



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

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

## **DEPARTMENTAL SEMINAR**

# **Condensed Matter and Materials Physics**

**17<sup>th</sup> April, 2024**

**3.00 PM**

**ONLINE / FERMION**

### **SPEAKER**

**Dr. Rajdeep Sensarma,  
Associate Professor, Department of Theoretical Physics,  
Tata Institute of Fundamental Research**

### **TITLE OF THE TALK**

## **Electronic Correlations in Moire Flat Bands**

### **ABSTRACT**

Van der Waals heterostructures, where different two-dimensional materials are placed on top of each other, have emerged as a new playground for exotic phenomena driven by electronic correlations. Twisting the crystal axis of these layers leads to flat Moire bands where electronic properties depend strongly on the angle of twist. After a brief review, I will focus on two distinct phenomena : (i) presence of non-Fermi liquid correlations in twisted double bilayer graphene and (ii) Dirac revivals around commensurate fillings in twisted bilayer graphene. I will show how strong electronic correlations can explain both these phenomena.

### **HOST FACULTY**

**Dr. Arijit Haldar,**

Assistant Professor, Dept. of Physics of Complex Systems

And

Adjunct Faculty, Dept. of Condensed Matter & Materials Physics

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