On the L^p-range of the Poisson transform on Riemannian Symmetric Spaces.

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Abstract

Abstract. In this talk we shall give characterizations of the L^p-range of the Poisson transform P_λ on Riemannian Symmetric Spaces.
In the rank one case we will show that for a non-zero real λ , the Poisson transform is a bijection from the space of L^2 functions on the boundary (respectively L^p) onto a subspace of eigenfunctions of the Laplacian satisfying certain L^2-type norms (respectively Hardy-type norms).
The proof uses techniques of singular integrals on the boundary viewed as a space of homogeneous type in the sense of Coifman and Weiss.
In the second part of this talk, we shall give a characterization of L^p-Poisson integrals on homogeneous line bundles on bounded symmetric domains.