

**Erratum: Counterion penetration and effective electrostatic interactions
in solutions of polyelectrolyte stars and microgels
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Errors in three equations of the paper have been brought to my attention. Equation (26) for the microion-induced part of the effective pair interaction between polyelectrolyte star macroions lacks a factor of $1/(2\pi)^3$ and should read

$$v_{\text{ind}}(r) = -\frac{2Z^2 e^2 \kappa^2 a^2}{\pi \epsilon r} \int_0^\infty dx \frac{\sin(xr/a)}{x^3(x^2 + \kappa^2 a^2)} \text{sinc}^2 x. \quad (26)$$

Equation (30) for the volume energy of polyelectrolyte star solutions similarly lacks a factor of $1/(2\pi)^3$ in the second term on the right, and also lacks a background subtraction term. The corrected equation is

$$E_0 = F_{\text{OCP}} - N_m \frac{Z^2 e^2 \kappa^2 a}{\pi \epsilon} \int_0^\infty dx \frac{\text{sinc}^2 x}{x^2(x^2 + \kappa^2 a^2)} - (N_+ - N_-) \frac{k_B T}{2}. \quad (30)$$

Equation (42) for the volume energy of polyelectrolyte microgel solutions contains an erroneous factor of $\kappa^2 a^2$ in the last term on the right side. The corrected equation is

$$E_0 = F_{\text{OCP}} - N_m \frac{3Z^2 e^2}{\epsilon a} \left\{ \frac{1}{5} - \frac{1}{2\kappa^2 a^2} + \frac{3}{4\kappa^3 a^3} \left[1 - \frac{1}{\kappa^2 a^2} + \left(1 + \frac{2}{\kappa a} + \frac{1}{\kappa^2 a^2} \right) e^{-2\kappa a} \right] \right\} - (N_+ - N_-) \frac{k_B T}{2}. \quad (42)$$

These corrections do not affect any figures or conclusions of the paper, but are important for applications of the theory to thermodynamic phase behavior of polyelectrolyte star and microgel solutions [1].

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[1] D. Gottwald, C. N. Likos, G. Kahl, and H. Löwen (unpublished).