

JENDL/FPY-2011 (corrected version)

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We found some anomalies in the ^{235}U thermal neutron fission yields data of JENDL/FPY-2011. Figures (a)-(d) illustrate the independent fission yield of ENDF/B-VII and JENDL/FPY-2011 as a function of Z for $A=86, 88, 100, 131$, respectively. The yields of $^{86}_{32}\text{Ge}$, $^{88}_{33}\text{As}$, $^{100}_{37}\text{Rb}$, $^{131}_{48}\text{Cd}$ for JENDL/FPY-2011 are larger than those of its neighbors and deviate from an inversed parabolic shape. The same deviations are also found in ENDF/B-VII data because the independent fission yields of JENDL/FPD-2011 are basically taken from those of ENDF/B-VII. We found that the problem of ^{86}Ge arises from misidentification of measured data seen in LA-UR-94-3106 [1] which the fission yield data of ENDF/B-VI (ENDF/B-VII) are based on. See Ref. [2] for more details.

We therefore corrected the independent fission yields of above 4 nuclides with the method reported in Ref. [3]. The results are shown with the triangles in Figs (a)-(d). The yields are lowered and seem to be reasonable. Before this correction, the aggregated delayed neutron calculated with JENDL/FPY-2011 and FPD-2011 [3] was $\bar{\nu} = 0.01863$. After this correction, it is reduced to $\bar{\nu} = 0.01694$ and becomes closer to experimental data ($\bar{\nu} = 0.01585 \pm 0.0005$) [4].

Reference

- [1] T.R. England and B.F. Rider, "Evaluation and Compilation of Fission Product Yields," LA-UR-94-3106, ENDF-349, Los Alamos National Laboratory (1994).
- [2] J. Katakura, F. Minato, and K. Ohgama, "Revision of the JENDL FP Fission Yield Data," EPJ Web of Conferences 111, 08004 (2016).
- [3] J. Katakura, "JENDL FP Decay Data File 2011 and Fission Yields Data File 2011," JAEA-Data/Code 2011-025, Japan Atomic Energy Agency (2012).
- [4] G.R. Keepin, T.F. Wimett, and R.K. Zeigler, "Delayed Neutrons from Fissionable Isotopes of Uranium, Plutonium, and Thorium," Phys. Rev. 107, 1044 (1957).

