



TRR 80 Sonderseminar

Am Mittwoch, den 17. Dezember um 11:00 Uhr

spricht

Dr. Markus Heyl

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über das Thema

***Many-body localization and quantum ergodicity in disordered
long-range Ising models***

Ergodicity in quantum many-body systems is - despite its fundamental importance - still an open problem. Many-body localization provides a general framework for quantum ergodicity, and may therefore offer important insights. In this talk, it will be shown that long-range interacting Ising models with transverse- field disorder enter a many-body localized phase at infinite temperature, irrespective of the disorder strength. As a consequence, these systems are nonergodic. To characterize and quantify quantum ergodicity, a measure for distances in Hilbert space will be introduced. It will be shown that in spin-1/2 systems it is equivalent to a simple local observable in real space, which can be measured in current experiments of superconducting qubits, polar molecules, Rydberg atoms, and trapped ions.

Gäste sind herzlich willkommen.

Der Vortrag findet im Seminarraum S-439 / Institut für Physik, Universität Augsburg statt.

Gastgeber: Dr. Marcus Kollar
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