We show that on a compact hyperbolic surface, for any nonempty set \( \Omega \) the mass of a normalized eigenfunction of the Laplacian in \( \Omega \) is bounded below by a positive constant which is independent of the eigenvalue. This in particular gives control for Schrodinger equation by any nonempty open set. A more general semiclassical statement implies that every semiclassical limiting measure associated to a sequence of eigenfunctions has full support.

The proof relies on semiclassical analysis, which is the mathematical theory behind the classical/quantum, or particle/wave correspondence. The key new ingredient is a fractal uncertainty principle, stating that no function can be localized close to a porous set in both position and frequency. This talk is based on joint works with Long Jin and with Jean Bourgain.