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Toward high-rank Quantum Unique Ergodicity

I will discuss results with N. Anantharaman on the equidistribution problem for eigenfunctions on higher rank locally symmetric spaces. The high-eigenvalue limit is a semiclassical limit where the classical dynamical system is a multiparameter flow with many symmetries (arising from number theory), which give a-priori restrictions on the possible quantum limits. We show that in some cases the limiting measure cannot be entirely singular to the uniform (Lebesgue) measure, without assuming the eigenfunctions are also eigenfunctions of the Hecke operators (under the stronger hypothesis stronger results are known).