

# Dynamical quantum phase transitions in the Ising model

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An equilibrium phase transition indicates a sudden change in the properties of a large system. For temperature-driven phase transitions this is related to nonanalytic behavior of the free energy density at the critical temperature. In this talk it will be shown that a close analogue of this behavior can occur in the real-time evolution of quantum systems, namely non-analytic behavior at a critical time. Such a behavior will be called a dynamical phase transition and its properties will be illustrated for quenches in the one-dimensional transverse field Ising model.