

Erratum: Discovery of New Isotope ^{241}U and Systematic High-Precision Atomic Mass Measurements of Neutron-Rich Pa-Pu Nuclei Produced via Multinucleon Transfer Reactions
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T. Niwase[✉], Y. X. Watanabe[✉], Y. Hirayama[✉], M. Mukai, P. Schury, A. N. Andreyev[✉], T. Hashimoto, S. Iimura, H. Ishiyama, Y. Ito, S. C. Jeong, D. Kaji, S. Kimura, H. Miyatake, K. Morimoto, J.-Y. Moon[✉], M. Oyaizu, M. Rosenbusch[✉], A. Taniguchi, and M. Wada[✉]



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In this Letter, we reported on mass measurements of neutron-rich actinide nuclides. Recently, we found that an incorrect reference mass for $^{133}\text{Cs}^+$ had been used in our mass evaluation due to a typographical error in the input value. The reference mass of $^{133}\text{Cs}^+$ was derived from the literature value of neutral ^{133}Cs reported in AME2020 [1]. However, the mass of ^{133}Cs was incorrectly transcribed in the original calculation. Specifically, $m(^{133}\text{Cs}) = 132.905\,419\,59\,\text{u}$ was used instead of the correct value, $m(^{133}\text{Cs}) = 132.905\,451\,959(9)\,\text{u}$. We have therefore repeated the mass evaluation using the correct value.

Although the time-of-flight ratio ρ^2 used to derive the masses remains unchanged, the resulting mass excesses are shifted by around 50 keV from the originally reported values. The updated mass excesses ME_{EXP} and the corresponding laser wavelengths λ_1 are listed in Table I, and the differences between the experimental data and the values listed in AME2020, Δm , are shown in Fig. 1. In addition, Fig. 2 shows the Δ_{2n} plot based on the revised mass values.

This correction does not affect the conclusions or the physical discussion of the Letter.

TABLE I. The first excitation step laser wavelength λ_1 , the square of the measured time-of-flight ratio: ρ^2 between analyte ions and the reference ion $^{133}\text{Cs}^+$, and mass excesses from the measurements (ME_{EXP}). No λ_1 values are listed for nonresonantly ionized isotopes.

Nuclide	λ_1 (nm)	ρ^2	ME_{EXP} (keV/ c^2)
^{235}U	...	0.884 252 029(207)	40 947(44)
^{235}Pa	387.452	0.884 257 591(207)	42 324(44)
^{236}U	...	0.888 020 252(341)	42 466(74)
^{236}Pa	387.456	0.888 032 082(342)	45 395(74)
^{237}U	...	0.891 794 198(195)	45 402(42)
^{237}Pa	387.456	0.891 803 150(203)	47 618(44)
^{238}U	387.213	0.895 564 126(94)	47 343(20)
^{239}U	387.214	0.899 339 527(93)	50 639(20)
^{239}Np	385.056	0.899 334 426(88)	49 376(19)
^{239}Pu	...	0.899 331 542(182)	48 662(40)
^{240}U	387.216	0.903 110 293(72)	52 787(16)
^{240}Np	385.058	0.903 108 632(129)	52 376(28)
^{240}Pu	...	0.903 099 630(133)	50 147(29)
^{241}U	387.217	0.906 886 310(203)	56 236(45)
^{241}Np	385.062	0.906 878 922(142)	54 407(31)
^{241}Pu	...	0.906 873 491(279)	53 062(61)
^{242}U	387.218	0.910 658 345(409)	58 699(90)
^{242}Np	...	0.910 653 763(366)	57 564(81)
^{242}Pu	...	0.910 642 192(300)	54 699(66)

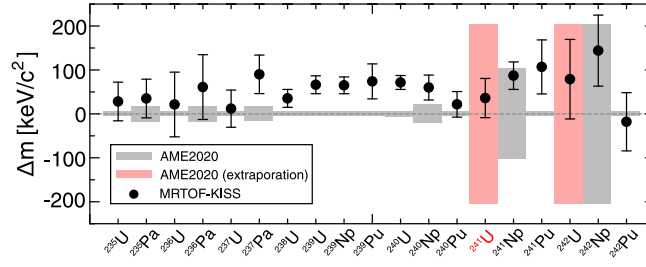


FIG. 1. Difference of the present masses from those listed in AME2020. The gray shadows show the experimental AME2020 uncertainties, while the red color indicates the extrapolated ones for $^{241,242}_{92}\text{U}$.

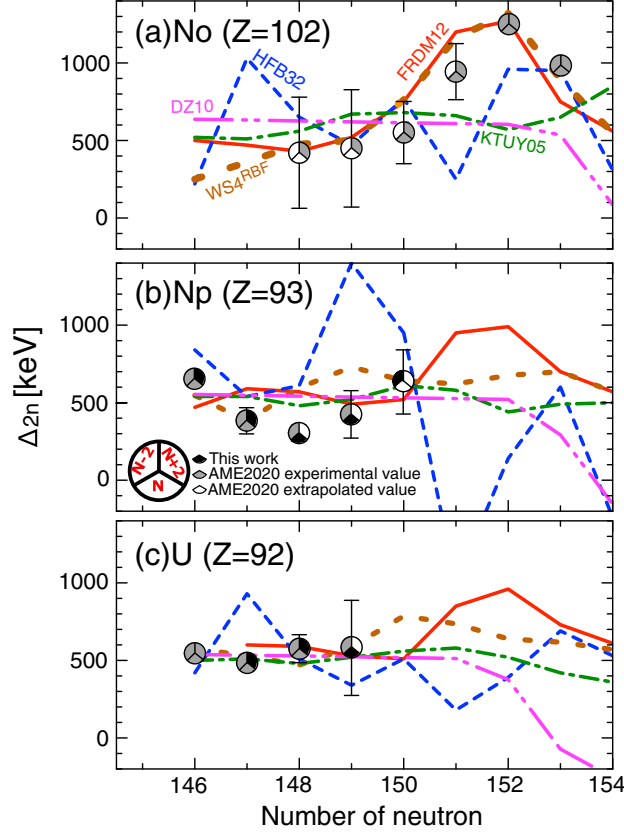


FIG. 2. Two-neutron shell gap parameter Δ_{2n} for (a) $_{102}\text{No}$, (b) $_{93}\text{Np}$, and (c) $_{92}\text{U}$ isotopes. Data points are divided into three segments to indicate which mass data are used for three masses contributing to $\Delta_{2n}(N, Z)$ [upper left, $m(N-2, Z)$; upper-right, $m(N+2, Z)$; and bottom, $m(N, Z)$]. Black segment indicates experimental values from this work. White and gray segments show the extrapolated and experimental values from AME2020, respectively. The extrapolated masses have typical uncertainty of $\delta m \sim 200 \text{ keV}/c^2$. Solid and dashed lines represent the calculations from the various theoretical mass models specified in the top panel, DZ10 [2], FRDM12 [3], WS4RBF [4], HFB32 [5], and KTUY05 [6].

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