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Glass transition and jamming in soft microgel suspensions: Relationship between alpha relaxation times and elastic energy scales JOHN HYATT, Georgia Inst of Tech, XIAOBO HU, University of North Carolina, L. ANDREW LYON, Chapman University, ALBERTO FERNANDEZ-NIEVES, Georgia Inst of Tech — Glassy and jammed states of soft colloidal matter combine several open questions – how are glassy and jammed states differentiated from one another and from equilibrium states of dense suspensions, and how should particle "softness" be quantified? We combine light scattering and rheological measurements of well-characterized soft microgel particles at various packing fractions and degrees of swelling to answer these questions. We identify several regimes of liquid, supercooled, glassy, and jammed behavior that correlate with an increasing elastic energy scale due to interparticle interactions. When this energy scale increases above k_BT, the entropically-driven glassy state gives way to a jammed state dominated by elastic interactions.

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