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Isospectrality: a partial survey

Abstract: We will address constructions of isospectral operators in a variety of settings such as the Laplace spectrum on compact Riemannian manifolds and scattering on noncompact Riemannian manifolds. The primary techniques are Sunada?s technique and its many generalizations, which typically result in metrics with the same local but different global geometry, and the torus action method, which results in metrics with different local geometry. We will also identify geometric invariants that are not spectrally determined.