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Spectral theory and frame flows on Kähler manifolds

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Abstract

The high energy behavior of eigenfunctions of the Laplace operator on a manifold is to a certain extent determined by the properties of the geodesic flow. In a similar way the so-called frame flow determines the behavior of the eigensections of the Laplace–Beltrami operator on differential forms or on spinors. Compact negatively curved manifolds are the only known examples where the frame flow is not ergodic, but the geodesic flow is. We will focus on the consequences of the presence of conserved quantities for the frame flow and relate them to the Lefschetz decomposition.

Joint work with D. Jakobson and S. Zelditch.