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Numerical studies of a many-body localized system coupled to a bath[1] SONIKA JOHRI, Department of Electrical Engineering, Princeton University, RAHUL NANDKISHORE, Princeton Center for Theoretical Science, Princeton University — We use exact diagonalization to study the breakdown of localization in a many-body localized system coupled to a non-integrable bath. Signatures of incomplete localization survive even when the coupling to the bath is non-zero. In particular, we examine (i) level statistics, (ii) eigenstate thermalization, (iii) zero- and finite temperature spectral functions, (iv) correlation functions, and (v) transport properties. We find a continuous change from localized to ergodic behaviour in these quantities as the coupling to the bath increases.

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Sonika Johri
Department of Electrical Engineering, Princeton University

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