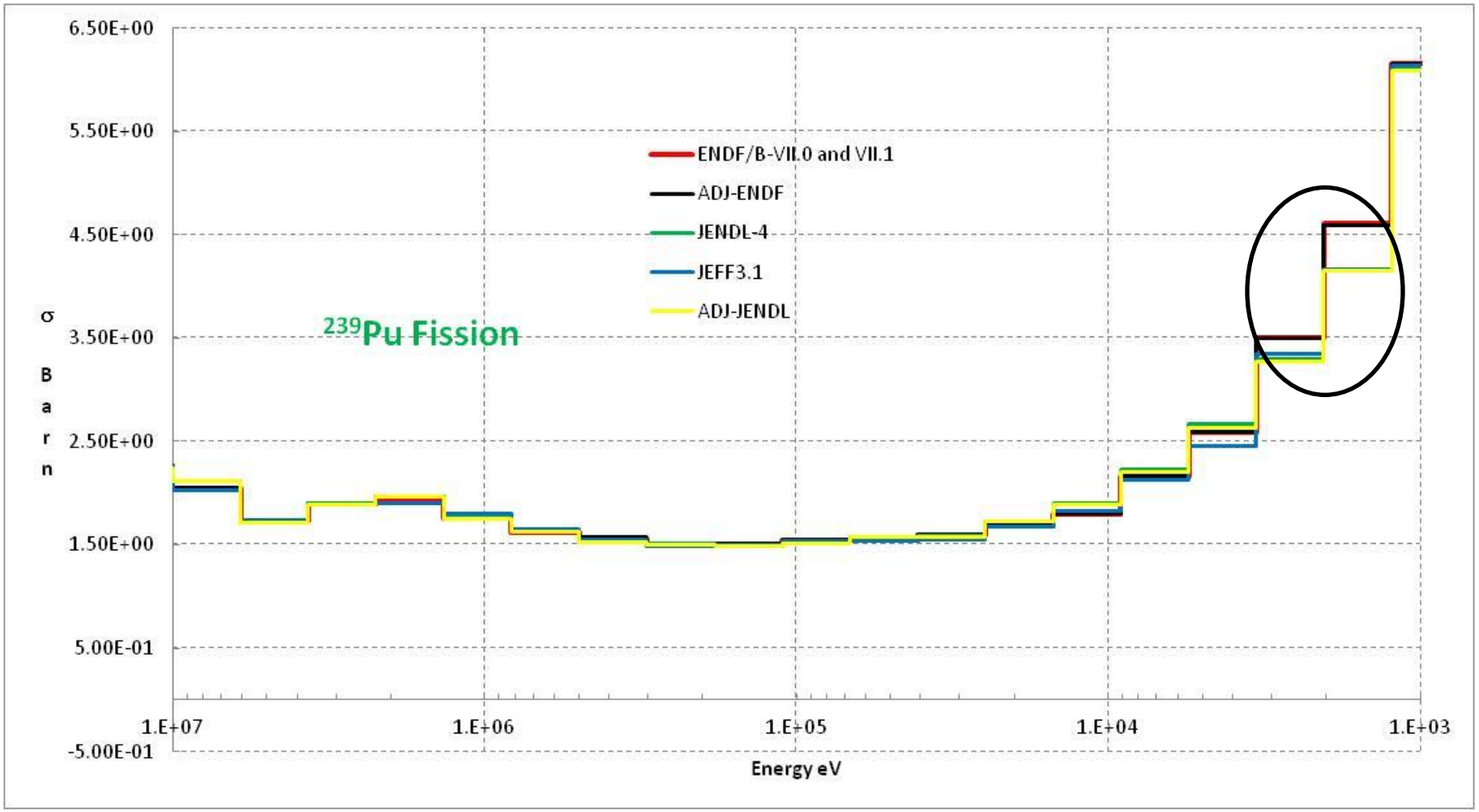
- Significant discrepancies between ENDF and JENDL below 1 keV
- Relatively small adjustments (low values in JENDL-4 already accounts for integral data)



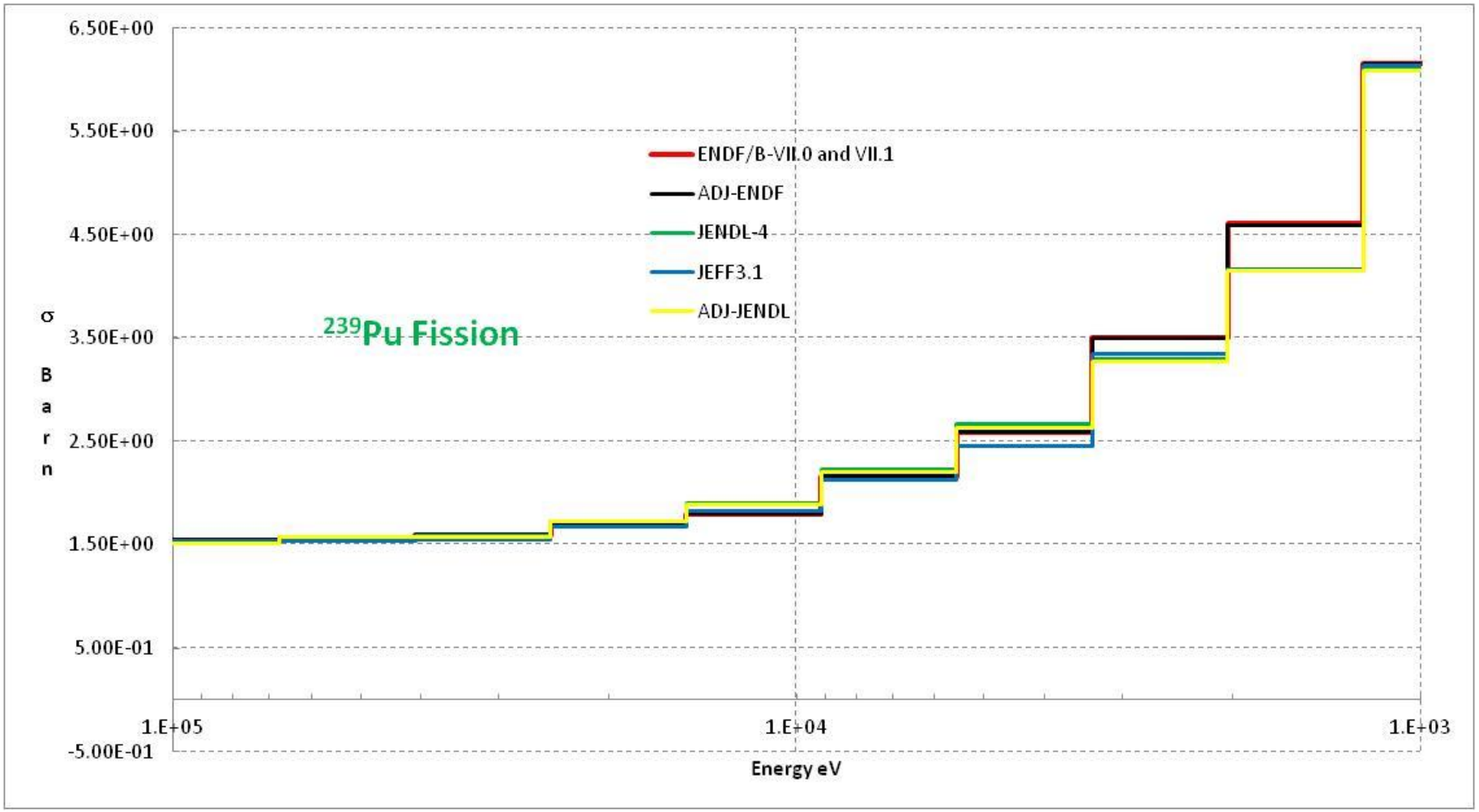
- Adjustments **below 10 KeV** tend to **increase capture** x-section. However much larger increase with ENDF/VII.1 adjustment driven by specific integral measurement (PROFIL pure sample irradiation)



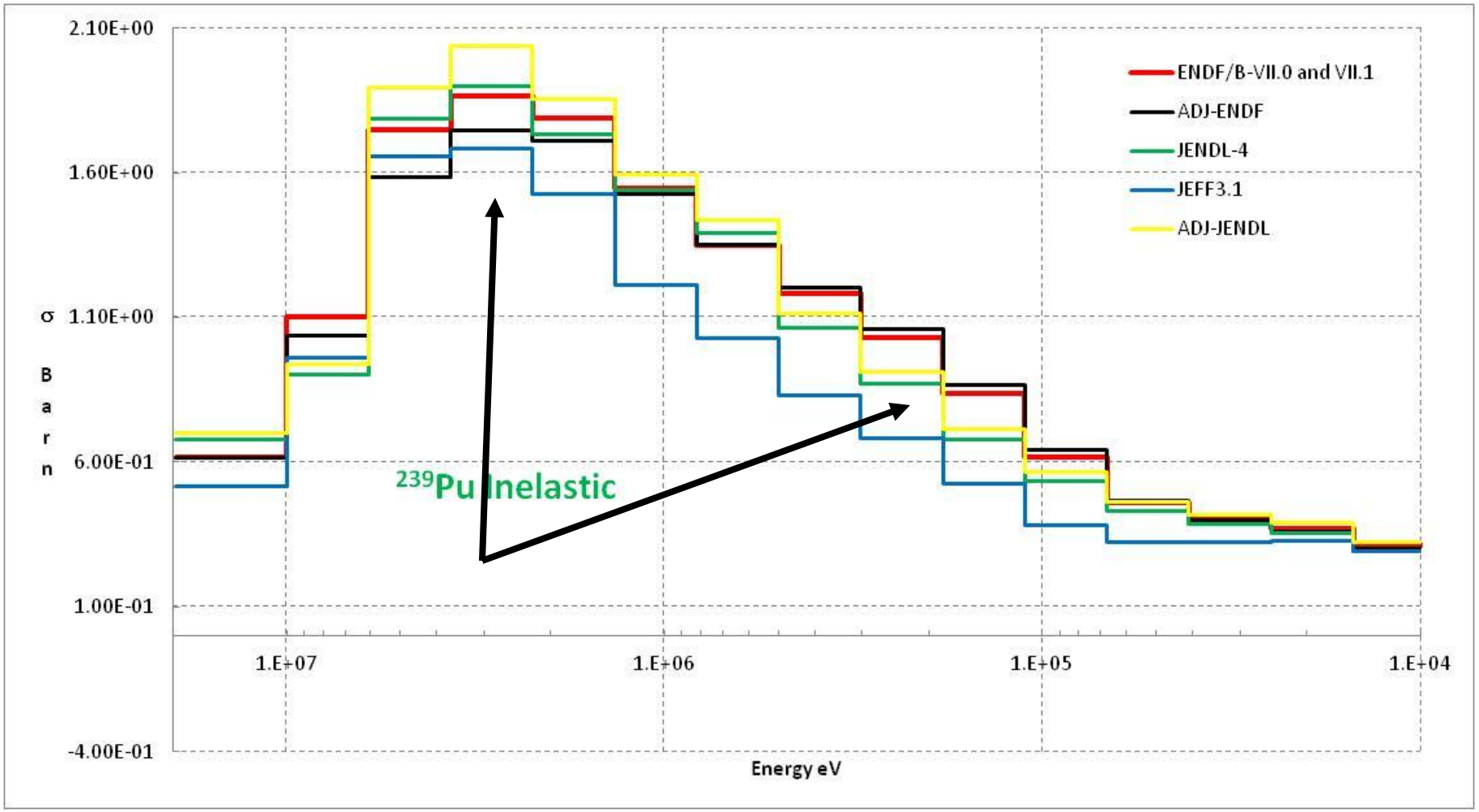
- **Above 10 keV**, **increase of capture** both in JENDL and ENDF (see detailed JAEA study)



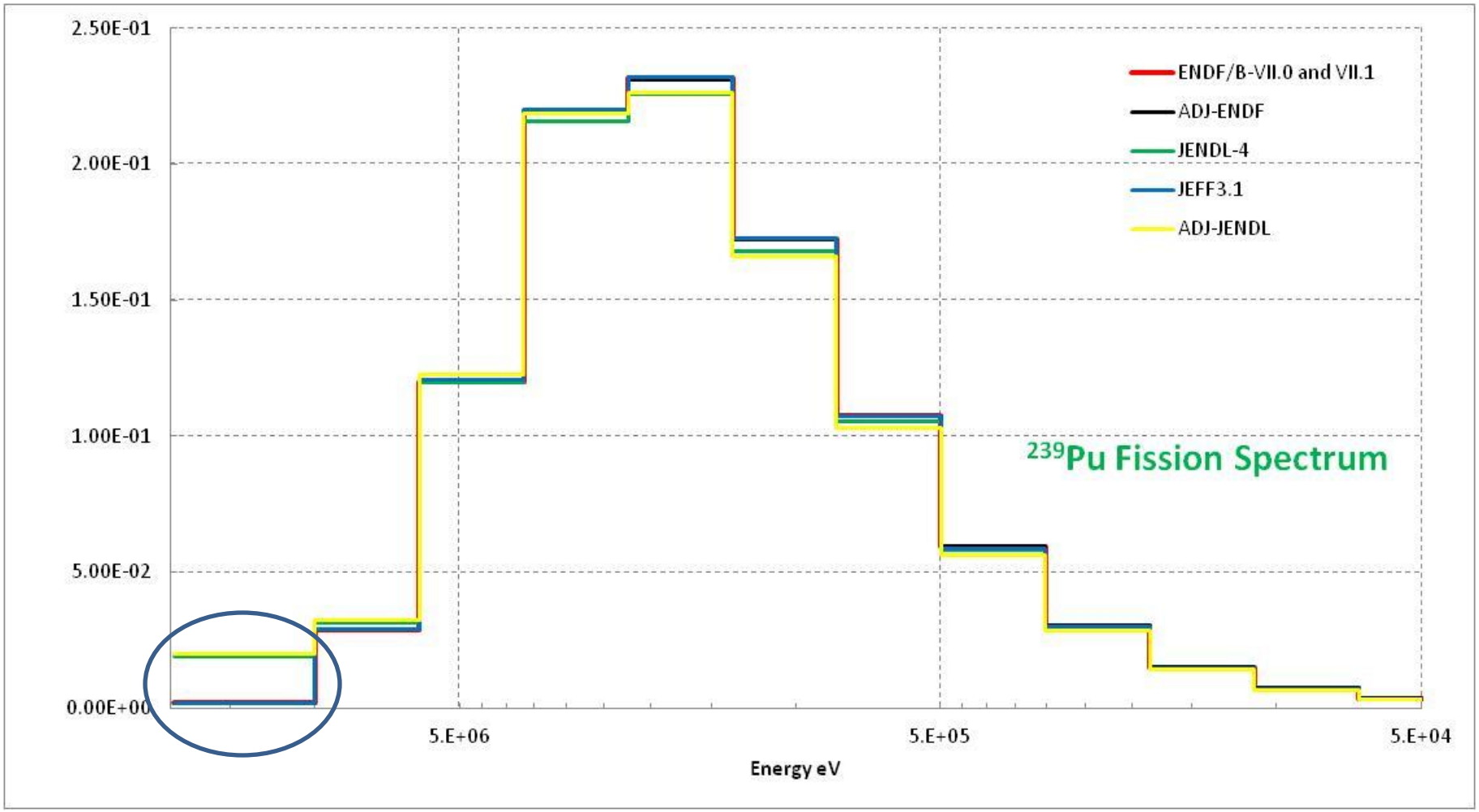
- Small adjustments, due to very small uncertainties in covariance data sets



- Discrepancies between ENDF and JENDL around ~2keV (see fluctuations of x-section as shown in JAEA study)



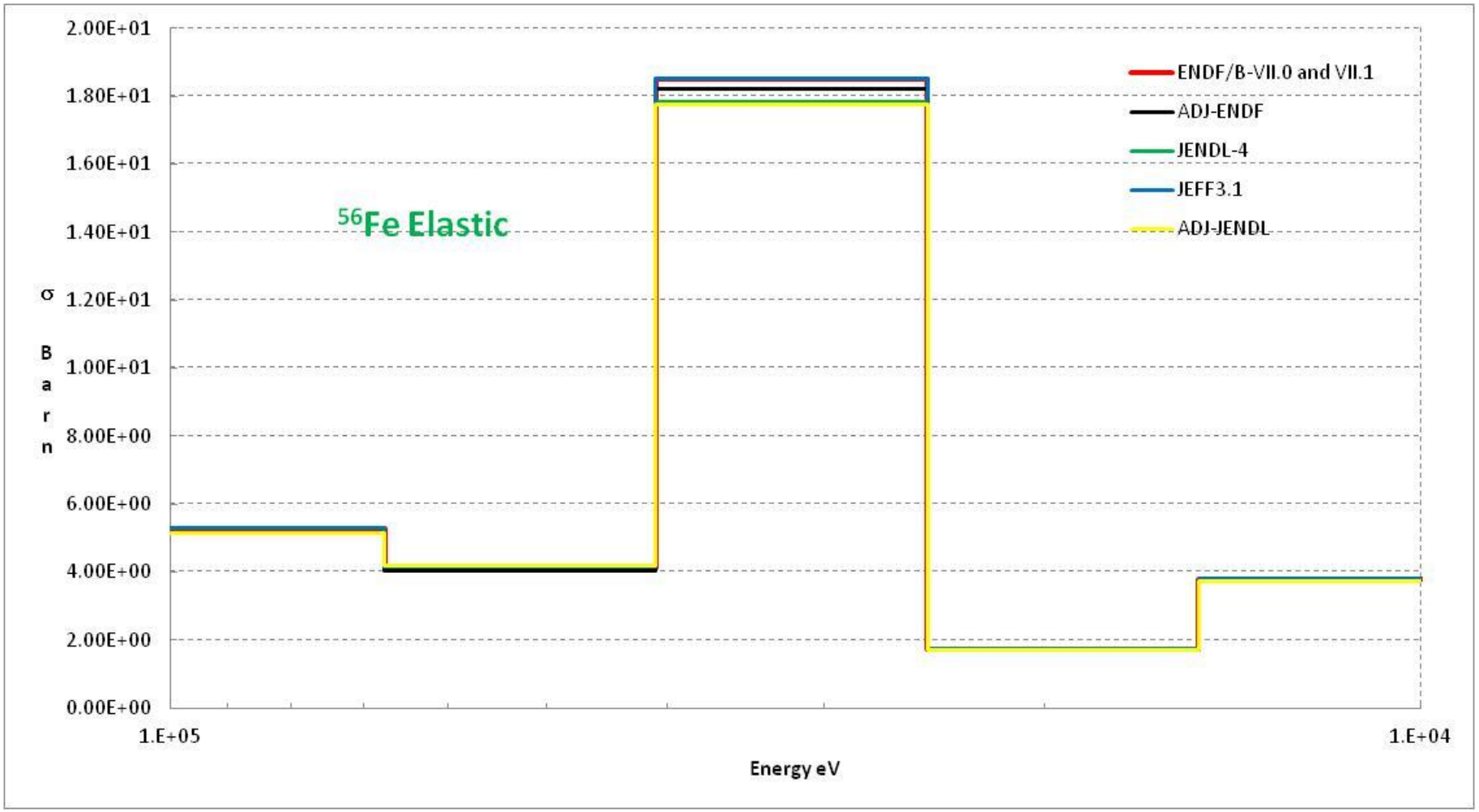
- JEFF Values often discrepant with respect to ENDF and JENDL
- After adjustment, significant discrepancies between ENDF and JENDL in the range
- 2-3MeV (adjustments in opposite directions) and ~300-600 keV
- Probably need of specific integral experiments (flat or steep adjoint flux etc)



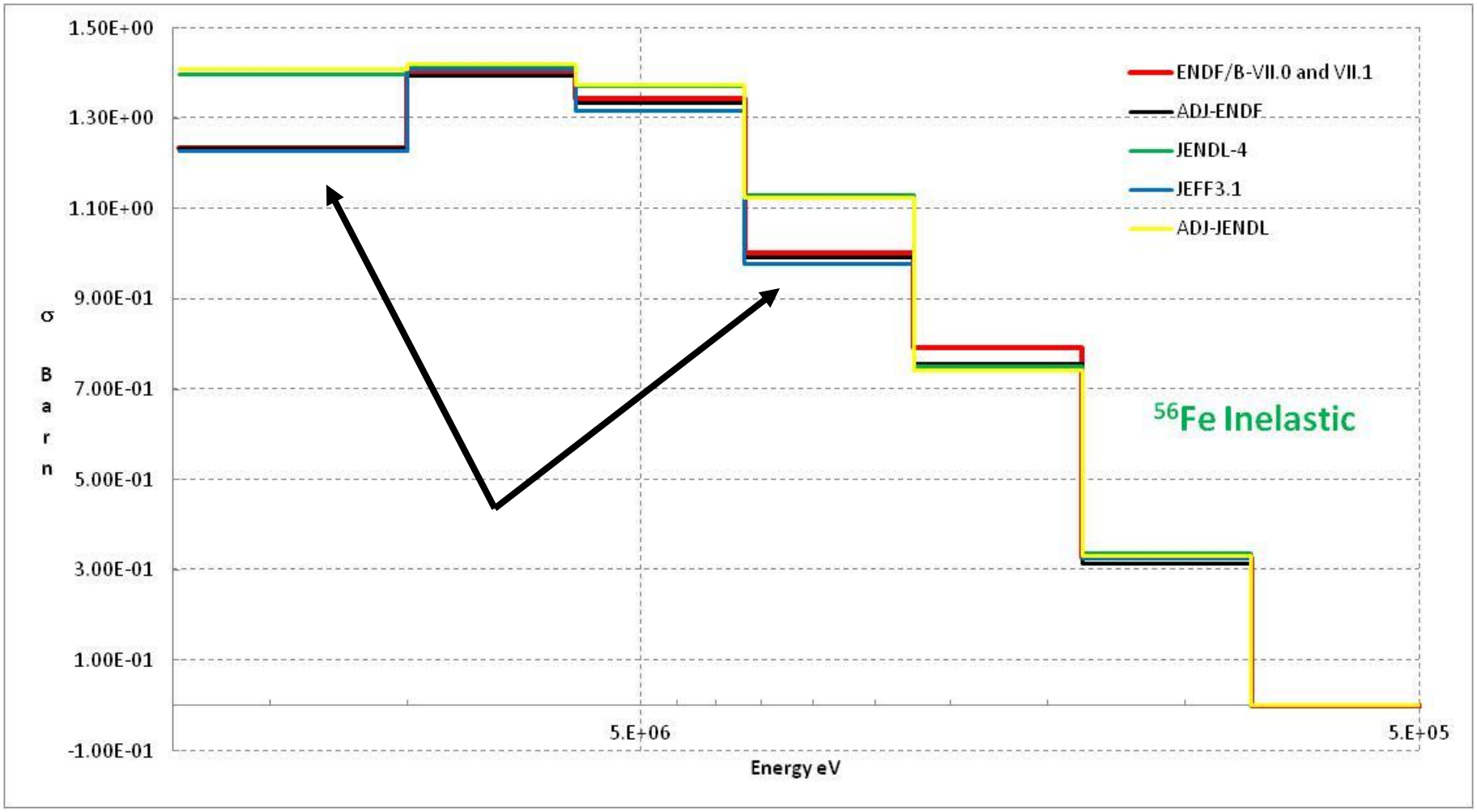
- Adjustments relatively limited
- Some discrepancy among files

E_{Max} (MeV)	JENDL-4 adjusted				ENDF/B-VII.1 adjusted			
	nubar	Fission	chi-p	inel	nubar	Fission	chi-p	inel
19.6	4.24	2.24	**0.020**	**0.70**	4.57	2.26	**0.002**	**0.62**
10.0	4.05	2.11	0.032	**0.937**	3.95	2.05	0.029	**1.04**
6.1	3.53	1.71	0.123	**1.89**	3.55	1.74	0.121	**1.58**
3.8	3.27	1.89	0.219	**2.04**	3.28	1.90	0.219	**1.74**
2 .2	3.12	1.96	0.226	**1.86**	3.13	1.96	0.231	**1.71**
1.35	3.02	1.75	0.166	**1.59**	3.03	1.77	0.172	**1.53**

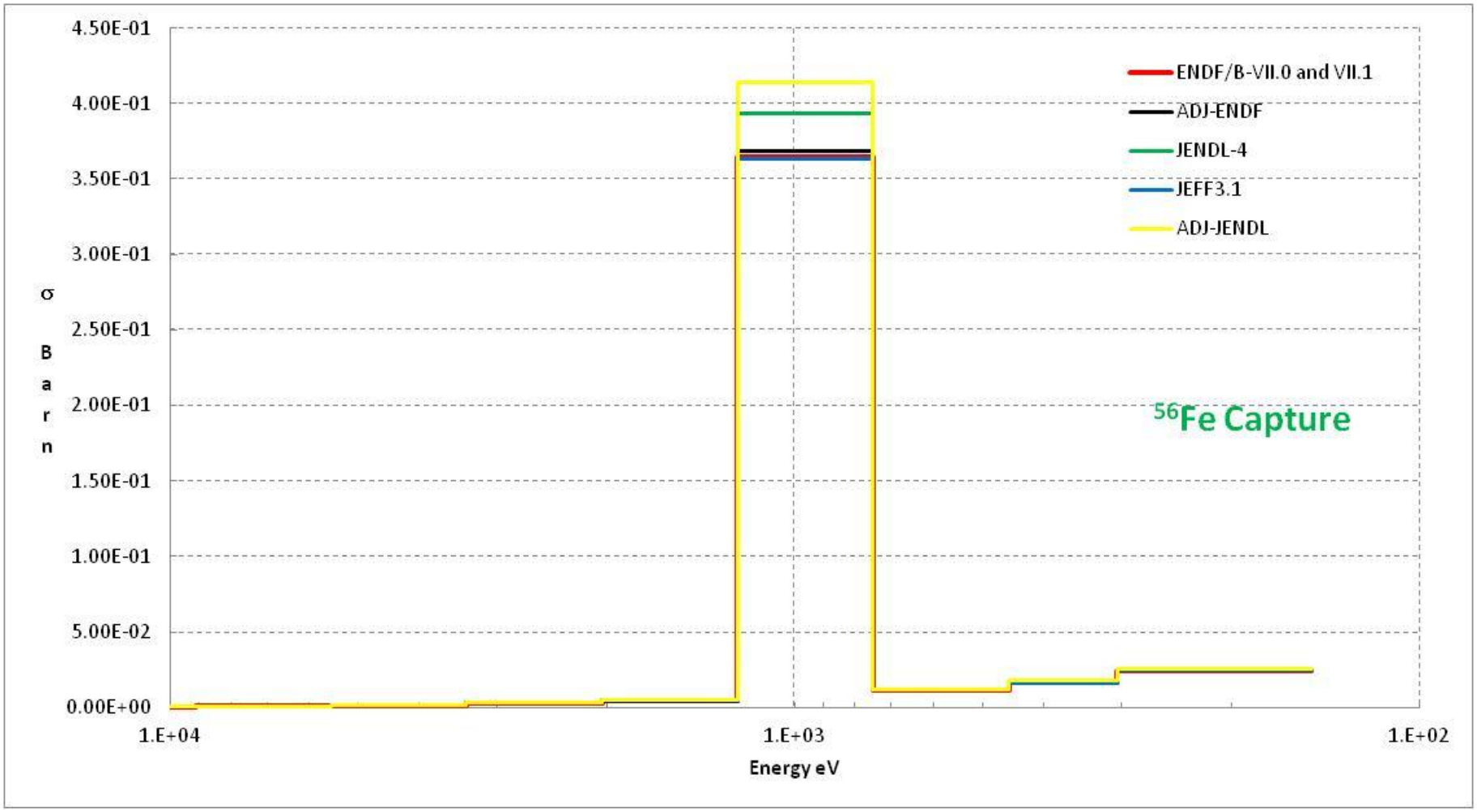
Note: mubar values very close in the two files, before and after adjustment



Some adjustment in the 30-40 keV range
(E.g. ~3% reduction of ENDF/B-VII.1 data)



- After adjustment, still significant discrepancies between ENDF and JENDL in the ranges E>6MeV and E~1MeV
- Probably need of specific integral experiments



- Adjustment suggested at the ~1.2 keV resonance and below.
- Both adjustments ENDF and JENDL, indicate cross section increase (a few percent)

a) Capture and fission of major actinides:

- **Some trends detected.**
- **However, still need of some specific integral experiment to confirm:**
  - **Sample irradiation in well define neutron spectra**
  - **High accuracy fission rates (spectrum indexes)**
  - **K_{eff} measurements to be considered as a global check, that can point out to other discrepant data, once major capture and fission cross sections have been adjusted**

b) Inelastic cross sections (Pu-239, U-238, Fe-56 etc):

- **Trends somewhat dependent on starting data file.**
- **There is risk of compensations among inelastic, fission spectrum, nubar and fission cross section, if only K_{eff} measurements are used**
- **Use of specific integral experiment should be favored:**
  - **Spatial slope of threshold reactions (even in neutron propagation experiments e.g. for Fe)**
  - **Critical experiments with very steep or very flat adjoint flux energy shape, to maximize or minimize inelastic scattering reactivity contribution in e.g. sample reactivity measurements**
  - **Neutron leakage measurements from single material experiments**

c) Covariance data should be as complete as possible (including scattering secondary neutron distributions, angular distributions (P1 terms in Legendre polynomial representations), as well as key cross correlations (reactions and isotopes).

- **Completeness and reliability of covariance data is of particular relevance when K_{eff} experiments are used in assimilation studies.**

Next steps of SG39 will focus on items mentioned above.
JEFF related data to be included in the assimilation trends intercomparisons