



Sonderforschungsbereich 631
Festkörperbasierte Quanteninformationsverarbeitung



Seminar Announcement

Speaker: **Prof Luigi Amico**
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Title: Entanglement in many-body systems

Time: Wednesday, 23 April, 2008, 10 c.t.

Location: Uni Regensburg, seminar room PHY 4.1.13

Abstract:

The recent interest in aspects common to quantum information and condensed matter has prompted a prosperous activity at the border of these disciplines that were far distant until few years ago. Numerous interesting questions have been addressed so far. Here I review the properties of the entanglement in many-body systems. I will be discussing the zero and finite temperature properties of entanglement, by focusing on spin lattice models. Both bipartite and multipartite entanglement will be considered. At equilibrium we emphasize on how entanglement is connected to the phase diagram of the underlying model. The behaviour of entanglement can be related, via certain witnesses, to thermodynamic quantities thus offering interesting possibilities for an experimental test. Out of equilibrium entangled states can be generated and manipulated by means of many-body Hamiltonians.
