
ANTOINE METRAS, University of Montreal
Steklov extremal metrics in higher dimension

Since the original papers of Fraser and Schoen in 2012, which highlighted the relation between extremal metrics for the Steklov normalized eigenvalue $\bar{\sigma}(\Sigma, g) = \sigma(\Sigma, g)/|\partial\Sigma|$ on surface and free boundary minimal surface in B^m , those two subjects have been highly studied.

In higher dimension $n \geq 3$, how the Steklov eigenvalues should be normalized (by volume? boundary volume? a mixed of both?) is not a priori clear. In this talk I will discuss how only one choice of normalization allows for Steklov extremal metrics. I will also talk about the connection between Steklov conformal-extremal metrics on M^n , n-harmonic maps and the need to consider the Steklov problem with boundary density.

Based on joint work with Mikhail Karpukhin.