Contribution ID: **42** Type: **Invited talk**

Two-stage thermalization of nearly integrable systems

Wednesday 6 April 2011 11:10 (40 minutes)

A quantum many-body system which is prepared in the ground state of an integrable Hamiltonian will not directly thermalize after a sudden small parameter quench away from integrability. Rather, it will be trapped in a prethermalized state and can thermalize only at a later stage, as observed after an interaction quench in the Hubbard model. We show that the prethermalization stage can be described by a generalized Gibbs ensemble built from approximate constants of motion in the vicinity of the integrable point. For the second stage we derive a quantum Boltzmann equation that describes the crossover from the prethermalized to the thermalized state. For nearly integrable systems this two-stage scenario provides an understanding of thermalization from a pure initial state to a final thermal ensemble state.

Author: KOLLAR, Marcus (University of Augsburg)

Presenter: KOLLAR, Marcus (University of Augsburg)

Session Classification: Magnetism II