

Nonperturbative localization.

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Study of fine spectral properties of quasiperiodic and similar discrete Schrodinger operators involves dealing with problems caused by small denominators, and until recently was only possible using perturbative methods, requiring certain small parameters and complicated KAM-type schemes. I will first review the nonperturbative methods for such study which lead to stronger results and are significantly simpler. Next, I will discuss recent work (joint with J. Bourgain) on nonperturbative localization for the quantum kicked rotor model.