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**Jamming in systems with attraction**[1]

GREGG LOIS, Yale University

Many materials jam. As density increases or temperature decreases, structural relaxation becomes sluggish and the system approaches mechanical equilibrium without spatial ordering. The concept of a universal jamming transition and the conjecture that the mechanical response at zero temperature is linked to slow dynamics at non-zero temperature has inspired research in a variety of glassy materials such as colloidal suspensions, emulsions, granular media and foams. While most recent theoretical and simulation studies of the jamming transition have focused on systems with purely repulsive interactions, many materials also possess attractive forces. I will present our recent numerical results on the jamming transition in particulate systems with attractive interactions. At zero temperature, instead of the single discontinuous jamming transition observed in purely repulsive systems, attractive systems exhibit two second-order transitions—connectivity and rigidity percolation—which belong to different universality classes than their lattice counterparts. This observation also holds for low temperature before diffusion and activation/bond-breaking become relevant. At higher temperatures, the universality class of the jamming transition can depend on the age of the system. Finally, I will discuss a proposed phase diagram for gelation and rigidification in the temperature- density plane.

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