

## Corrigendum

# Corrigendum: A simple collision model for small bubbles (2017 *J. Phys.: Condens. Matter* **29** 124005)

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The published paper contains three scribal errors in equations. These do not affect the results, findings and conclusions, since the correct equations had been used to conduct the simulations. However, one of them is located in the final equation (17) which is suggested for further usage and, therefore, is important to be brought to the readers' attention.

## 1. Equation for the viscous force

Equation (17) and (B.14) in [1] are wrong. They should be identical with the correct equation reading

$$F_{\text{viscous}} = u_c C_{bc} \frac{12\mu_f}{2\pi} \left( 0.34 \left[ \frac{\Delta}{R_{\text{eq}}} + 0.0002 \right]^{-1/2} \right)^2 \times \left( 4.0 \sqrt{\frac{R_{\text{eq}}^3}{h_0}} + 3.0 R_a \frac{R_{\text{eq}}}{h_0} \right). \quad (\text{C1})$$

This relation was used to generate the results presented in the publication. The bracket term  $\left( 0.34 \left[ \frac{\Delta}{R_{\text{eq}}} + 0.0002 \right]^{-1/2} \right)$  results from an approximation of the quantity  $\frac{dR_a}{d\Delta}$  in the equation

$$F_{\text{viscous}} = u_c C_{bc} \frac{12\mu_f}{2\pi} \left( \frac{dR_a}{d\Delta} \right)^2 \left( 4.0 \sqrt{\frac{R_{\text{eq}}^3}{h_0}} + 3.0 R_a \frac{R_{\text{eq}}}{h_0} \right) \quad (\text{C2})$$

obtained from combining (B.5), (B.12), and (B.13).

## 2. Appendix B

Equations (B.3) and (B.4) in [1] are wrong. Starting from equation (10)

$$\frac{\Delta}{R_{\text{eq}}} = 2.36 \left( \frac{R_a}{R_{\text{eq}}} \right)^2 + 0.04 \frac{R_a}{R_{\text{eq}}}, \quad (\text{C3})$$

and solving the quadratic equation yields

$$\frac{R_a}{R_{\text{eq}}} = \frac{-0.04}{4.72} + \sqrt{\left( \frac{0.04}{4.72} \right)^2 + \frac{1}{2.36} \frac{\Delta}{R_{\text{eq}}}}, \quad (\text{C4})$$

which should appear in the place of (B.3).

Taking the derivative of equation (10) and using (C4) gives

$$\frac{dR_a}{d\Delta} \approx \left( 0.34 \left[ \frac{\Delta}{R_{\text{eq}}} + 0.0002 \right]^{-1/2} \right). \quad (\text{C5})$$

This is the correct version of (B.4) which misses the minus sign in the exponent. Equation (C5) is used in (C2) to yield (C1).

### 3. Appendix A

Equation (A.1) formulating the Young–Laplace law is missing a factor of 2 in the rightmost term. It should read correctly

$$p_b - p_{\text{out}} = \sigma \left( \frac{1}{R_\alpha} + \frac{1}{R_\beta} \right) = 2\sigma H_m \quad (\text{C6})$$

with the mean curvature  $H_m = (1/R_\alpha + 1/R_\beta)/2$ . Again, the code used for the simulations contained the correct equation and the results are not affected by this typing error.

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