

## **Students' Annual Seminar**

### **Relaxation dynamics in various models of glassy systems**

#### **Puneet Pareek**

I will talk about the relaxation dynamics in two distinct problems. First, I will discuss a crossover phenomenon in the relaxation dynamics in a simple model system. We recently observed such a crossover in the decay of the overlap function in glassy systems. However, glasses are complex. The simplicity of our model allows us to follow the mechanism of this crossover: it comes from the changing nature of excitations in the relaxation dynamics. Second, I will discuss the relaxation dynamics in a model of dense active matter of self-propelled particles. The system shows a remarkable re-entrant behaviour as persistence time changes. I will show that this re-entrance behaviour emerges from a competition of the caging time scale with the persistence time.

***Friday, Apr 19<sup>th</sup> 2024***

***17:00 Hrs (Tea / Coffee 16:45 Hrs)***

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