

CORRIGENDUM

Continuum dynamics of suspensions at low Reynolds number – CORRIGENDUM

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We thank an anonymous reviewer for pointing out that (5.4) was not frame invariant. This error was due to an algebraic mistake and a mislabeling of the second and third indices of the Levi-Civita tensor in (3.3). Equation (3.3) should have been

$$4\hat{F}_{ij}^1 - \hat{F}_{ji}^1 = -20\pi\eta_0 a^3 \left(\frac{\partial v_{-m,i}}{\partial x_j} - \epsilon_{ikj}\omega_{p,k} \right), \quad (0.1)$$

and the correct version of (5.4) is

$$\epsilon_{ikj}\omega_{p,k} = \frac{1}{2} \left(\frac{\partial \langle v \rangle_{-m,i}}{\partial x_j} - \frac{\partial \langle v \rangle_{-m,j}}{\partial x_i} \right), \quad (0.2)$$

which includes a factor of one-half and gives that the average local rotational rate of the particles is equal to the suspension-averaged rotational rate.

We also found that while (3.7) does lead to the correct divergence of the stress tensor, in the stress tensor itself $\hat{\mathbf{F}}^2$ should be symmetric on exchange of the second and third indices:

$$\begin{aligned} \hat{F}_{ijk}^2 = & -\frac{\pi\eta_0 a^5}{6} \left(5 \frac{\partial^2 v_{-m,i}}{\partial x_j \partial x_k} + \frac{\partial^2 v_{-m,j}}{\partial x_i \partial x_k} + \frac{\partial^2 v_{-m,k}}{\partial x_i \partial x_j} \right) \\ & + \frac{\pi\eta_0 a^5}{6} (\nabla^2 v_{-m,i} \delta_{jk} + 3\nabla^2 v_{-m,j} \delta_{ik} + 3\nabla^2 v_{-m,k} \delta_{ij}). \end{aligned} \quad (0.3)$$

Finally, there was a typographical error in the coefficients that we reported for the normal stress differences. The last sentence of § 7 should have read, ‘Fitting the high- Pe results to a cubic polynomial, we estimate that $\sigma_{xx} - \sigma_{zz} \approx -\eta_0 \dot{\gamma} (0.066\phi^2 + 0.35\phi^3)$ and $\sigma_{xx} - \sigma_{yy} \approx -\eta_0 \dot{\gamma} (0.37\phi^2 + 1.9\phi^3)$ at large Pe .’

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REFERENCE

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