

Quantum Thermalization and Localization

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Outline

- (1) Quantum chaos; RMT; ETH; Equilibration (e.g. works of Popescu and followers); Memory of initial state (e.g. works of Olshanii, Prosen).
- (2) Classical evolution (KAM, Chirikov, Arnold web); Stochastic pump model of Arnold diffusion; Fokker-Plank description of thermalization; Thermalization of long DNLS chains (Basko); Quantum implications.
- (3) Quantum Localization; breaktime concept; Anderson criterion; Quantum metastability; Disorder and MBL; Quantum phase transition at finite temperature. The DNLS/BHH spreading problem.