



6th Symposium on Analysis and PDEs

Purdue University, June 1–4, 2015

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June 2, 10:00–10:50am

Minimal Surfaces and an Extremal Eigenvalue Problem.

Finding sharp eigenvalue bounds and characterizing the extremals is a basic problem in geometric analysis. We will describe the structure of metrics which are obtained by maximizing the first eigenvalue of the Dirichlet-to-Neumann map over all metrics on a surface with boundary. It turns out that the extremals are related to minimal surfaces in the ball with a natural boundary condition, and in some cases it is possible to use minimal surface theory to characterize the extremal metrics and obtain sharp eigenvalue bounds. This is joint work with R. Schoen.