

On the spectrum of warped products and G-manifolds

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Abstract

In this conference we study the generic spectrum of warped products and G-manifolds (that contain principal bundles). We establish a kind of splinting eigenvalues theorem considering a family of differential operators on the base of a warped product. As a consequence, we prove a density theorem for a set of warping functions that makes the spectrum of the Laplacian a warped-simple spectrum. This is then used to study the generic situation of the eigenvalues of the Laplacian on a class of compact G-manifolds. In particular, we give a partial answer to a question posed in 1990 by Steven Zelditch about the generic situation of multiplicity of the eigenvalues of the Laplacian on principal bundles. Joint work with José Nazareno Vieira Gomes (Federal University of Amazonas)