

Torus Spectroscopy: A novel numerical tool to diagnose the nature of quantum phase transitions and quantum spin liquids

Tuesday 24 May 2022 14:00 (1 hour)

In this talk I will present the torus spectroscopy, i.e. the analysis of the finite volume spectrum of the Hamiltonian on a spatial torus in 2+1D as a practical numerical tool to determine the universality class of quantum phase transitions. We show an application with an emergent 3D O(2) phase transition and that we are able to detect the presence of dangerously irrelevant couplings. In a second application we report on ongoing work to shed light on the possible presence of a QED₃ like phase (Dirac spin liquid) in a frustrated spin model.

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