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Resonances for the Laplacian on locally symmetric spaces of finite volume

For locally symmetric spaces of finite volume the theory of Eisenstein series provides an explicit description of the spectral resolution of the absolute continuous part of the Laplacian. In the case of arithmetic quotients, the scattering matrices can be expressed in terms special Dirichlet series which generalize Dirichlet L-series. The scattering resonances correspond to zeros of these Dirichlet series. Methods of analytic number theory can be used to study their location and distribution.
I will give an overview of results and discuss some problems.