

Optimization of the Principal Eigenvalue for Elliptic Operators

Hongwei Lou

School of Mathematical Sciences, Fudan University

Joint work with Prof. Jiongmin Yong

Abstract. Optimization problems of the principle eigenvalue for elliptic operators are considered. We establish that though the optimal principal eigenvalue for these operators is not always attainable, it can be attained by some elliptic operator formed by lamination of the original operators. We give also necessary conditions on the optimal principal eigenvalue and eigenfunctions.