# JENDL/FPY-2011(corrected version)

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The 2nd modified version of JENDL/FPY-2011 was released in Sep. 2016. This update corrected some abnormally large fission product yields of $^{235}$U thermal neutron fission, as seen in Ref. [1].

However, an error in the modified JENDL/FPY-2011 released in Sep. 2016 has been found. The problem is due to the fact that there is a bug in the computer code generating JENDL/FPY-2011, which fails to correctly load some isomers from the ENDF/B-VI fission yield data, which was chosen as the base of JENDL/FPY-2011. The isomers affected by the reading failure are $^{72m}$Ga, $^{71m}$Ge, $^{84m}$As, $^{109m}$Ru, $^{122m}$Ag, $^{130m}$In, $^{128m}$Sn, $^{125m}$Xe, and $^{169m}$Yb. Their fission yields are significantly different from the correct values. Other nuclides also deviate from correct values due to the normalization process. This problem is found only in the $^{235}$U fission yield data from the version of JENDL/FPY-2011 released in May 2016 and Sep. 2016, and does not exist in the 1st version released in Jul. 2012.

A new version without the aforementioned bug has been produced. We shall refer the corrected version as JENDL/FPY-2011 (Feb. 2017) and the old version as JENDL/FPY-2011 (Sep. 2016) hereafter. The mass yields of the JENDL/FPY-2011 (Sep. 2016) and JENDL/FPY-2011 (Feb. 2017) are briefly shown in Fig. 1. The spike observed at A=128 is due to $^{128m}$Sn. We also show the decay heat $f(t)$ for $^{235}$U fission resulting from instant neutron radiation calculated by JENDL/FPY-2011 (Sep. 2016) and JENDL/FPY-2011 (Feb. 2017), and its ratio of JENDL/FPY-2011 (Feb. 2017) to JENDL/FPY-2011 (Sep. 2016) in Fig. 2. Tables B1-B3 in Document_B1-3.PDF list the independent fission yields of JENDL/FPY-2011 (Sep. 2016) and JENDL/FPY-2011 (Feb. 2017), and Tables C1-C3 in Document_C1-3.PDF list the cumulative fission yields. The percent difference, defined as $(Y_{Sep} - Y_{Feb})/Y_{Sep} \times 100$, is shown in the last column.

We apologize for this inconvenience.

References

[1] J. Katakura, F. Minato, K. Ohgama, "Revision of the JENDL FP Fission Yield Data," EPJ Web of Conferences 111, 08004 (Mar. 2016).

[2] Dickens, J.K. et al., "Fission Product Energy Release for Time following Thermal Neutron Fission of $^{235}$U between 2 and 14,000 seconds," Oak Ridge National Laboratory, ORNL/NUREG-14 (1977); J.K. Dickens et al.. Nucl. Sci. Eng., 74, p.106 (1980).

[3] Akiyama, M. et al., J. Atom. Ener. Soc. of Japan, 24, p.709 (1982) [in Japanese]; Akiyama, M. et al., ibid., 24, p.803 (1982) [in Japanese]; Akiyama, M. and An, S. "Measurement of fission product decay heat for fast reactor," Proc. of Int. Conf. on Nucl. Data for Science and Technol., Antwerp, Belgium, p.237 (1982).

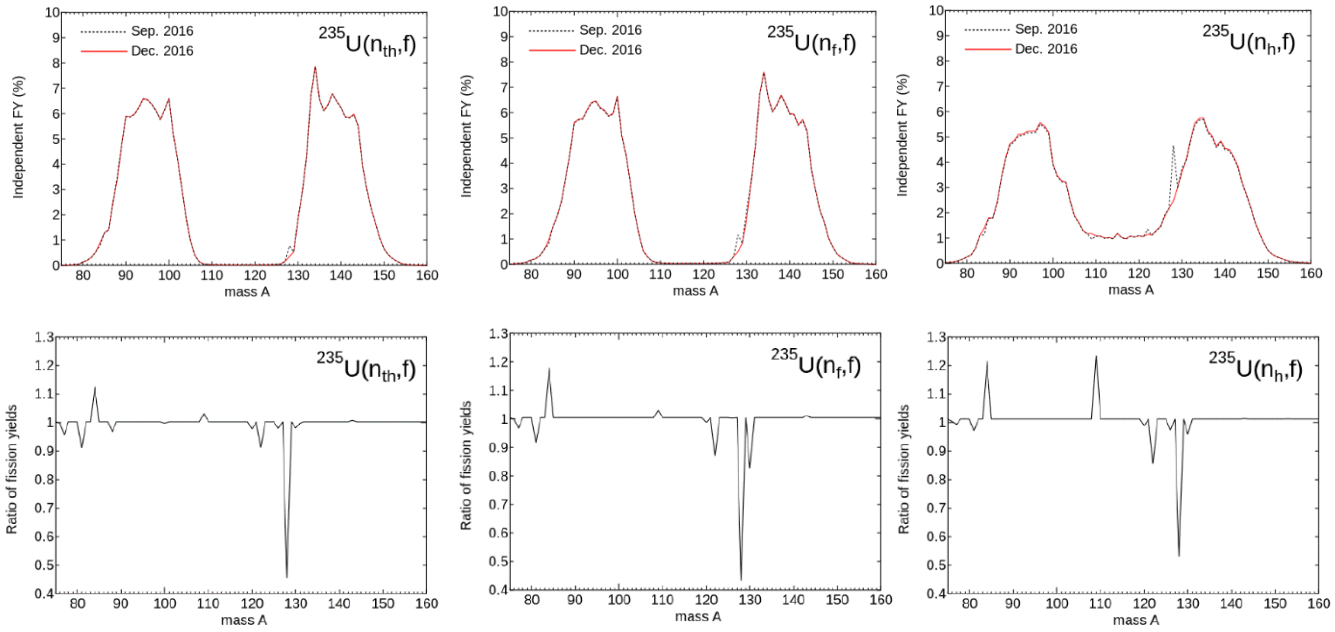


Fig. 1: Independent fission yields for $^{235}$U as a function of mass for JENDL/FPY-2011 (Sep. 2016) and (Feb. 2017). The results of thermal neutrons ($n_{th}$, right), fast neutrons ($n_f$, middle), and high energy neutrons ($n_h$=14 MeV, right) are shown. Bottom panels show the ratios of independent fission yields of JENDL/FPY-2011 (Feb. 2017) to JENDL/FPY-2011 (Sep. 2016) for thermal (left), fast (middle), and 14 MeV (right), respectively.

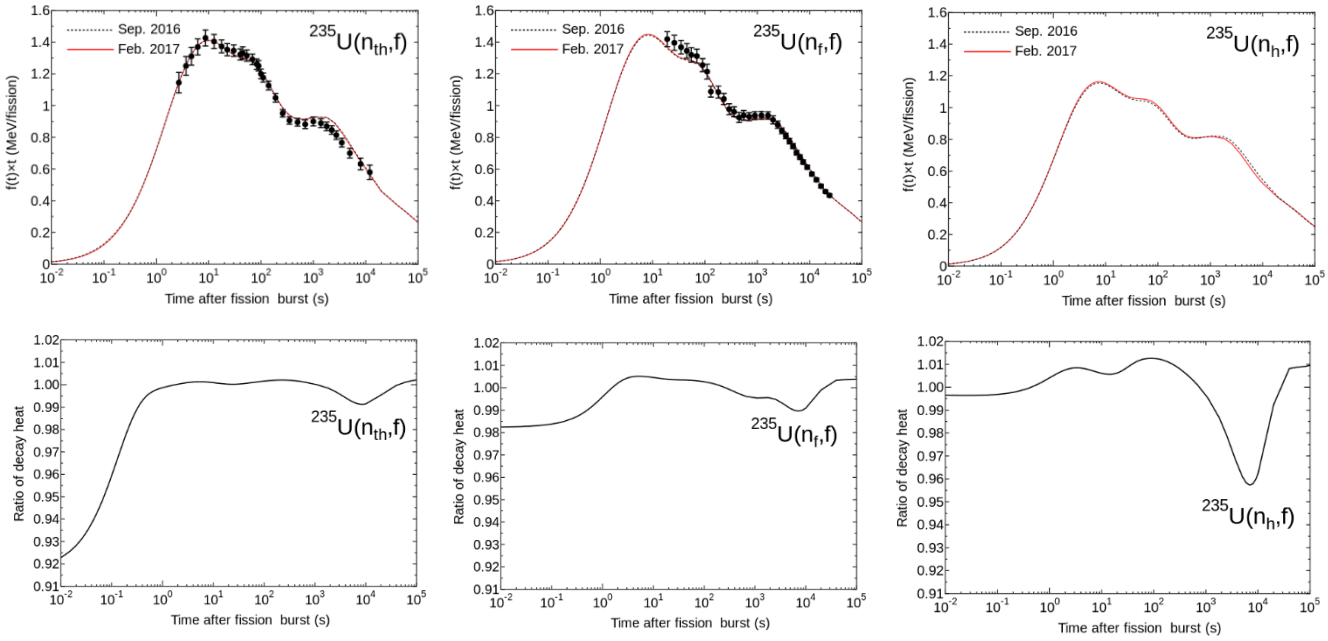


Fig. 2: Top panels are the decay heat of $^{235}$U as a function of time for JENDL/FPY-2011 (Sep.2016) and (Feb. 2017). The registered data for thermal neutrons ($n_{th}$, right), fast neutrons ($n_f$, middle), and high energy neutrons ($n_h$=14 MeV, right) are shown. Experimental data taken from [2] and [3] are shown for thermal fission and fast neutron fission, respectively. Bottom panels show the ratios of decay heat of JENDL/FPY-2011 (Feb. 2017) to JENDL/FPY-2011 (Sep. 2016) for thermal (left), fast (middle), and 14 MeV (right), respectively.