Abstract Submitted
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Viscoelastic response near the jamming transition[1] BRIAN TIGHE, Lorentz Institute, Leiden University — We use numerical and theoretical methods to investigate oscillatory rheology in soft sphere packings, which serve as a minimal model for foams, emulsions, and other complex fluids that undergo a jamming transition. Although the zero frequency (elastic) properties of jammed media are well documented, far less is known about their viscoelastic response. We demonstrate that the frequency-dependent storage and loss moduli display critical scaling with distance to the jamming point. This behavior is governed by a diverging time scale that separates quasistatic response from a critical regime in which viscous and elastic forces contribute equally to the stress. We provide scaling arguments for all of the relevant critical exponents.

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