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Eigenvalues of the Laplace operator with weights

On a compact Riemannian manifold (M, g), possibly with boundary, we consider the eigenvalues of the weighted Dirichlet energy $\int_M |\nabla u|^2 \sigma \, v_g$ with respect to a weighted L^2 inner product $\int_M u^2 \rho \, v_g$, and discuss the behavior of these eigenvalues when the weights σ and ρ vary within the set of positive functions whose integral over M is fixed. This general context includes several known situations such as Witten Laplacians ($\sigma = \rho$), nonhomogeneous vibrating membranes ($\sigma = 1$), optimal conductivity ($\rho = 1$), etc.