C/E ratio for spectrum averaged cross sections (SPA) in ^{235}U(n$_{th}$,f) field
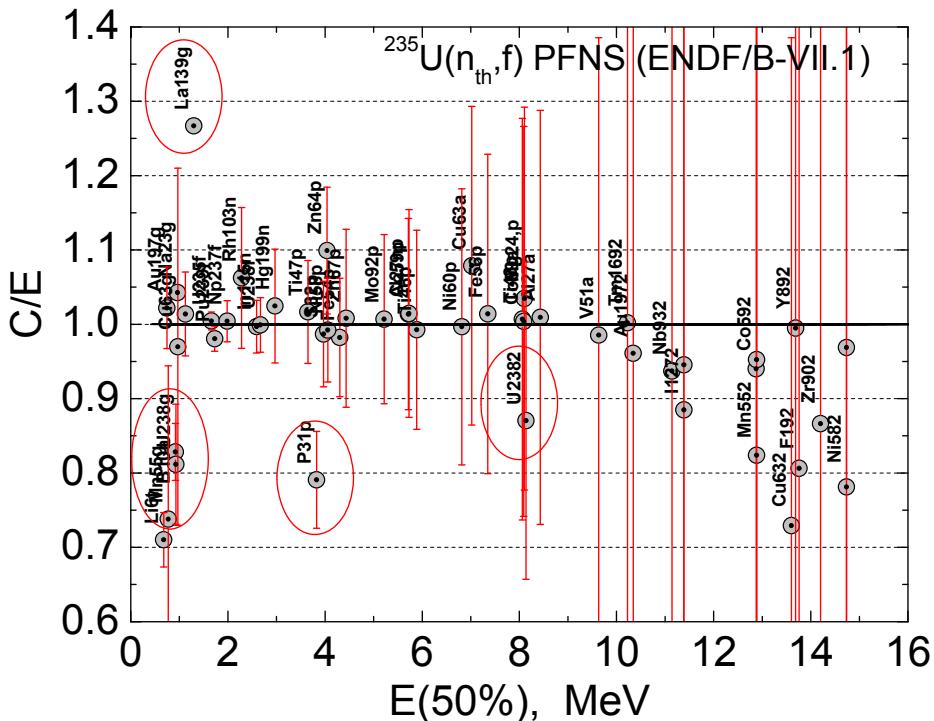
Fig. 1. C/E ratio in ^{235}U(n$_{th}$,f) field: obvious outliers: ^{55}Mn(n,γ), ^{238}U(n,γ), ^{139}La(n,γ), ^{31}P(n,p) and ^{238}U(n,2n). Error bars include only experimental (black) and additionally IRDFF XS and ENDF/B-VII.1 spectrum (red) uncertainties. **^{6}Li(n,α), ^{10}B(n,α) are not outliers, since inclusion of other α-production reactions increase C/E up to 1.0 !**
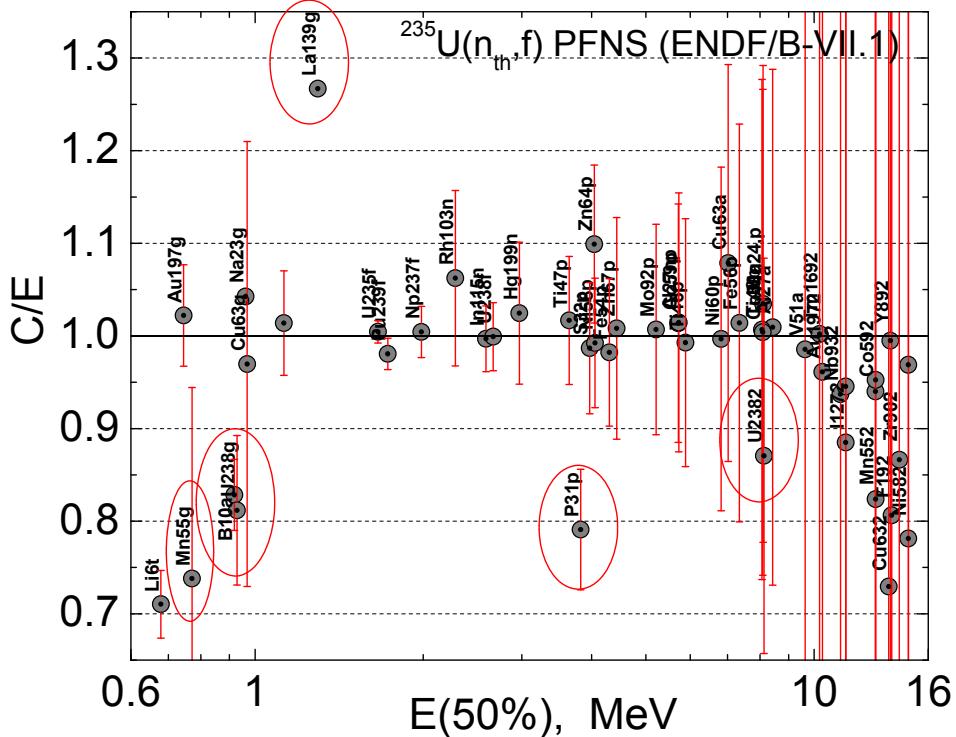
Fig. 2. The same as Fig. 1, but log scale for energy.
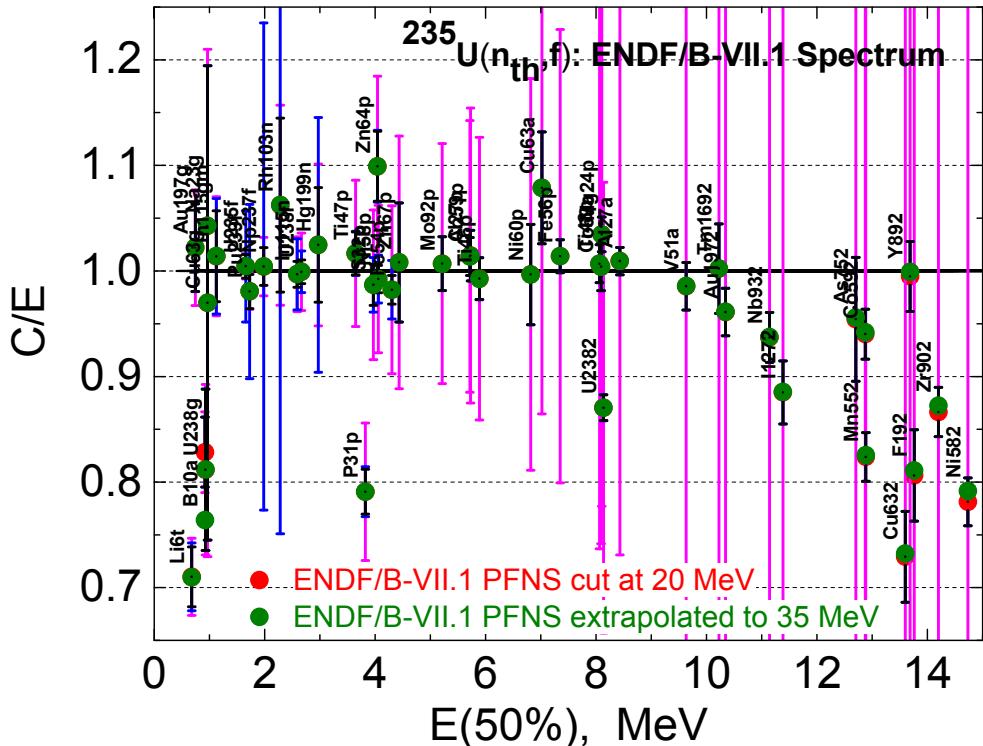
Fig. 3. C/E with IRDFF-1.03 cross sections averaged in the ^{235}U(n$_{th}$,f) PFNS from ENDF/B-VII.1 [1]. Uncertainties: experimental SPA (black bars), IRDFF-1.03 cross sections (blue), evaluated spectra (pink) - not shown.
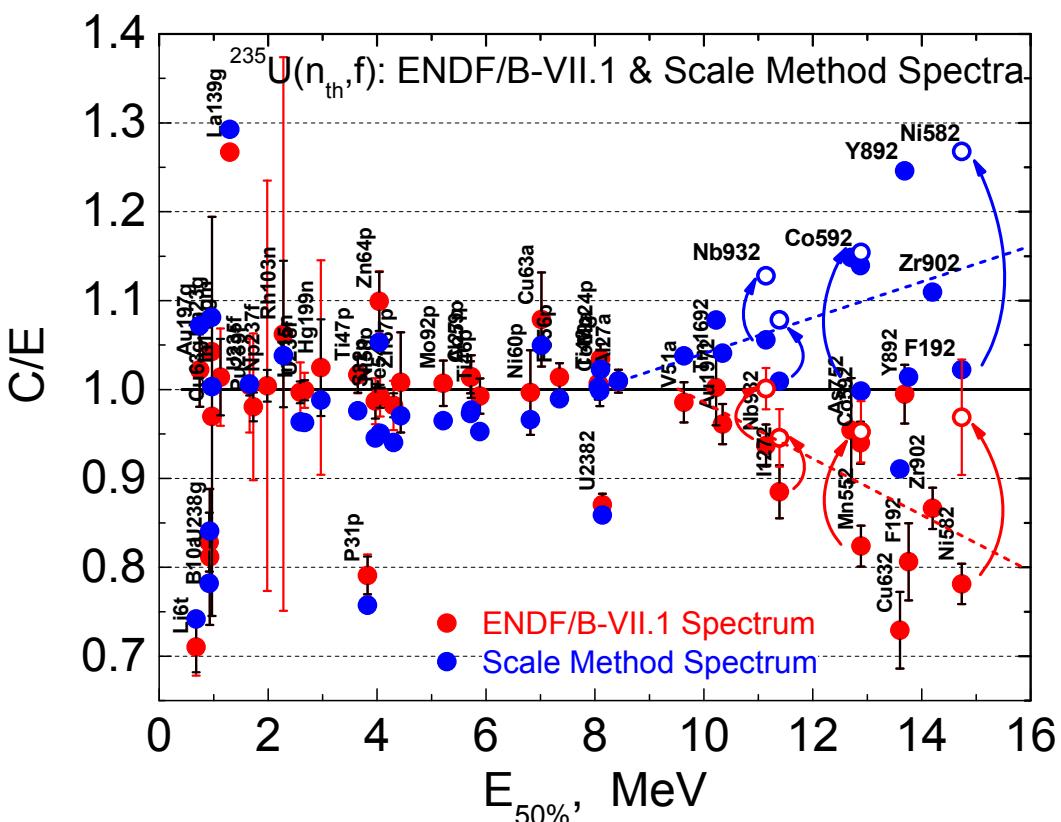

Fig. 4. C/E with IRDFF-1.03 cross sections averaged in the ^{235}U(n$_{th}$,f) PFNS from ENDF/B-VII.1 [1] and Scale method [2]. Uncertainties: experimental SPA (black bars), IRDFF-1.03 cross sections (red), evaluated spectra - not shown. Three curved arrows show the change of C/E for ^{127}I(n,2n), ^{55}Mn(n,2n) and ^{58}Ni(n,2n) when SPA recommended by W. Mannhart are replaced with K. Zolotarev values.

Date: Jan 2014 – Sep 2014

Reference

1. M.B. Chadwick, M. Herman et al., Nuclear Data Sheets, **112**, 2887 (2011)
2. N.V. Kornilov, Nucl. Sci. Eng., **169**, 290 (2011)

The same but for Cf-252 field
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