



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

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

DEPARTMENTAL SEMINAR

Department of Astrophysics and High Energy Physics

08th June, 2026

3.00 pm

FERMION / ONLINE

SPEAKER



Dr. Apratim Kaviraj, Assistant Professor, Department of Physics, IIT Kanpur

TITLE OF THE TALK

Disorder, surface defect and logarithmic CFTs

ABSTRACT

The effect of impurities in the phase diagram of a physical system can be explored at the microscopic level by a disorder interaction. In this talk my goal is to discuss the disorder localized on a surface or boundary of the critical 3d Ising model. For a critical system surface interaction usually introduce new critical exponents associated with surface-restricted observables. These observables are described by a defect conformal field theory (CFT), and for surface disorder the CFT is logarithmic. I will show the existence of a surface defect disorder CFT associated with the Wilson Fisher CFT in 4-epsilon dimension, and discuss its logarithmic features. Along the way I will also discuss the replica formalism for RG computations with disorder interactions.

HOST FACULTY

Dr. Parijat Dey, Assistant Professor
Dept. of ASTROPHYSICS AND HIGH ENERGY PHYSICS
