Some Parseval-Goldstein type identities
for the generalized Macdonald and Hankel transforms

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Abstract

In the present paper the authors show that iterations of the generalized Hankel transform with the generalized Macdonald transform is a constant multiple of the generalized Widder transform. Using these iteration identities, several Parseval-Goldstein type theorems of these transforms are given. By making use of these results a number of new Goldstein type exchange identities are obtained. The identities proven in this paper are shown to give rise to useful corollaries for evaluating infinite integrals of special functions. Some examples are also given as illustration of the results presented here.

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