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Inhomogeneous structure and position-dependent dynamics in complex fluids JAMES CARMER, Department of Chemical Engineering, University of Texas at Austin, GAURAV GOEL, Department of Chemical Engineering, Indian Institute of Technology, Delhi , JEFFREY ERRINGTON, Department of Chemical and Biological Engineering, University at Buffalo, THOMAS TRUSKETT, Department of Chemical Engineering, University of Texas at Austin — We present computer simulation results of model complex fluids, quantifying how inhomogeneous structuring and dynamics of particles can be tuned through interactions. We first illustrate how a tracer particle's interactions can be tuned to significantly modify its long-time diffusivity. We use a recently proposed propagator-based formalism to address how this enhancement can be understood in terms of the local dynamics of neighboring particles. We then discuss how these results compare to related behaviors of model confined colloidal and molecular fluids.

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