

Erratum: “Depletion potential in the infinite dilution limit” [J. Chem. Phys. 128, 134507 (2008)]

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A wrong factor 2 affecting the simulation data plotted in Fig. 2 is corrected.

In Ref. 1, we studied the depletion force between two solute “big” hard spheres embedded in a solvent of “small” hard spheres by means of the rational-function approximation (RFA) method and the Percus–Yevick (PY) theory, and compared the theoretical predictions with simulation results from the available literature.

In particular, Fig. 2 of Ref. 1 considered the case of a solute-solute size ratio $\Sigma = 1$, a solute-solvent size ratio $R = 5$, and a solvent packing fraction $\eta = 0.116$, the simulation data being extracted from Fig. 6 (top) of Ref. 2. In doing so, we mistakenly multiplied the simulation data by a factor 2, what resulted in a bad agreement between theory and simulation in Fig. 2 of Ref. 1. Once this error is corrected, Fig. 2 of Ref. 1 should be replaced by Fig. 1 of this Erratum.

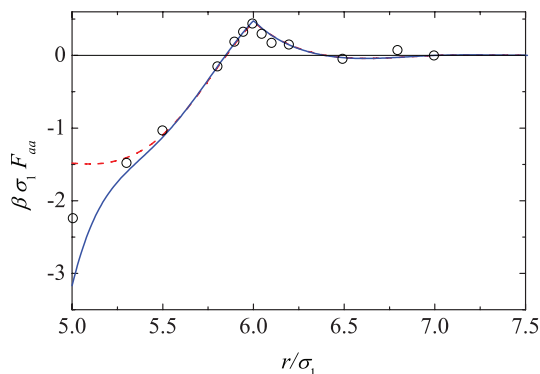


FIG. 1. Depletion force between two identical (big) hard spheres embedded into a solvent bath of (small) hard spheres as a function of distance. In this case, $\Sigma = 1$, $R = 5$, and $\eta = 0.116$. Solid line: RFA approach; dashed line: PY result; circles: simulation data from Ref. 2.

As an additional consequence, the comment

“If $R = 5$ (Figs. 2 and 3), the performance of the RFA with respect to the depletion force becomes poorer as illustrated in Fig. 2 for $\eta = 0.116$, but the theory is still able to capture even quantitatively all the features of the depletion potential for $\eta = 0.1$ and $\eta = 0.2$.”

is no longer applicable and should be replaced by

“If $R = 5$ (Figs. 2 and 3), we observe a good performance of the RFA for the depletion force at $\eta = 0.116$ (Fig. 2), except near contact. On the other hand, the theory is able to capture even quantitatively all the features of the depletion potential for $\eta = 0.1$ and $\eta = 0.2$ (Fig. 3).”

The rest of the discussion and the results of the paper remain unaltered.

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