



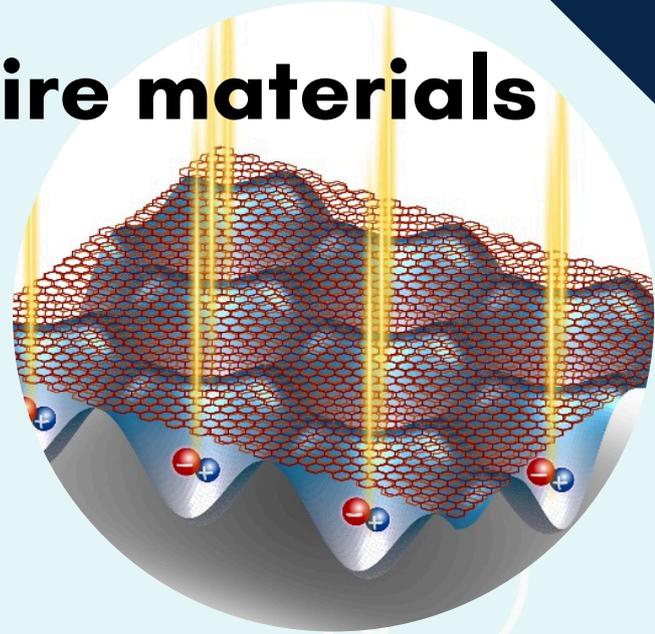
IIT KANPUR

PHYSICS COLLOQUIUM

Two dimensional moire materials

ABSTRACT

Periodic potentials form the basis for solid-state systems and their electronic band structures. When a secondary periodic potential is introduced in the form of a moiré superlattice with a long wavelength, the electronic band structure is heavily modified by the formation of minibands. In recent years, graphene and related layered materials have garnered considerable attention since they provide easy access to the moiré physics via tunability of the interlayer twist angles. The formation of extremely flat bands at certain 'magic' angles in twisted bilayers of graphene (tBLG), has led to the observation of correlated insulating states and superconductivity and other exotic states such as Chern insulators, orbital ferromagnets, and nematic phases. The dielectric environment of tBLG can also play an important role in controlling electronic correlations within the flat bands. In this talk, I shall highlight various facets of many-body correlations that we have explored using a combination of magneto-transport, thermoelectric measurements and planar tunneling, in moire graphene.



SPEAKER



All are Cordially Invited

Prof. U. Chandni
Indian Institute of Science



FB 382 (Amal Kumar Raychaudhuri Seminar Room)



Friday, Feb 7, 2025 at 5:15 PM
(Refreshments at 5:00 PM)