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

Santos Bravo Yuste,[1,a)] Andrés Santos,[1,b)] and Mariano López de Haro[2,c)]
[1]*Departmento de Física, Universidad de Extremadura, E-06071 Badajoz, Spain*
[2]*Centro de Investigación en Energía, Universidad Nacional Autónoma de México (U.N.A.M.), Temixco, Morelos 62580, Mexico*

(Received 21 April 2014; accepted 21 April 2014; published online 6 May 2014)

[http://dx.doi.org/10.1063/1.4874639]

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.

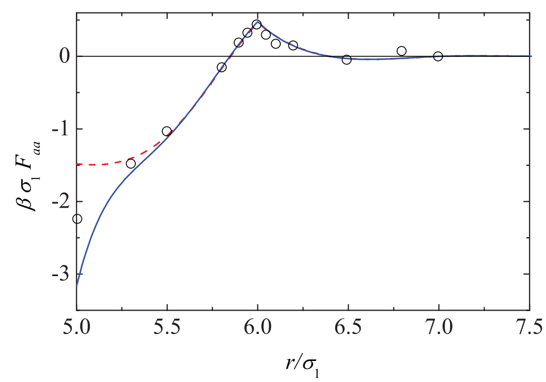


FIG. 1. Depletion force between two identical (big) hard spheres embedded into a solvent bath of (small) hard spheres as a function of distance. In this case, $\Sigma = 1$, $R = 5$, and $\eta = 0.116$. Solid line: RFA approach; dashed line: PY result; circles: simulation data from Ref. 2.

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is no longer applicable and should be replaced by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.

We are grateful to Riccardo Fantoni for pointing out the wrong factor to us. This work was supported by the Spanish Government through Grant No. FIS2010-16587 and by the Junta de Extremadura (Spain) through Grant No. GR10158, both partially financed by FEDER funds.

[1] S. B. Yuste, A. Santos, and M. López de Haro, J. Chem. Phys. **128**, 134507 (2008).
[2] R. Dickman, P. Attard, and V. Simonian, J. Chem. Phys. **107**, 205 (1997).

a) Electronic mail: santos@unex.es. URL: http://www.unex.es/eweb/fisteor/santos/.
b) Electronic mail: andres@unex.es. URL: http://www.unex.es/eweb/fisteor/andres/.
c) Electronic mail: malopez@unam.mx. URL: http://xml.cie.unam.mx/xml/tc/ft/mlh/.

 © 2014 AIP Publishing LLC