This file serves as a supplementary material for paper: Linear versus Branched: Flow of a Wormlike Micellar Fluid Past a Falling Sphere

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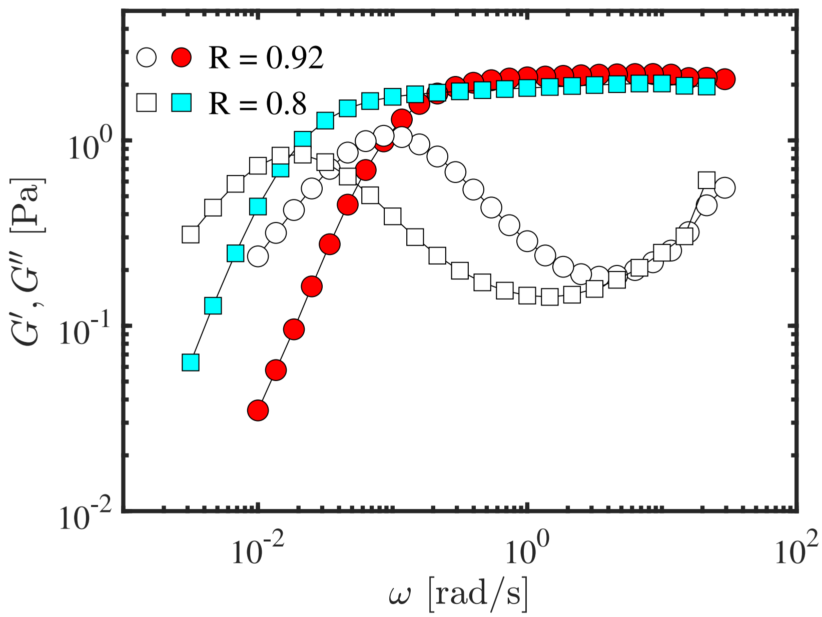

FIG. 1. Elastic modulus (filled symbols) and loss modulus (empty symbols) versus angular frequency the linear and branched micellar solutions of CPyCl/NaSal.

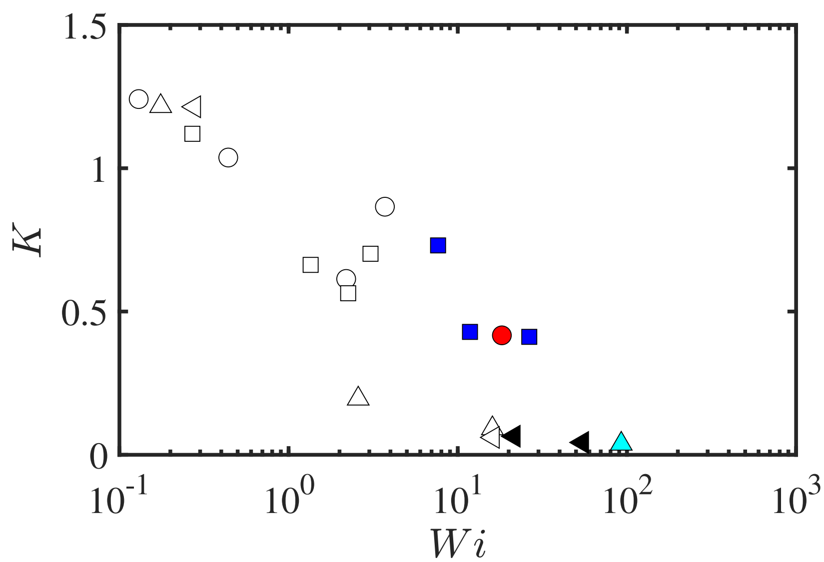

FIG. 2. Drag coefficient K as a function of Weissenberg number, Wi for linear and branched micellar solutions. Empty and filled symbols denote the steady and unsteady sphere sedimentation behavior. Each symbol corresponds to a fixed sphere to tube size ratio as follows: $a/\Re = 0.056$ (upper triangles), $a/\Re = 0.037$ (left triangles) for linear wormlike micelles and $a/\Re = 0.056$ (squares), $a/\Re = 0.037$ (circles) for branched wormlike micelles.

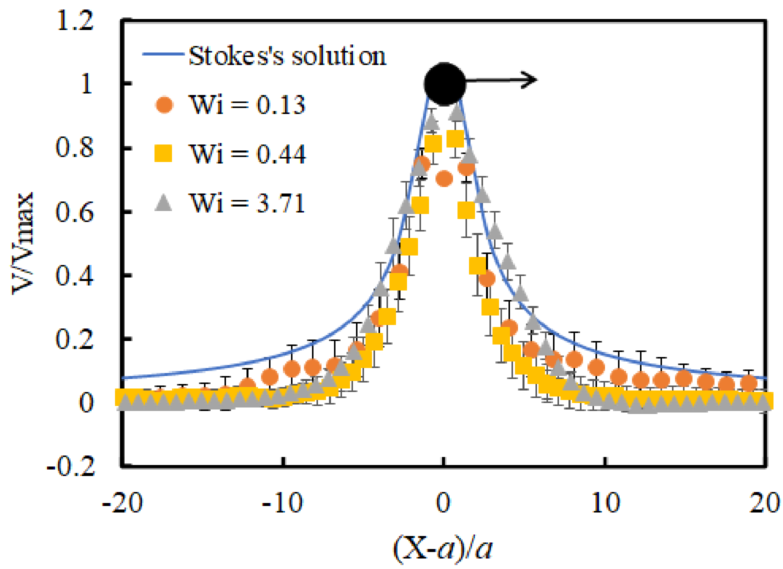

FIG. 3. Normalized fluid velocity as a function of distance along the axis of sphere center of mass for branched wormlike micellar solutions and the sphere to tube size ratio $a/\Re = 0.056$.

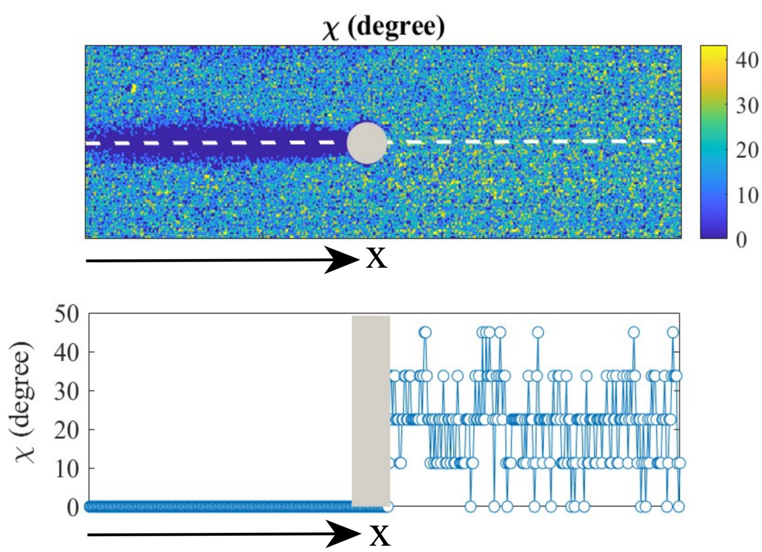

FIG. 4. Averaged extinction angle $\bar{\chi}$ (false color) around the falling sphere (top panel) and the calculated extinction angle along the dashed line (bottom panel) in the branched micellar solution. Experimental conditions are as $Wi = 5$ and $Re = 5.4 \times 10^{-4}$ and the sphere to fluid column size ratio is $a/\Re = 0.028$. Note that the discrete nature of the extinction angle data upstream of the sphere center of mass (in the bottom panel) is related to the spatial resolution of our images.