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Rheology of particle assemblies close to a jamming transition CLAUS HEUSSINGER, University of Goettingen, Germany — The jamming paradigm aims at providing a unified view for the elastic and rheological properties of materials as different as foams, emulsions, suspensions or granular media. Structurally, these systems can all be viewed as dense assemblies of particles, and the particle volume fraction ϕ plays the role of the coupling constant that tunes the distance to the jamming transition. Enhanced experimental techniques allow to visualize the dynamics of these systems on the level of the individual particles, generating huge amount of information. Several interesting, and partially conflicting, results have emerged. It therefore seems necessary to ask in how far the experimental results reveal genuine aspects of a universal jamming transition, or justsystem-specific properties that depend on microscopic details, the driving mechanism or the preparation protocol. By comparing different computational models we will discuss the question of universality on the macroscopic level of rheological observables as well as on the microscopic level of single particle trajectories and collective particle motion.

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