ICTS Seminar

Title	:	Schwinger-Boson mean-field study of spin-1/2 J1-J2-Jχ model in honeycomb lattice: thermal Hall signature
Speaker	:	Arijit Kundu (IIT Kanpur)
Date	:	Tuesday, 14th September 2021
Time	:	03:00 pm (IST)

Abstract : We theoretically investigate, within the Schwinger-Boson mean-field theory, the transition from a gapped Z2 quantum spin-liquid, in a J1-J2 Heisenberg spin-1/2 system in a honeycomb lattice, to a chiral Z2 spin Liquid phase under the presence of time-reversal symmetry breaking scalar chiral interaction (with amplitude Jχ), with non-trivial Chern bands of the excitations. We numerically obtain a phase diagram of such J1-J2-Jχ system, where different phases are distinguished based on the gap and the nature of excitation spectrum, topological invariant of the excitations, the nature of spin-spin correlation and the symmetries of the mean-field parameters. The chiral Z2 state is characterized by non-trivial Chern number of the excitation bands and lack of long-range magnetic order, which leads to large thermal Hall coefficients.

Venue : Please click on the below link to join the seminar

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Meeting ID: 846 0293 1542
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