ICTS | INTERNATIONAL CENTRE for THEORETICAL SCIENCES

TATA INSTITUTE OF FUNDAMENTAL RESEARCH

ICTS String Seminar (HYBRID)

Title : Disordered QFTs and Parisi-Sourlas supersymmetry

Speaker : Apratim Kaviraj (DESY)

Date : Friday, 22nd September 2023

Time : 11:00 AM (IST)

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.

Venue : **Offline:** Madhava Lecture Hall (ICTS)

Online: Please click the below link to join the seminar

https://icts-res-in.zoom.us/j/88092766911?pwd=R3ZrVk9yeW96ZmQ4ZG9KRzVhenRKZz09

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