Erratum to: On the Correlation Properties of Thermal Noise in Fluids

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Equation 11 in the original article [1] should read

$$\phi(t) = \frac{k_B T}{M} \frac{1}{\lambda_1 - \lambda_2} \left[\lambda_1 \exp(\lambda_1^2 t) \operatorname{erfc}(-\lambda_1 \sqrt{t}) - \lambda_2 \exp(\lambda_2^2 t) \operatorname{erfc}(-\lambda_2 \sqrt{t}) \right]. \quad (11)$$

In the published paper the two terms in the square brackets are $\lambda_1 \exp(\lambda_1^2 t) \operatorname{erfc}(-\lambda_2 \sqrt{t}) - \lambda_2 \exp(\lambda_1^2 t) \operatorname{erfc}(-\lambda_1 \sqrt{t})$. As pointed out by J. M. Ortiz de Zárate (personal communication), in this case Eq. 11 (which correctly describes the hydrodynamic Brownian motion) is exactly the same as Eq. 6 (possessing an incorrect solution for the velocity autocorrelation function (VAF)). This is seen if the coefficients C_i in Eq. 6 are expressed in the form $C_1 = -\lambda_2/(\lambda_1 - \lambda_2)$ and $C_2 = \lambda_1/(\lambda_1 - \lambda_2)$ (Ortiz de Zárate, personal communication).

The formulas following Eq. 11 use the above given equation and are correct. They agree with the previously obtained expressions for the VAF (see [2] and references therein).

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References

1. V. Lisý, J. Tóthová, L. Glod, Int. J. Thermophys. **34**, 629 (2013)
2. J. Tóthová, G. Vasziová, L. Glod, V. Lisý, Eur. J. Phys. **32**, 645 (2011)