Einladung zum Vortrag

"Measurement-Induced Phase Transitions in Open Fermion Chains"

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Termin: **Freitag, 27.11.2020, 09:00 Uhr**
Zoom Meeting: https://us02web.zoom.us/j/86456001690

Abstract:

I will talk about measurement-induced dynamics recently observed in numerical simulations of lattice fermions subject to continuous monitoring. The interplay between unitary hopping and weak monitoring establishes a long-range correlated state, featuring entanglement growth and correlations reminiscent of conformal invariance in (1+1)-dimensions. This scenario breaks down at a critical monitoring strength, above which a quantum Zeno regime with area law entanglement emerges.

Based on an analytical replica field theory for the monitoring scenario, I will show that the dynamics can be decomposed into two different replica sectors, a trivial one that heats up to infinite temperature, as expected for a continuous measurement, and a nontrivial one displaying an effective low-energy dynamics. The latter is governed by a non-hermitian Hamiltonian, revealing both the origin of the conformal invariance and the nature of the measurement induced phase transition.