

Abstract Submitted
for the DAMOP17 Meeting of
The American Physical Society

Dynamical manifestations of quantum chaos¹ EDUARDO JONATHAN TORRES HERRERA, Instituto de Física, Benemerita Universidad Autonoma de Puebla, LEA SANTOS, Department of Physics, Yeshiva University — A main feature of a chaotic quantum system is a rigid spectrum, where the levels do not cross. Dynamical quantities, such as the von Neumann entanglement entropy, Shannon information entropy, and out-of-time correlators can differentiate the ergodic from the nonergodic phase in disordered interacting systems, but not level repulsion from level crossing in the delocalized phase of disordered and clean models. This is in contrast with the long-time evolution of the survival probability of the initial state. The onset of correlated energy levels is manifested by a drop, referred to as correlation hole, below the asymptotic value of the survival probability. The correlation hole is an unambiguous indicator of the presence of level repulsion.

¹EJTH is grateful to VIEP, BUAP for financial support through the VIEP projects program

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Date submitted: 30 Jan 2017

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