Quantum ergodicity and Benjamini-Schramm convergence of hyperbolic surfaces

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Time **Thursday, Nov 24, 2016 at 16:00**
Place **Campus Kirchberg, room B04**

The quantum ergodicity theorem states that on compact hyperbolic surfaces, most eigenfunctions of the Laplacian equidistribute spatially in the large eigenvalue limit. We will present an alternative equidistribution theorem for eigenfunctions where the eigenvalues stay bounded and we take instead sequences of compact hyperbolic surfaces converging to the plane in the sense of Benjamini and Schramm. This approach is motivated by joint works with Anantharaman, Brooks and Lindenstrauss on quantum ergodicity on regular graphs, and equidistribution results for holomorphic forms in the level aspect by Nelson et al. The proof presented differs in important ways from the usual proof of quantum ergodicity. In particular it does not use any microlocal analysis.

Joint work with Tuomas Sahlsten.