



ICTS Seminar

Title : Superconductivity in flat bands: New directions and/or Methods

Speaker : Gaurav Chaudhary (University of Cambridge, UK)

Date : Wednesday, 08 January 2025

Time : 4:00 PM (IST)

Abstract : The discovery of superconductivity in magic-angle twisted bilayer graphene started a new paradigm in superconductivity. Can it exist in flat bands with non-trivial topology? The answer appears to be yes. With this motivation, I will take the paradigmatic example of flat topological bands, i.e. Landau levels, and pose a question: what is the nature of possible superconductivity in this system? Depending on the general interests of the audience, I will (i) either direct the discussion toward physics aspects, such as the topological nature of such superconductivity, its relation to superconductivity in moiré materials, and what are interesting questions to address in the future, or (ii) I will steer the discussion towards computational aspects of this setup and discuss how tensor networks and DMRG provide an exciting toolkit to study these systems at a numerical exact level.

Venue : Madhava Lecture Hall

Zoom Link: <https://icts-res-in.zoom.us/j/93853537657?pwd=NGVj6L7mBa5aba6rZUEWCYsAOmCxm6.1>

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