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# On the spectrum of warped products and G-manifolds

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In this talk, we study the spectrum of warped products in order to obtain a class of G-manifolds (that contain principal bundles) which is possible to describe its generic spectrum. We establish a kind of splinting eigenvalues theorem considering a family of 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. As an application, we give an answer to the generic situation for eigenvalues of the Laplacian on a class of compact G-manifolds. In particular, we give a partial answer to a question posed by S. Zelditch [Ann. Inst. Fourier 40 (1990) 407-442] about the generic situation of multiplicity for the eigenvalues of the Laplacian on principal bundle.

Joint work with Marcus A. M. Marrocos (Federal University of ABC).

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