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Corrigendum: A study of self-consistent Hartree–Fock plus Bardeen–Cooper–Schrieffer calculations with finite-range interactions (2014 *J. Phys. G: Nucl. Part. Phys.* 41 025102)

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(Some figures may appear in colour only in the online journal)

This corrigendum is intended to correct some figures in the paper. After being published, we found an error in the Hartree–Fock code regarding the calculation of the spin–orbit term. This error affects the isotopes with open subshells. Figures 1–8 presented below substitute the

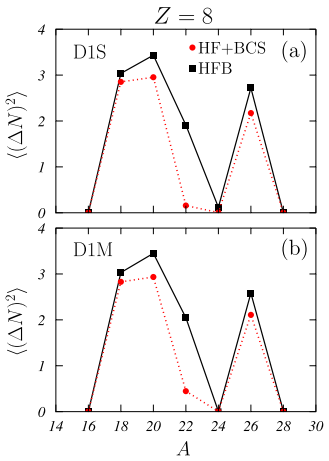

Figure 1. Values of the particle fluctuation index $\langle(\Delta N)^2\rangle$ in oxygen isotopes obtained in HF+BCS (red dots) and HFB (black squares) calculations carried out with the D1S, panel (a), and D1M, panel (b), Gogny interactions. The lines are drawn to guide the eyes. In this case only neutrons contribute, therefore $\langle(\Delta N)^2\rangle \equiv \langle(\Delta N)^2\rangle_n$.

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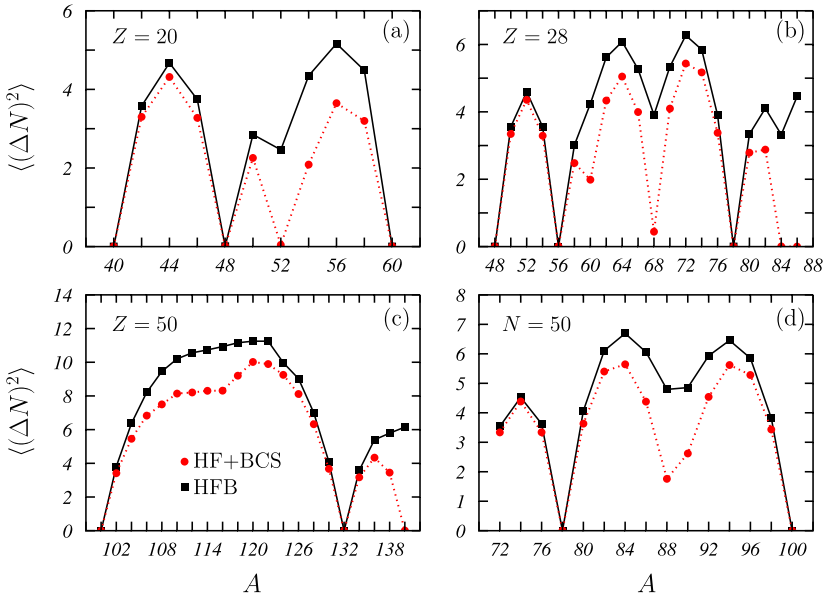

Figure 2. Values of $\langle(\Delta N)^2\rangle$ for calcium (a), nickel (b), and tin (c) isotopes and $N = 50$ isotones (d) obtained in HF+BCS (red circles) and HFB (black squares) calculations with the Gogny D1M interaction. In panels (a)–(c) only neutrons contribute and $\langle(\Delta N)^2\rangle \equiv \langle(\Delta N)^2\rangle_{\rm n}$. In panel (d) only protons contribute and $\langle(\Delta N)^2\rangle \equiv \langle(\Delta N)^2\rangle_{\rm p}$.

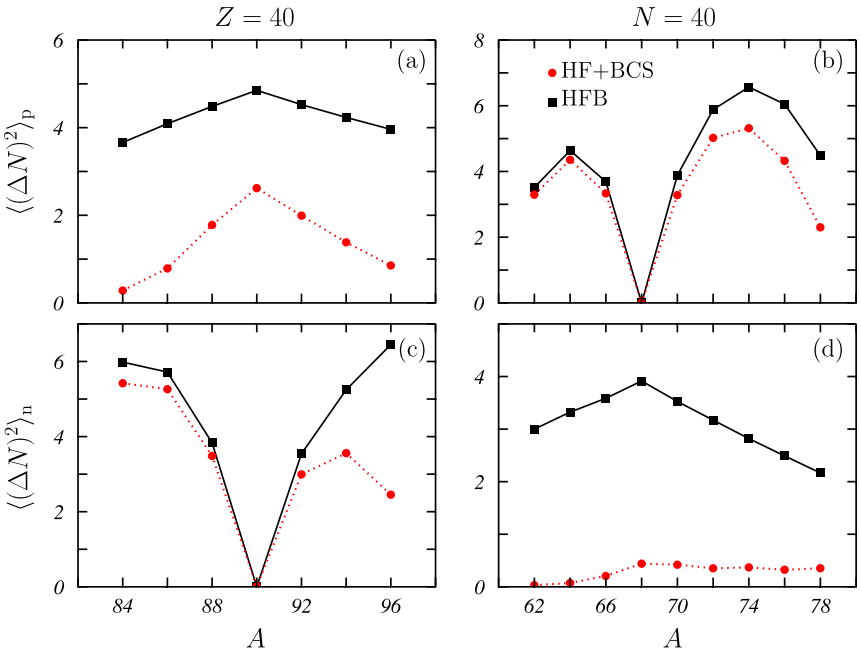

Figure 3. Values of $\langle(\Delta N)^2\rangle_{\rm p}$ (upper panels) and $\langle(\Delta N)^2\rangle_{\rm n}$ (lower panels) for $Z = 40$ isotopes (left panels) and $N = 40$ isotones (rigth panels). The meaning of the symbols is the same as in figure 2.

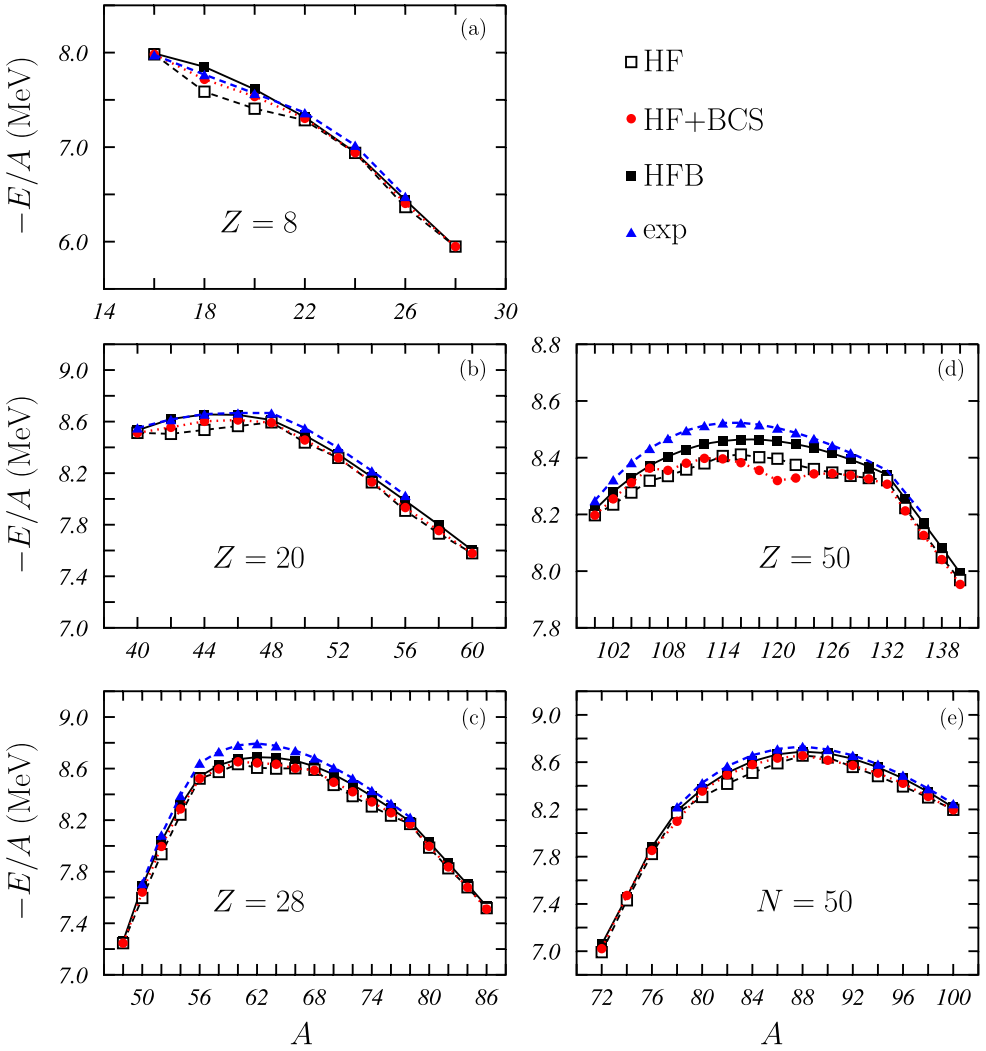

Figure 4. Binding energies per nucleon for oxygen (a), calcium (b), nickel (c), and tin (d) isotopes and $N = 50$ isotones (e) calculated with the Gogny D1M in HF+BCS (red circles), HFB (black squares) and HF (open squares) models. The blue triangles show the experimental values taken from [1]. The lines have been drawn to guide the eyes.

analogous figures of the paper. The agreement between Hartree–Fock–Bogoliubov and Hartree–Fock plus BCS results is even improved. The conclusions of the papers are confirmed and even strengthened. The other figures of the paper remain unchanged.

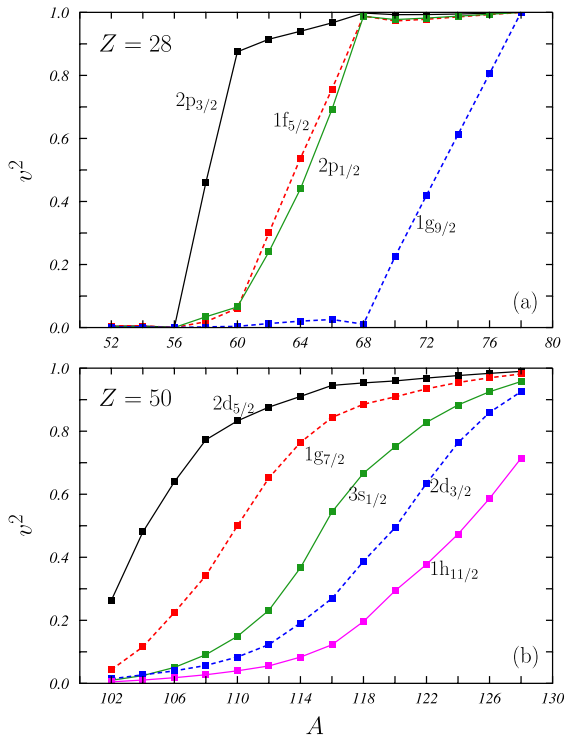

Figure 5. Occupation probabilities v^2 of different neutron s. p. levels for nickel (a) and tin (b) isotopes obtained in HF+BCS calculations with the D1M Gogny interaction.

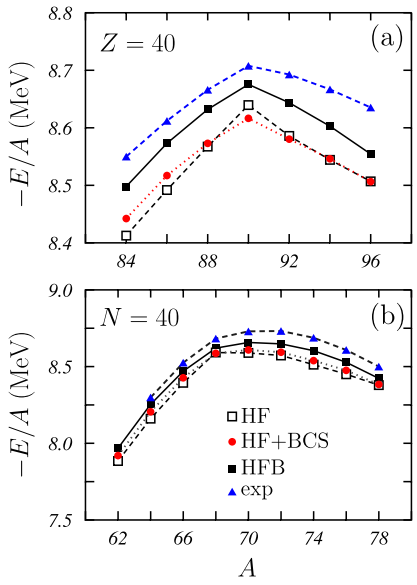

Figure 6. Binding energies for $Z = 40$ isotopes (a) and $N = 40$ isotones (b). The meaning of the symbols is the same as in figure 4.

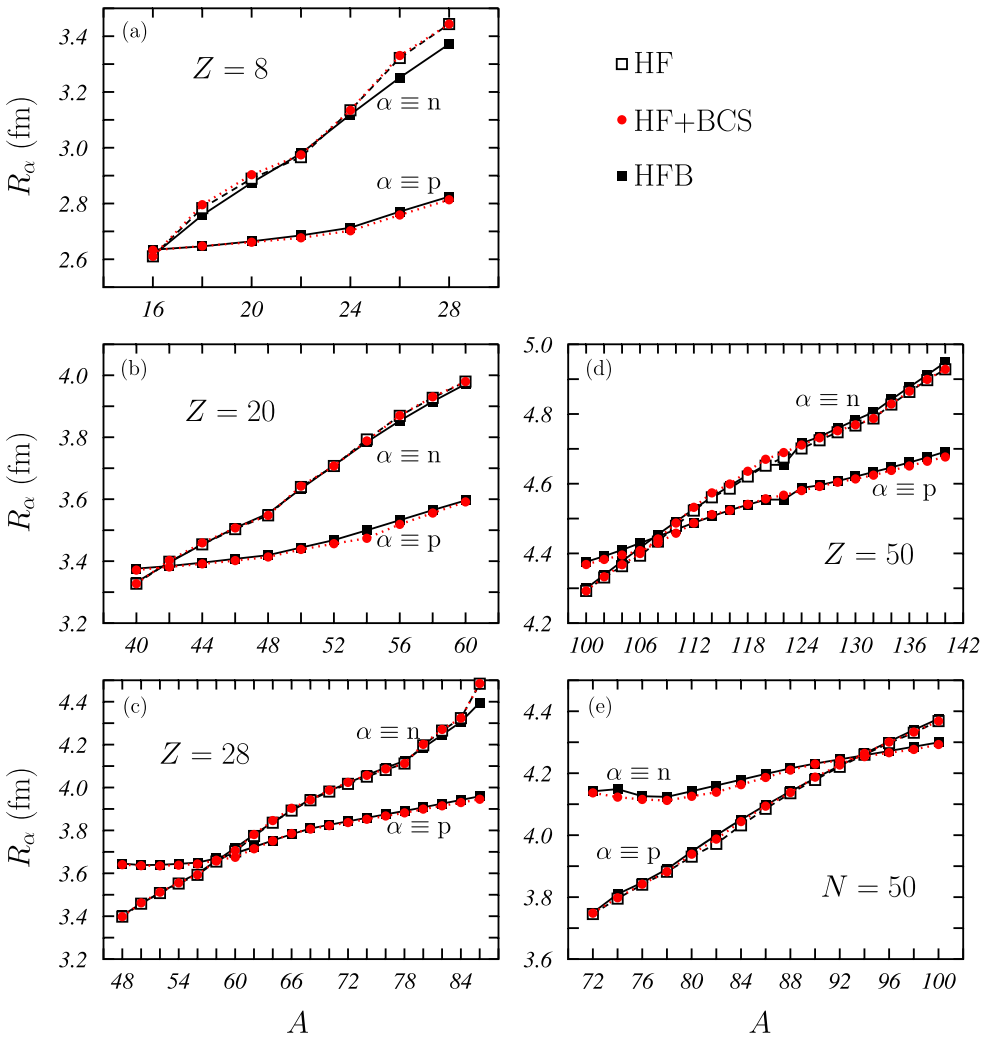

Figure 7. Proton, R_p, and neutron, R_n, rms radii for oxygen (a), calcium (b), nickel (c), and tin (d) isotopes and $N = 50$ isotones (e). The red circles indicate the HF+BCS results, the black and open squares those obtained in HFB and HF calculations, respectively. All the calculations have been carried out with the Gogny D1M interaction.

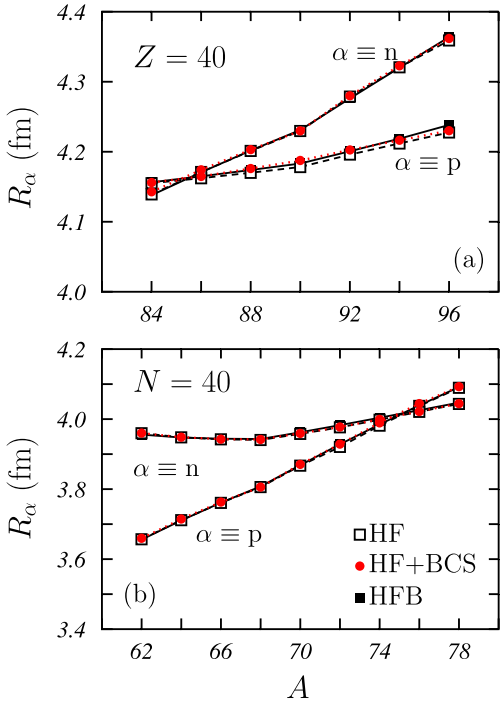

Figure 8. The same as in figure 7 for $Z = 40$ isotopes (a) and $N = 40$ isotones (b).

Reference

[1] Audi G, Wapstra A H and Thibault C 2003 *Nucl. Phys.* A **729** 337