

Colloquium

Effects of activity on the glassy properties of an active system

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Active dense systems (“active glasses”) are of great current interest as they appear in different biological contexts. Most of such systems are modeled as a collection of self-propelled particles with a certain persistence time for the motion of the constituent particles. Recent simulations show that self-propulsion inhibits glassiness, however, there are confusing results regarding the role of persistence time on the glassy behaviour. In this talk I will present two different theories, namely the Random First Order Transition theory and the Mode-Coupling Theory, extended for active systems, that generalize and unify simulation and experimental results on such systems resolving the seeming contradictions of simulations regarding the role of activity and its effect on the properties of active glassy systems. Our theoretical predictions have also been tested in simulations.

Thursday, Jul 19th 2018

4:00 PM (Tea/Coffee at 3:30 PM)

Auditorium, TIFR-H