Infosys Condensed Matter Seminar

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Venue: AG 69 Time: 11:00 a.m.

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Title : Symmetry Protected Topological Phases of Quantum Matter

Abstract : A major advance In the physics of the last decade is the theoretical prediction and experimental discovery of topological insulators. Though the topological insulator was initially discussed within the framework of free electron band theory, recent work has focused attention on the topological insulator phenomenon in interacting many particle systems. It is now recognized that free fermion topological insulators are a special case of a more general class of phases of matter known as Symmetry Protected Topological (SPT) phases. In these lectures I will describe these SPT phases with a focus on their physical (rather than mathematical) characterization. Studies of SPT phases have increasingly played a central role in quantum many body physics and have lead to deep and surprising connections between many different research topics. Time permitting, I will describe some of these as well.