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In this paper\(^1\) we addressed the problem of computing the viscosity of a highly confined fluid by means of a hydrodynamic constitutive equation that assumes a homogeneous nonlocal viscosity kernel. To simplify the extraction of the kernel we took discrete Fourier transforms (DFTs) of our strain rate and shear stress simulation data and computed the nonlocal viscosity kernel. To simplify the extraction of the dynamic constitutive equation that assumes a homogeneous fluid and not as an absolute position in the pore. There-

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fore we should not have plotted the nonlocal viscosity on the same plot as the local and Navier–Stokes viscosities, which are quantities that can be represented on an absolute position scale. Comparisons made between the\(^\ast\) dependence of the nonlocal viscosity kernel and the local and Navier–Stokes viscosities were therefore incorrect.

\(\ast\) An example of how the nonlocal viscosity kernel should be presented is shown in Fig. 1 of this Erratum, which shows the kernel for the fluid of density \(\rho=0.442\) confined to a pore of width \(L=5.1\). By using the periodicity inherent in the DFT, Fig. 1 of this Erratum can be mapped onto Fig. 1 of this Erratum by

\[
\eta(y') = \eta_N(y + L/2); \quad -L/2 \leq y \leq 0, \\
\eta(y') = \eta_N(y - L/2); \quad 0 \leq y \leq L/2,
\]

where \(y\) and \(\eta_N(y)\) refer to the coordinate and kernel in Fig. 7(a) of the paper, respectively, and \(y'\) and \(\eta(y')\).

\FIG{1}{Nonlocal viscosity kernel as a function of relative position \(y\). \(\rho = 0.442, L = 5.1\). Unlike \(\eta_N(y)\) in the original paper [see Fig. 7(a)], no vertical shifting of the kernel is performed relative to the origin.}{fig1}{fig1.png}
respectively, refer to the coordinate and kernel in Fig. 1 of this Erratum.

• As the viscosity kernel is a homogeneous function of relative separation, this precludes the current model from predicting meaningful flow profiles for arbitrary flows. As it currently stands, the current model could only predict a linear flow velocity profile for Couette flow and so Fig. 9 is incorrect. In order to succeed in this goal a fully inhomogeneous kernel needs to be modeled, i.e., $\gamma(r, r')$.

A detailed analysis of the current model and its limitations is currently being prepared for publication.