



## Just a Little Bit of Twist: Superconductivity in moire Materials

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Interference between misaligned periodic structures can create moire patterns with new periodicities and new lengthscales. When two dimensional quantum materials are stacked on top of each other in a twisted fashion, the interference of electron waves lead to emergence of new physics in these moire materials. The electronic structure can be changed by controlling the twist angle, and at specific magic angles, these materials show a panoply of correlated phases like superconductivity and magnetism.

I will focus on the superconducting phase, where a Bose Einstein condensate of Cooper pairs can drive a dissipationless current. In moire materials, we are yet to fully understand even the symmetries of the Cooper pair wavefunction. I will discuss what hints experiments have already given us and how we can probe these symmetries further.

**Rajdeep Sensarma** is a **Professor** at the Department of Theoretical Physics at the **Tata Institute of Fundamental Research**, Mumbai. He is a condensed matter theorist with a wide range of research interests including strongly correlated quantum matter, non equilibrium dynamics of quantum systems and quantum information in many body systems.



**Venue: HSB 209 (PH Seminar Hall)**

**Wednesday September 30th, 2026**

**Time: 4:30 - 5:30 PM**

**Cake at 4:15 PM**



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