



Correction

Correction to: Gyrotactic cluster formation of bottom-heavy squirmers

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Equation (9) should read the balance between the angular velocities from the external bottom-heavy torque (Eq. (5)) and from the Stokeslet vorticity (Eq. (6)). However, a factor of $\frac{3}{4}$ was erroneously omitted. The corrected equation reads

$$\frac{3}{4} \frac{v_0}{R} \frac{r_0}{R\alpha} \sin \vartheta = \frac{3}{4} \frac{v_0}{\alpha} \frac{R}{r^2}. \quad (9)$$

Consequently, the two subsequent equations, where $r = 2R$, should read

$$\sin \vartheta = \frac{1/(4\alpha)}{r_0/(R\alpha)}. \quad (10)$$

and

$$r_0/(R\alpha) \geq (4\alpha)^{-1}. \quad (11)$$

The corrected balance of angular velocities requires Fig. 5 to be updated. We have plotted black dotted vertical lines for the corrected value of the equality condition from Eq. (11) and show the incorrect line from the original manuscript in red.

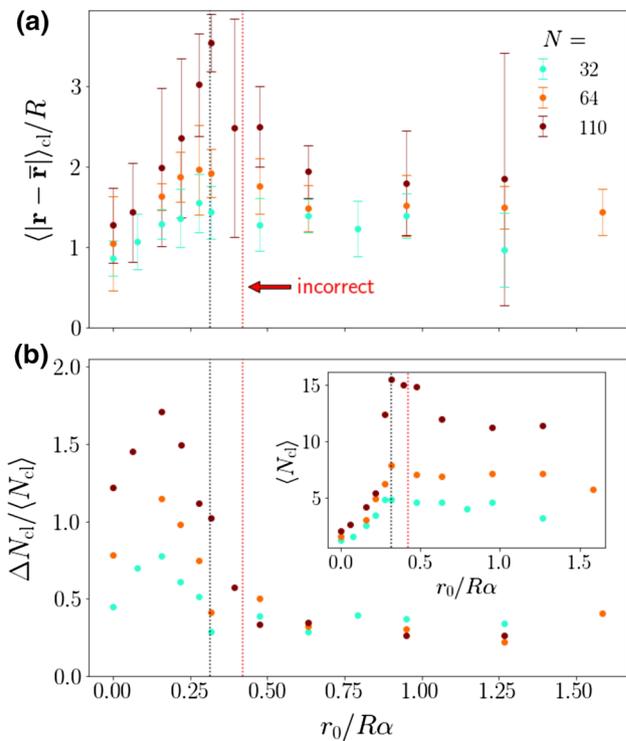


Fig. 5 **a** Mean cluster radius $\langle |\mathbf{r} - \bar{\mathbf{r}} | \rangle_{cl}$ in units of R plotted versus torque value $r_0/R\alpha$ for different squirmer numbers N . **b** Normalized standard deviation $\Delta N_{cl}/\langle N_{cl} \rangle$ and inset: mean number of squirmers in a cluster $\langle N_{cl} \rangle$. The dotted vertical lines show the equality condition of Eq. (11) for $\alpha = 0.8$. The red dotted line shows the erroneous condition

Conclusion

The angular velocity balance between Stokeslet vorticity and bottom-heaviness results in a lower bound for the rescaled torque $r_0/(R\alpha)$ that is lower than originally presented by a factor of $\frac{3}{4}$. The conclusions of the original paper are unaffected.

The original article can be found online at <https://doi.org/10.1140/epje/s10189-022-00183-5>.

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