

Extremal values for the spectral determinant of Sturm-Liouville problems

Pedro Freitas

University of Lisbon

The regularised spectral determinant of an elliptic operator is a global spectral quantity obtained via the analytic extension of the corresponding zeta function. In previous joint work with Aldana and Caillau, we determined the optimal potential maximising the determinant for a Sturm-Liouville operator with Dirichlet boundary conditions on a bounded interval, under a general L^p -norm restriction. We now consider the minimisation problem, where the determinant is expected to become negative for a sufficiently large value of the norm restriction, and fully characterise the different extremal potentials. This is joint work with Caillau, Chitour and Privat.