Large Steklov eigenvalues under geometric constraints

Panagiotis Polymerakis

In this talk, we will discuss two recent constructions of compact Riemannian manifolds with boundary which satisfy certain geometric conditions and have arbitrarily large first non-zero Steklov eigenvalue. In the first part of the talk, under some assumptions, we will construct Riemannian metrics on a given manifold which coincide on the boundary, have fixed volume and arbitrarily large first non-zero Steklov eigenvalue. In particular, this provides the first examples of Riemannian metrics with these properties on three-dimensional manifolds. In the second part, we will construct compact submanifolds of the Euclidean space with fixed boundary and arbitrarily large first non-zero Steklov eigenvalue. This is a joint work with Alexandre Girouard.