DY 33: Invited Talk Anatoli Polkovnikov

Time: Wednesday 15:00–15:30 Location: H20

Invited Talk DY 33.1 Wed 15:00 H20

Detecting dynamical quantum phase transitions by string observables — •Anatoli Polkovnikov[1], Amit Dutta[2], and Souvik Bandyopadhyay[2] — [1]Boston University, Boston, USA — [2]IIT Kanpur, India

Dynamical quantum phase transitions (DQPT) were proposed as singularities developing in time following a quantum quench in the return amplitude or the Loschmidt echo. They have close connection with Fisher zeros of the partition function extended to imaginary temperatures (real time). Because the Loschmidt echo is hard to measure it is not easy to observe DQPT experimentally. In this talk I will explain how one can detect DQPT both as a function of time and as a function of quench amplitude in finite size string observables. These findings are in very good agreement with an experiment by J. Zhang et. al. Nature 551, 601 (2017) performed in a trapped ion simulator.