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On the Fourier and Hankel kernels for symmetric powers functoriality of $GL(2)$

Abstract : An essential ingredient in the Braverman-Kazhdan program towards the functional equation of automorphic L-function is a generalized Fourier transform depending on a reductive group G and a representation of its Langlands dual group. We expect this Fourier transform to be the convolution with a stably invariant function defined on a Zariski open subset of G . We present a formula for this function in the case of $GL(2)$ and the symmetric power representations of its dual group. We present another formula for the effect of this transformation on orbital integrals. This is a joint work with Zhilin Luo.