

25th Rencontres Itzykson - Many Body Chaos, Scrambling and Thermalization in Interacting Quantum Systems



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Delocalization of chaotic eigenmodes

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In this talk I will review different mathematical results on the delocalization of eigenmodes of the Laplacian in closed billiards or compact Riemannian manifolds, assuming the geometry generates a chaotic ray (geodesic) dynamics.

The focus will be on the high frequency regime, where semiclassical / microlocal methods can be applied. In particular I will recall the Quantum Ergodicity Theorem, which concerns “almost all” the eigenmodes, and also give more recent “absolute” delocalization results, especially valid in the case of strongly chaotic (Anosov) flows.

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