Erratum: Capillary wave dynamics on supported viscoelastic films: Single and double layers [Phys. Rev. E. 75, 021604 (2007)]

Mark L. Henle and Alex J. Levine

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In this paper, the boundary condition Eq. (33), which allows for slip between two fluids in a double layer, is incorrect. The correct boundary condition is a Navier-like slip boundary condition [1],

$$[\, v_{2,x} - v_{1,x}|_{z=d_2} \;=\; -\alpha \sigma^f_{xz}|_{z=d_2}. \tag{1}$$

Here, α is the slip parameter; note that it is not a length, but rather has units of length/viscosity. σ_{xz} is the shear stress at the fluid/fluid interface; from the boundary condition Eq. (37), we can see that the shear stresses in the two fluids are equal at the interface.

The correction to the boundary condition Eq. (33) leads to minor corrections in Eqs. (42)–(45) and (51), and the caption of Fig. 5. These formulas can be corrected by setting the slip length λ defined in Sec. IV to be

$$\lambda = \alpha \frac{\eta_1 \eta_2}{\eta_1 - \eta_2}. \tag{2}$$

This redefinition applies only to the slip length defined for the double layer system in Sec. IV. The slip length defined for the single layer system in Sec. III [see Eq. (9)], which accounts for a slip layer between the fluid and substrate, is correct in the original paper.

Finally, there are minor corrections to the asymptotic results discussed in Sec. IV A. The "low-slip" condition for Eqs. (54) and (55) is now $\alpha \eta_2 / d_2 \ll 1$; Eqs. (54) and (55) themselves remain unchanged. The large slip condition for Eq. (56) is now $\alpha \eta_2 / d_2 \gg 1$, and Eq. (56) should be replaced by

$$\tilde{\omega}^+(q) = \begin{cases} \gamma_2 q^4 d_2^2 \alpha & qd \ll 1,\ \alpha \eta_2 q^2 d \ll 1 \\ \dfrac{\gamma_2 q^2 d_2}{4\eta_2} & qd \ll 1,\ \alpha \eta_2 q^2 d \gg 1 \\ \dfrac{\gamma_2 |q|}{2\eta_2} & qd \gg 1. \end{cases} \tag{3}$$

None of these errors affect the conclusions of our paper. In particular, the case of a viscoelastic layer buried beneath a viscous layer discussed in Sec. IV B is not affected, since we did not consider the possibility of fluid-fluid slip in this case.

[1] R. Zhao and C. W. Macosko, J. Rheol. **46**, 145 (2002).

