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Many-body analysis of a quasi-disordered integrable lattice system after a quench LEA SANTOS, Yeshiva University, MARCOS RIGOL, Penn State University — It has been recently argued that the transition between a delocalized and a localized regime in a quasi-disordered integrable lattice system affects the dynamics and description of one-body observables after relaxation following a quench [1]. Specifically, the generalized Gibbs ensemble description was found to be applicable in the delocalized phase, but to break down in the localized phase. Here we present a many-body analysis of those quenches. We discuss how the expectation values of one-body observables in the many-body eigenstates behave in both regimes, and provide a microscopic understanding of the results in Ref. [1].
Ref. [1]: C. Gramsch and M. Rigol, Phys. Rev. A (in press); arXiv:1206.3570.

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