Generic irreducibility of Laplace eigenspaces on homogeneous spaces

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On a compact homogeneous space G/H, we study when all the eigenspaces of the Laplace–Beltrami operator are irreducible as G-modules for a generic G-invariant metric. Schueth gave algebraic conditions characterizing when this occurs, in terms of the irreducible representations of the compact Lie group G.

In this talk, combining Schueth's algebraic characterization with branching laws, we determine when this property holds for several families of homogeneous spaces. This talk is based on work in preparation with Emilio Lauret.

Trabajo en conjunto con Emilio Lauret (Universidad Nacional del Sur, Argentina).

Referencias

[1] D. Schueth. "Generic irreducibilty of Laplace eigenspaces on certain compact Lie groups". Ann. Global Anal. Geom. 52:2 (2017), 187-200.