

# **Students' Annual Seminar**

## **Enhanced dynamic heterogeneity in model active glass forming liquids**

### **Kallol Paul**

As many recent experiments suggesting the near-glassy nature of the cell interior, there are many theoretical works on modelling the glass transition in presence of activity. An important question in this context is how does activity plays a role in the non-equilibrium glass transition. How does different dynamical features of typical glassy systems get modified in the presence of activity? For example, does activity change the static or dynamic heterogeneity length scale in the system? We used a recently proposed method, block analysis, to compute both the dynamic and static length scales. The dynamic length scale is obtained from the finite size scaling analysis of the four-point dynamic susceptibility on the block size and static length scale is obtained from block size dependence of the variance of alpha-relaxation time. Our findings show that dynamic heterogeneity length scale is increasing rapidly with activity whereas the temperature dependence of static length scale becomes weak with increasing activity. Activity also reduces the fragility of the glassy system, thus the origin of fragility in this model system can be related to the static length scale.

***Monday, Mar 5<sup>th</sup> 2018***

***02:00 PM (Tea/Coffee at 01:30 PM)***

***Seminar Hall, TIFR-H***