

Errata: Dynamics of Brownian particles in a turbulent channel flow

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There are two typos in the equations of the published version[1].

- Equation (13) should read

$$\begin{aligned}\sigma_S^2 &= \frac{1}{\tau_p} \int_0^{\Delta t} \langle u_2^f(0) u_2^f(t') \rangle \exp\left(-\frac{t'}{\tau_p}\right) dt' \\ &\quad - \frac{1}{\tau_p} \exp\left(-\frac{2\Delta t}{\tau_p}\right) \int_0^{\Delta t} \langle u_2^f(0) u_2^f(t') \rangle \exp\left(\frac{t'}{\tau_p}\right) dt' .\end{aligned}$$

The sign between the first and second terms is “minus.”

- Equation (15) should read

$$\frac{\sigma_S^2}{(u^M)^2} = \frac{1}{1+\beta} \left[1 - e^{-\alpha(1+\beta)}\right] + \frac{1}{1-\beta} e^{-2\alpha} \left[1 - e^{\alpha(1-\beta)}\right] . \quad (1)$$

The sign between the first and second terms is “plus.”

References

- [1] Fukagata, K., Zahrai, S., Bark, F. H.: Dynamics of Brownian particles in a turbulent channel flow. *Heat and Mass Transfer* 40 (2004) 715-726.