PALEY-WIENER THEOREMS FOR THE $U_n$-SPHERICAL TRANSFORM ON THE HEISENBERG GROUP

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ABSTRACT. This is a continuation of my joint work with F. Astengo and B. Di Blasio on the properties of the spherical transform for $U_n$-invariant (i.e. $z$-radial) functions on $H_n$.

In 2007 we proved that the transform $\hat{f}$ of a $z$-radial Schwartz function admits a Schwartz extension from the Heisenberg fan to $\mathbb{R}^2$. In this talk I will discuss our joint results on the two kinds of Paley-Wiener theorems arising in this context, concerning respectively:

• holomorphic extensions from the fan to $\mathbb{C}^2$ of transforms of compactly supported $z$-radial functions and distributions on $H_n$,

• holomorphic extensions from $H_n$ to its complexification of inverse transforms of compactly supported functions and distributions on the fan.

The characterization of the two Paley-Wiener spaces is given in “real” terms à la Anderson-deJeu.

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