

Dynamics of externally driven quantum systems

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Abstract

We present the concept of an excited-state quantum phase transition and analyse its influence on the non-equilibrium dynamics after a quantum quench in the Lipkin model. We show that if the energy distribution of the initial state after the quench is centred at the critical energy, the survival probability of the initial state evolves in an anomalous way.

Keywords

Quantum phase transitions, Excited-state quantum phase transitions, Quantum quenches, Lipkin model