

Stanton, Robert J.

Analytic extension of the holomorphic discrete series. (English) Zbl 0626.43008
Am. J. Math. 108, 1411-1424 (1986).

Motivated by *I. M. Gel'fand* and *S. G. Gindikin* [*Funkts. Anal. Prilozh.* 11, No.4, 19-27 (1977; [Zbl 0444.22006](#))] and a classical theorem of Paley and Wiener, which describes an L^2 -function on \mathbb{R} as a sum of boundary values of holomorphic functions in the two domains of $\mathbb{C} \setminus \mathbb{R}$, the author derives results about analytic extensions of matrix-coefficients of a holomorphic discrete series of a semisimple Lie group G to certain domains in the complexification $G_{\mathbb{C}}$.

The author classifies the G -orbits on $G_{\mathbb{C}}/G$ and relates it to Wolf's classification of the G -orbits on $G_{\mathbb{C}}/B$, where B is a Borel subgroup. - One should mention that both classifications has been generalized to semisimple symmetric spaces G/H , cf. *T. Oshima* and *T. Matsuki* [*J. Math. Soc. Japan* 32, 392-414 (1980; [Zbl 0451.53039](#))] and *T. Matsuki* [*ibid.* 31, 331-357 (1979; [Zbl 0396.53025](#))].

Reviewer: [M.Flensted-Jensen](#)

MSC:

- [43A85](#) Harmonic analysis on homogeneous spaces
- [22E30](#) Analysis on real and complex Lie groups
- [42B25](#) Maximal functions, Littlewood-Paley theory
- [22E46](#) Semisimple Lie groups and their representations

Cited in **1** Review
Cited in **16** Documents

Keywords:

[Hardy spaces](#); [analytic extensions](#); [matrix-coefficients](#); [holomorphic discrete series](#); [semisimple Lie group](#)

Full Text: [DOI](#)