



复旦大学数学科学学院 数学综合报告会

报告题目: **Regularity for Spectral Optimizers**

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报告地点: 光华东主楼 1801

摘要: A classic subject in analysis is the relationship between the spectrum of the Laplacian on a domain and that domain's geometry. One approach to understanding this relationship is to study domains which extremize some function of their spectrum under geometric constraints. I will explain how to approach these problems using tools from the calculus of variations to find solutions. A key difficulty with this method is showing that the optimizers (which are a priori very weak) are actually smooth domains, which I address in some recent work with Fanghua Lin. Our results are based on relating spectral optimization problems to certain vector-valued free boundary problems of Bernoulli type.

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