

Abstract Submitted
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Relaxation and thermalization of isolated quantum many-body systems after a local quench¹ EDUARDO J. TORRES-HERRERA, LEA F. SANTOS, Physics department, Yeshiva University, New York, NY — A single on-site defect in the middle of a one-dimensional spin-1/2 XXZ model is enough to break its integrability. By quenching the excess energy of the defect, we investigate the relaxation process for various initial states and the viability of thermalization. Changing the defect energy is equivalent to weakly perturbing the system, which prevents the initial state (projected into the energy eigenbasis) from achieving a Gaussian shape; it has instead a Breit-Wigner form. We show that in this scenario, the relaxation process is slower and the role of the Eigenstate Thermalization Hypothesis becomes more prominent.

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