Title

Spectral Properties of Laplacians Defined by Fractal Measures

Abstract

The spectral dimension of a fractal Laplacian is a fundamental quantity that plays an important role in studying the analytic properties of the operator. We report some results concerning the spectral dimension of Laplacians defined by fractal measures, focusing on self-similar measures with overlaps. We discuss some applications, including heat kernel estimates and wave propagation speed. We also discuss the construction of such Laplacians on Riemannian manifolds. This talk is based on joint work with Qingsong Gu, Jiaxin Hu, Lei Ouyang, Wei Tang, and Yuanyuan Xie.

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