

Abstract Submitted  
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**Interfacial microrheology in viscoelastic membranes** GOPAL SUBEDI, KENNETH W. DESMOND, ERIC R. WEEKS, Emory University — Prior studies on interfaces using microrheology have typically been applied to interfaces with only a surface viscosity component and not an elastic one. We are extending the application of interfacial microrheology to viscoelastic lipid monolayers. We use a DPPC and cholesterol lipid monolayer in a Langmuir trough as a model system. The Langmuir trough gives us the flexibility to control the concentration and thus the phase of the monolayer. The microrheology technique allows us to measure the rheology at specific concentrations or in situations as the concentration is changed. The microrheology technique employs video microscopy to record the diffusive motion of micron size spheres placed at the interface. Since the diffusive motion of the microspheres is dominated by the interfacial rheology of the monolayer, the recorded motions of the microspheres are used to infer the rheological properties of the interface. We hope to extend our understanding of viscoelastic interfaces with the study.

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