

Steklov eigenvalues and higher order Cheeger type inequalities

Asma Hassannezhad

In 1970 Cheeger obtained a beautiful geometric lower bound for the first nonzero eigenvalue of the Laplacian in term of an isoperimetric constant. Inspired by the Cheeger inequality, Cheeger type inequalities for the first nonzero Steklov eigenvalue have been studied by Escobar, and recently by Jammes. The generalization of the Cheeger inequality to higher order eigenvalues of the Laplacian in discrete and manifold settings has been studied in recent years. In this talk, we study the higher-order Cheeger type inequalities for the Steklov eigenvalues. It gives an interesting geometric lower bound for the k -th Steklov eigenvalue. It can be viewed as a counterpart of the higher order Cheeger inequality for the Laplace eigenvalues, and also as an extension of Escobar's and Jammes' results to the higher order Steklov eigenvalues. This is joint work with Laurent Miclo.