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Anisotropy of Sheared Carbon Nanotube Suspensions DAN FRY, NIST, HOWARD WANG, Michigan Tech, ERIK K. HOBBIE, NIST — We measure the anisotropy of sheared carbon nanotube suspensions for a broad range of concentration, aspect ratio and strain rate using a variety of methods. Our measurements highlight the importance of hydrodynamic excluded-volume interactions in the semi-dilute regime, with scaling in terms of a dimensionless shear rate, or Peclet number. Our results also suggest that such interactions might be exploited to fractionate carbon nanotubes by length in simple shear flow.

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