Mathematics > Functional Analysis

Spectral comparisons between networks with different conductance functions

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For a network consisting of a graph with edge weights prescribed by a given conductance function c, we consider the effects of replacing these weights with a new function b that satisfies $b \leq c$ on each edge. In particular, we compare the corresponding energy spaces and the spectra of the Laplace operators acting on these spaces. We use these results to derive estimates for effective resistance on the two networks, and to compute a spectral invariant for the canonical embedding of one energy space into the other.

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