SFB/TRR 21 - Seminar
19. Februar 2008, Ulm

Dr. Simone Montangero
(Scuola Normale Superiore, Pisa)

Simulation of time evolution with the MERA

We describe an algorithm to simulate time evolution using the Multi-scale Entanglement Renormalization Ansatz (MERA) and test it by studying a critical Ising chain with periodic boundary conditions and with up to ~106 quantum spins. The cost of a simulation, which scales as log (L), is reduced to log (L) when the system is invariant under translations. By simulating an evolution in imaginary time, we compute the ground state of the system. The errors in the ground state energy display no evident dependence on the system size. The algorithm can be extended to lattice systems in higher spatial dimensions.

19. Februar 2008, 11:00 Uhr

Universität Ulm, Raum N25 / H8
Albert-Einstein-Allee 11, 89081 Ulm

CO.CO.MAT