

SEMINARIO DE ANÁLISIS Y APLICACIONES

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11:30 h., **Aula Naranja** (ICMat, Campus de Cantoblanco)

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Semi-classical limits on quantum graphs

Resumen:

Let (X, g) be a smooth compact Riemannian manifold and ϕ_j be an orthonormal eigen-basis of eigenfunctions of the Laplace operator. The Quantum ergodicity (QE) Theorem, due mainly to A. Shnirelman (1974), says that, if the geodesic flow of (X, g) is ergodic, then the probability measures $\mu_j = |\phi_j|^2 dx_g$, once removed a density 0 sub-sequence, converge to the measure $dx_g/\text{Volume}(X, g)$.

This result has been extended recently by Jakobson, Safarov and Strohmaier to discontinuous metrics. They need an extra assumption to ergodicity, namely a weak interference assumption. This assumption is not satisfied for Quantum graphs, i.e. graphs as 1D singular Riemannian manifolds. I will show that QE is not satisfied for Quantum graphs and describe all possible weak limits of measures μ_j .