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Dynamics in depletion gels studied with X-ray photon correlation spectroscopy ANDREI FLUERASU, ABDELLATIF MOUSSAID, European Synchrotron Radiation Facility — The slow, non-equilibrium, dynamics in low-concentration (particle volume fraction $\Phi \approx 20\%$) depletion gels consisting of colloid-polymer mixtures was studied using X-ray photon correlation spectroscopy. In some recent work (A. Fluerasu et al. PRE 76, 010401(R), 2007) we have shown that towards full aging, the intermediate scattering functions are well described by compressed exponential decays, indicating a form of “jamming” in the system which occurs even on length scales smaller than the particle radius. Here we extend these results by probing samples with different interaction potentials (tuned by the polymer concentration) and by characterizing the dynamical heterogeneities in these soft gels. We will also show first results on the formation of the gels in shear flow that were obtained using a combination of X-ray, direct observation, and co-flow mixing techniques.

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