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Structure/dynamics coupling in suspensions of microgel particles on their approach to the glass A. FERNANDEZ-NIEVES, J. CLARA-RAHOLA, Georgia Tech, P.N. SEGRE, Oxford College, A.B. SOUTH, L.A. LYON, Georgia Tech — We measure the structure factor, S(q), and the q-dependent diffusion coefficient, D(q), of dense suspensions of pNIPAm microgel particles. We do this at different temperatures, and hence different swelling degrees, at constant generalized volume fraction, and find dramatic changes in behavior. While for certain temperatures, 1/D(q) follows the behavior of S(q), at other temperatures the behavior of these two quantities completely decouples. Interestingly, this behavior correlates with fragility: Structure/dynamics decoupling is observed for suspensions resembling strong glass formation.

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