

WORKSHOP ON SUBMANIFOLD THEORY AND GEOMETRIC ANALYSIS

UFSCAR, SÃO CARLOS, BRAZIL, AUGUST 05 – 09, 2019

MONDAY- 17h - 17:50h -AUDITÓRIO DO DM

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On the spectrum of warped products and g -manifolds

ABSTRACT. In this conference we study the generic spectrum of warped products and G -manifolds (that contain principal bundles). We establish a kind of splitting eigenvalues theorem considering a family of differential operator 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-simplified 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 1990 by Steven Zelditch about the generic situation of multiplicity of the eigenvalues of the Laplacian on principal bundles.

References:

- [1] UHLENBECK K. - *Generic properties of eigenvalues*, Amer. J. Math. 98 (4) (1976) 1059-1078.
- [2] Zelditch S. - *On the generic spectrum of a riemannian cover*, Ann Inst. Fourier (Grenoble) 40 (1990) 407-442.

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