Erratum: Correlations in suspensions confined between viscoelastic surfaces: Noncontact microrheology [Phys. Rev. E **96**, 022607 (2017)]

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We have discovered a numerical error in this paper, which affects several equations. Below we give the equations replacing the ones in the original paper. For convenience, we use the same equation numbers.

The error lies in Eq. (6), which should include a factor of $1/2$,

$$\mathbf{P} = -\frac{1}{2}\Gamma(i\omega\mathbf{u} - \mathbf{v}). \quad (6)$$

The reason is that the total friction force acting between the confined liquid and the solid slabs is divided equally between the two (identical) slabs. The effect of the extra factor on subsequent equations can easily be handled by formally replacing the solid's shear modulus G by twice that value $2G$. The corrected equations are

$$\mathcal{G}_{ij}^f(\mathbf{q}, \omega) = \frac{Gq + i\Gamma\omega/2}{q[G\eta hq^2 + \Gamma(G + i\eta\omega hq/2)]} \left(\delta_{ij} - \frac{q_i q_j}{q^2} \right), \quad (7)$$

$$\mathcal{G}_{ij}^f(\mathbf{r}, \omega) = -\frac{1}{2\pi\Gamma r^2} \left(1 + \frac{\Gamma\eta h\omega^2}{4G^2} \right) \left(\delta_{ij} - 2\frac{r_i r_j}{r^2} \right) + \frac{i\omega}{4\pi G r} \frac{r_i r_j}{r^2}, \quad (8)$$

$$D_{\parallel}(r, \omega) = -\frac{2}{\omega^2} C_{xx}(r\hat{\mathbf{x}}, \omega) = -\frac{k_B T \alpha h}{\pi \eta \omega^2} \left(1 + \frac{\eta^2 \omega^2}{4\alpha G^2} \right) \frac{1}{r^2} + \frac{k_B T}{2\pi i \omega G} \frac{1}{r}, \quad (10)$$

$$D_{\perp}(r, \omega) = -\frac{2}{\omega^2} C_{xx}(r\hat{\mathbf{y}}, \omega) = \frac{k_B T \alpha h}{\pi \eta \omega^2} \left(1 + \frac{\eta^2 \omega^2}{4\alpha G^2} \right) \frac{1}{r^2}, \quad (11)$$

$$\bar{D}(r, \omega) \equiv D_{\parallel}(r, \omega) + D_{\perp}(r, \omega) = \frac{k_B T}{2\pi i \omega G} \frac{1}{r}. \quad (12)$$

As noted in the original paper, in the limits $G \rightarrow \infty$ (infinitely rigid slabs) or $\omega = 0$ (steady state), we recover the known results for a rigid slit. After introducing the correction above, the theory properly reproduces another known limit, not mentioned in the original paper—a membrane embedded in a viscoelastic solvent [1]. In the limit $\Gamma \rightarrow \infty$ (infinite friction, forcing the confining surfaces to move together with the confined fluid), Eq. (7) becomes $\mathcal{G}_{ij}^f(\mathbf{q}) = (\eta_m q^2 + 2\eta_s q)^{-1} (\delta_{ij} - \hat{q}_i \hat{q}_j)$, where $\eta_m = \eta h$ is the two-dimensional viscosity of the confined liquid sheet (membrane) and $\eta_s = G/(i\omega)$ is the shear viscosity of the surrounding viscoelastic medium. This result coincides with Eq. (7) of Ref. [1] for zero inertia.

An additional insight arises naturally from the splitting of the friction force between the two slabs (as well as the analogy with the fluid membrane)—the same results would apply to slabs of different moduli G_1 and G_2 once G is replaced by $(G_1 + G_2)/2$.

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[1] S. Komura, S. Ramachandran, and K. Seki, *Europhys. Lett.* **97**, 68007 (2012).