Quantum chaos and the thermodynamical formalism
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I will describe how various objects appearing in the analysis of chaotic dynamical systems (invariant measures, metric entropy, topological pressures) appear when one studies the quantum (or wave) counterpart of these systems, in the high frequency (or semiclassical) regime. Examples of systems include the spectral study of the Laplace Beltrami on a compact Riemannian manifold of negative curvature, or on a manifold of infinite
volume where the set of trapped geodesics is a hyperbolic set (chaotic scattering). The general idea is that the dispersion of the waves is accelerated by the classical hyperbolicity, but may be slowed down due to interference effects.

I plan to explain how some features of the hyperbolic structure (e.g. the regularity of the stable/unstable foliations) play a crucial role in the analysis.