

Abstract Submitted
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Quantum Quench of the Sachdev-Ye-Kitaev Model¹ JULIA STEINBERG, ANDREAS EBERLEIN, SUBIR SACHDEV, Harvard Univ — The Sachdev-Ye-Kitaev model is a single site model containing N flavors of fermions with random infinite range interactions. It is exactly solvable in the large N limit and has an emergent reparameterization symmetry in time at low temperatures and strong coupling. This leads to many interesting properties such as locally critical behavior in correlation functions and the saturation of the chaos bound proposed. We start with the generalized Sachdev-Ye-Kitaev with quadratic and quartic interactions. This Hamiltonian has the form of a 0+1d Fermi liquid and contains long-lived quasiparticles at all values of the quadratic coupling. We quench the system into a locally critical state without quasiparticles by turning off the quadratic coupling at some initial time. We numerically study the spectral function at intermediate and long times and determine the timescale in which the system loses memory of the quasiparticles.

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