

C/E ratio for spectrum averaged cross sections (SPA) in $^{235}\text{U}(n_{\text{th}},f)$ field

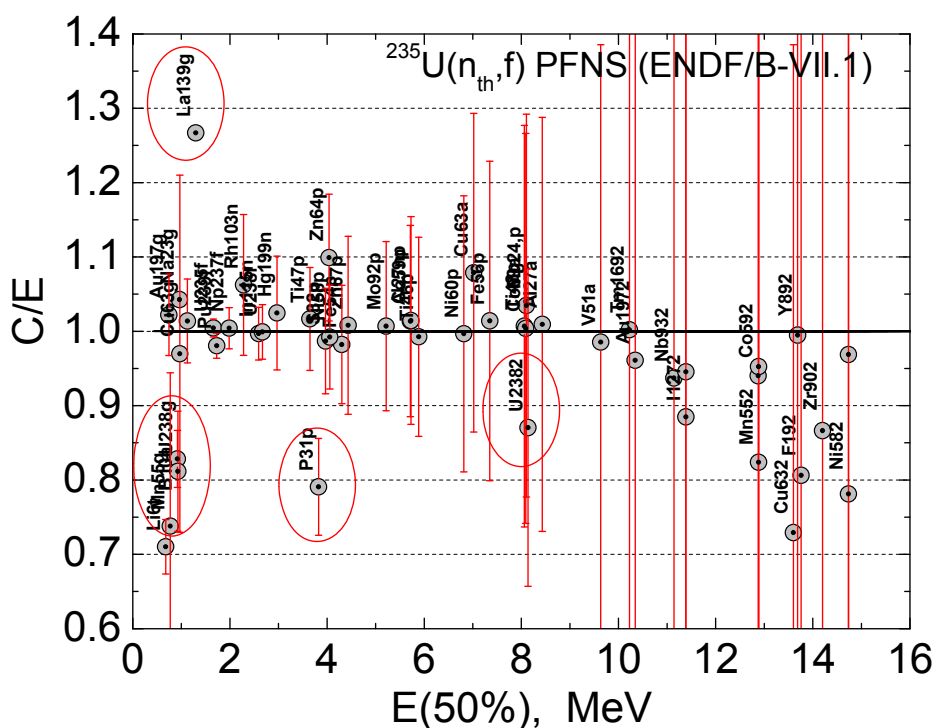


Fig. 1. C/E ratio in $^{235}\text{U}(n_{\text{th}},f)$ field: obvious outliers: $^{55}\text{Mn}(n,\gamma)$, $^{238}\text{U}(n,\gamma)$, $^{139}\text{La}(n,\gamma)$, $^{31}\text{P}(n,p)$ and $^{238}\text{U}(n,2n)$. Error bars include only experimental (black) and additionally IRDF XS and ENDF/B-VII.1 spectrum (red) uncertainties. $^6\text{Li}(n,\alpha)$, $^{10}\text{B}(n,\alpha)$ are not outliers, since inclusion of other α -production reactions increase C/E up to 1.0 !

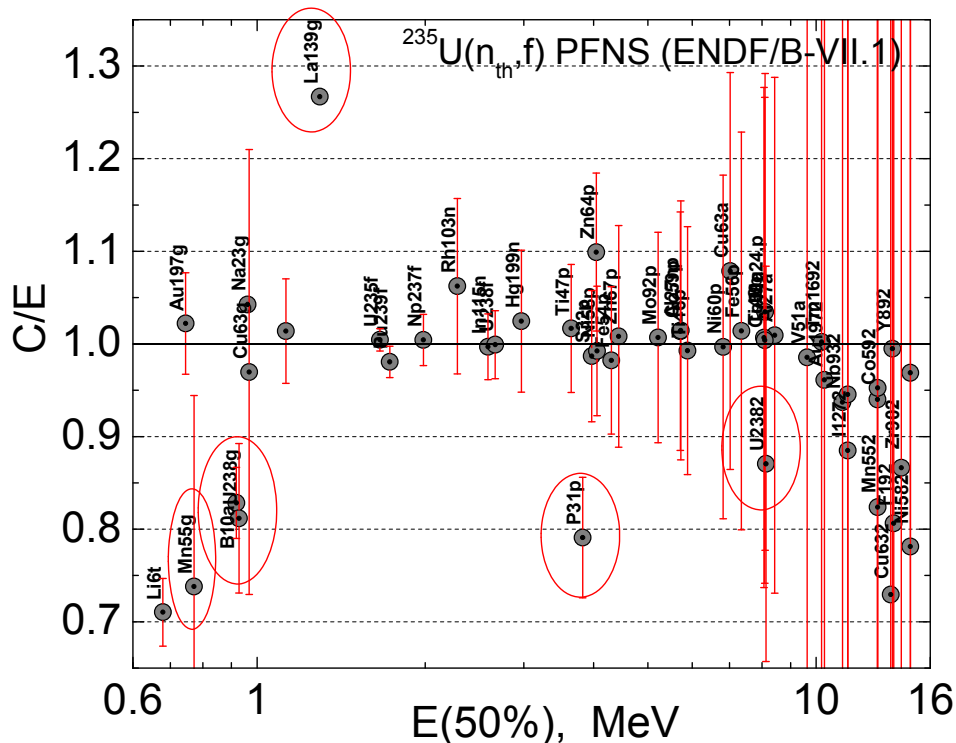


Fig. 2. The same as Fig. 1, but log scale for energy.

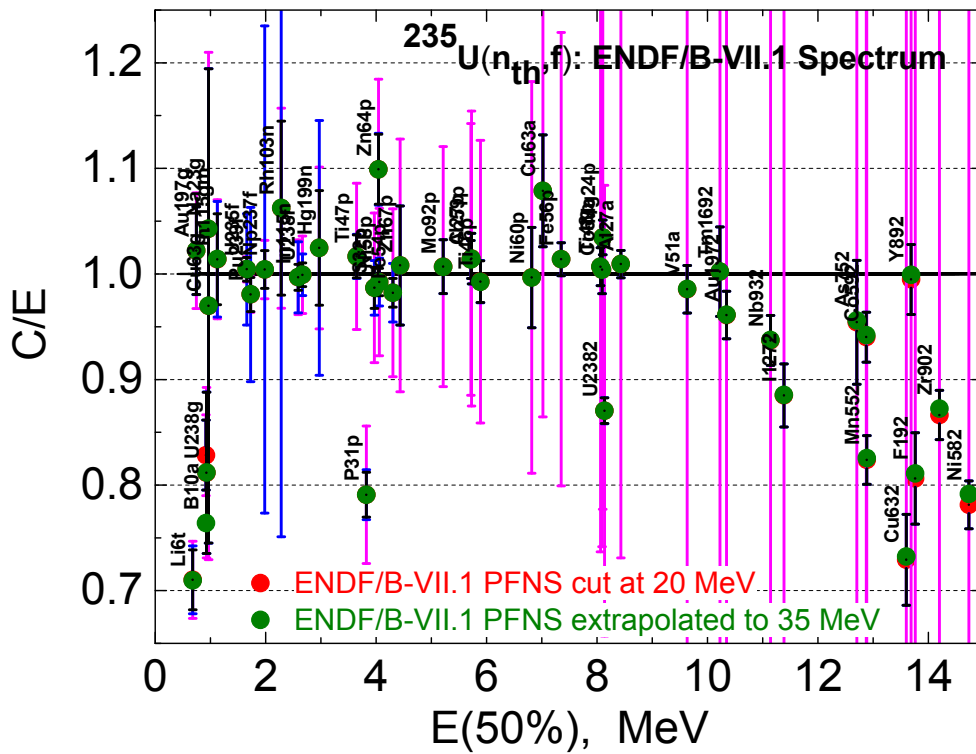


Fig. 3. C/E with IRDFFF-1.03 cross sections averaged in the $^{235}\text{U}(n_{th},f)$ PFNS from ENDF/B-VII.1 [1]. Uncertainties: experimental SPA (black bars), IRDFFF-1.03 cross sections (blue), evaluated spectra (pink) - not shown.

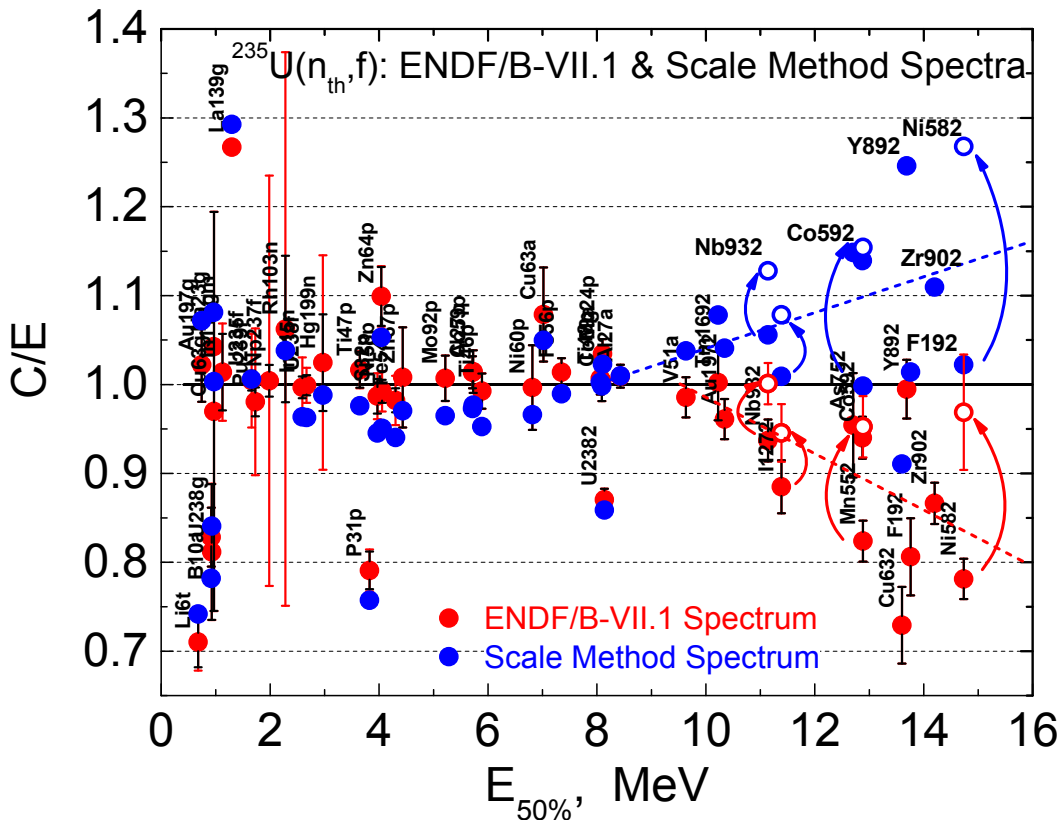


Fig. 4. C/E with IRDFFF-1.03 cross sections averaged in the $^{235}\text{U}(n_{th},f)$ PFNS from ENDF/B-VII.1 [1] and Scale method [2]. Uncertainties: experimental SPA (black bars), IRDFFF-1.03 cross sections (red), evaluated spectra - not shown. Three curved arrows show the change of C/E for $^{127}\text{I}(n,2n)$, $^{55}\text{Mn}(n,2n)$ and $^{58}\text{Ni}(n,2n)$ 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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