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The Steklov eigenvalue problem on polygons

Title: The Steklov eigenvalue problem is an eigenvalue problem like the Dirichlet or Neumann problem, but with the eigenvalue parameter appearing in the boundary condition rather than in Laplace's equation. It is known that there are surprisingly sharp eigenvalue asymptotics for the Steklov problem on surfaces with smooth boundary. I will explain what happens to these asymptotics when the surface has corners; the answer involves a fascinating scattering-like phenomenon along the boundary. This talk is based on joint work in progress with M. Levitin, L. Parnovski, and I. Polterovich.