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Houssam Abdul-Rahman, Bruno Nachtergaele, Robert Sims and Gunter Stolz*
(stolz@uab.edu). *Manifestations of Many-Body Localization*.

In the most recent decade the topic of many-body localization has seen strong attention and rapid development in the physics and quantum information literature. The physical understanding of relevant concepts is still in flux, while mathematically rigorous approaches remain a wide open challenge. Here we will survey some of the accepted manifestations of MBL such as absence of many-body transport, exponential decay of ground and thermal state correlations, as well as area laws for the (stationary and dynamical) entanglement of states. Among the few models where mathematical results have been obtained are disordered oscillator systems and some examples of quantum spin chains. Recent work on the latter will be presented in the talk by H. Abdul-Rahman. (Received January 05, 2016)