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**Quantum thermalization and many-body Anderson localization**

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The out-of-equilibrium dynamics of closed quantum many-body systems can now be explored in a variety of laboratories using a variety of different physical systems, and as a consequence have received a lot of recent theoretical attention. When such systems do go to thermal equilibrium under their own unitary time evolution, this is what is called thermalization. Thermalization is what happens at long times in many large interacting and closed quantum systems, and one way of understanding part of how this happens is via the eigenstate thermalization hypothesis (ETH). The main generic exception to thermalization is many-body localization (MBL), where the system fails to act as a bath to thermalize itself, in spite of being strongly interacting. Instead, the quantum state of a MBL system remains localized near its initial state. MBL is now understood as a new type of quantum integrability, with localized conserved operators. There is a new type of quantum phase transition between MBL and thermalization as one decreases the static randomness in the system; this phase transition remains poorly understood.