



**S N BOSE NATIONAL CENTRE
FOR BASIC SCIENCES**

Block JD, Sector III, Salt Lake, Kolkata 700 106

DEPARTMENTAL SEMINAR

Physics of Complex Systems

08th August, 2023

4.00 PM

ONLINE / FERMION

SPEAKER



**Dr. ANUPAM KUNDU, Associate professor,
International Centre for Theoretical Sciences, Bangalore**

TITLE OF THE TALK

Integrability, chaos and thermalization in a collection of hard rods

ABSTRACT

Recently developed generalised hydrodynamic theory has been quite successful in understanding non-equilibrium evolution in integrable systems like hard rods which do not relax to Gibbs state. For hard rod gas, I will discuss hydrodynamic evolution from certain non-equilibrium states and demonstrate if and when they approach generalised Gibbs state. I will also discuss how to see the effect of dissipation in such evolution. In the second part of my presentation, I will talk about what happens when the microscopic integrability is broken by trapping the hard rods inside a confining potential. Particularly, I will discuss the possibility of chaos, ergodicity and thermalisation in trapped hard rods. Understanding these properties of trapped integrable systems has recently drawn a lot of interest.

HOST FACULTY

**Dr. Urna Basu, Assistant Professor
DEPT. OF PHYSICS OF COMPLEX SYSTEMS**
