Séminaire d'analyse

Pointwise bounds for Steklov eigenfunctions

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Résumé:

Let (M,g) be a compact, real-analytic Riemannian manifold with real-analytic boundary. The harmonic extensions of the boundary Dirchlet-to-Neumann eigenfunctions are called Steklov eigenfunctions. We show that the Steklov eigenfunctions decay exponentially into the interior in terms of the Dirichlet-to-Neumann eigenvalues and give a sharp rate of decay to first order at the boundary and prove a conjecture of Hislop and Lutzer. The estimates follow from sharp estimates on the concentration of the FBI transforms of solutions to analytic pseudodifferential equations Pu=0 near the characteristic set. This talk is based on joint work with John Toth.

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