R. N. Bhatt, Scott Geraedts and Rahul Nandkishore, "Local Integrals of Motion without a complete set of localized eigenstates".

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1-D Anderson model in a projected Hilbert Space[1] AKSHAY KRISHNA, R. N. BHATT, Princeton University — The standard 1-D Anderson model possesses a completely localized spectrum of eigenstates for all values of the disorder. We consider the effect of projecting the Hamiltonian to different truncated Hilbert spaces, some of which preserve time reversal symmetry and others that do not. We analyze the ensuing eigenstates using different measures such as inverse participation ratio and sample-averaged moments of the position operator. In addition, we examine amplitude fluctuations in detail to detect the possibility of multifractal behavior (characteristic of mobility edges) that may arise as a result of the truncation procedure.

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