



Colloquium
Dahlem Center for Complex Quantum Systems

Dynamical Quantum Phase Transitions in the Transverse Field Ising Model

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Time: Tuesday, June 4th 2013, 14:00 c.t.

Location: Hörsaal A (1.3.14)

Abstract:

A phase transition indicates a sudden change in the properties of a large system. For temperature- driven phase transitions this is related to non-analytic behavior of the free energy density at the critical temperature: The knowledge of the free energy density in one phase is insufficient to predict the properties of the other phase. I will discuss how a close analogue of this behavior can occur in the real time evolution of quantum systems, namely non-analytic behavior at a critical time. The properties of this dynamical phase transition are explored in the transverse field Ising model.