
ERRATA

**Trapped-Ion Technique for Measuring the Nuclear Charge Radii of Highly Charged
Radioactive Isotopes**
[Phys. Rev. Lett. 76, 1031 (1996)]

S. R. Elliott, P. Beiersdorfer, and M. H. Chen

[S0031-9007(96)01633-X]

In our recent Letter we reported a measurement of the difference in the mean square radius between ^{233}U and ^{238}U as $\delta\langle r^2 \rangle^{233,238} = -0.457 \pm 0.043 \text{ fm}^2$. This measurement was based on the spectroscopy of few-electron U ions observed in an electron beam ion trap (EBIT). Specifically the $2s_{1/2}-2p_{3/2}$ transitions in Li-, Be-, B-, and C-like ^{233}U and ^{238}U were measured. The change in nuclear size was deduced from the isotopic dependence of the transitions energies.

We measured a shift in the transition of about 320 meV between the two isotopes. To translate this isotopic energy shift into $\delta\langle r^2 \rangle^{233,238}$, we incorporated a nuclear polarization correction in the amount of 24 meV. The value of this correction was based on the theoretical work of Ref. [1]. Subsequent to our publication, the authors of Ref. [1] published an Erratum [2] in which they state that they overestimated the size of the nuclear polarization correction by a factor of 2π . Using the corrected value of the nuclear polarization correction (4 meV), we determine $\delta\langle r^2 \rangle^{233,238} = -0.432 \pm 0.043 \text{ fm}^2$, which can be compared to a new global mean of all measurements of $\delta\langle r^2 \rangle^{233,238} = -0.422 \pm 0.028 \text{ fm}^2$. The other qualitative conclusions in our paper do not change.

[1] Guenter Plunien *et al.*, Phys. Rev. A **43**, 5853 (1991); G. Plunien and Gerhard Soff, *ibid.* **51**, 1119 (1995).

[2] Guenter Plunien and Gerhard Soff, Phys. Rev. A **53**, 4614 (1996).