



INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

2A & 2B, Raja S. C. Mullick Road, Jadavpur, Kolkata-700 032

School of Physical Sciences

SEMINAR NOTICE

- Title : Disordered QFTs and Parisi-Sourlas supersymmetry**
- Speaker : Apratim Kaviraj, Deutsches Elektronen-Synchrotron (DESY), Germany**
- Date : August 26, 2022 (Friday)**
- Time : 15:00 hours (IST)**
- Venue : Online Mode using Zoom Platform**
Zoom link of the seminar:
<https://zoom.us/j/94761112338>
Meeting ID: 947 6111 2338
Passcode: 668159

Abstract:

I will discuss the critical physics of a class of disordered (impure) quantum field theories, called random field models. It was conjectured by Parisi and Sourlas 40 years ago that these models have a critical point characterized by an emergent supersymmetry and an interesting 'dimensional reduction' property - that says they are related to a lower dimensional pure critical point (i.e. an ordinary conformal field theory). However, numerical simulations show that this conjecture works only under some specific conditions, not otherwise. I will explain these observations using the ideas of replica trick to set up a textbook-like renormalization flow analysis of random field models.

All are cordially invited to attend the seminar