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Fluids with short-range attractions and longer-range repulsions[1]

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Many complex fluids comprise particles with effective interactions that include short-range attractions and longer-range repulsions. In this talk, I explore—using a simple theoretical model—what behaviors one should expect to find in such systems, including the possibility of equilibrium "cluster" formation and its associated implications for dynamics near structural arrest. I also discuss how one might predict the onset of cluster formation from the static structure factor. Finally, some implications for concentrated liquid formulations of therapeutic proteins are addressed.

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