HANKEL INTEGRAL TRANSFORM
OF MITTAG-LEFFLER TYPE FUNCTION

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The paper considers the Hankel integral transform of the Mittag-Leffler type function with a power factor. The result of the transformation is found in terms of the special Fox function. It is shown that in some special cases the formulas obtained coincide with the known tabular formulas.

Keywords: Hankel integral transform, Mittag-Leffler type function, Bessel function, Fox function, degenerate hypergeometric function.

REFERENCES

1. Ditkin V.A., Prudnikov A.P. *Integral'nyye preobrazovaniya i operatsionnoye ischisleniye* [Integral transforms and operational calculus]. M.: Fizmatlit, 1961. 524 p.

2. Lebedev N.N. *Spetsial'nye funktsii i ikh prilozheniya* [Special functions and their applications]. M.: Fizmatlit, 1963. 360 p.

3. Kuznetsov D.S. *Spetsial'nye funktsii* [Special functions]. M.: Vysshaya shkola. 1965. 424 p.

4. Dzhrbashyan *M.M. Integral'nye preobrazovaniya i predstavleniya funktsiy v kompleksnoy oblasti* [Integral Transforms and Representations of Functions in the Complex Domain]. M.: Nauka, 1966. 672 p.

5. Marichev O. I. *Metod vychisleniya integralov ot spetsial'nykh funktsiy (teoriya i tablitsy formul)* [Handbook of integral transforms of higher transcendental functions: theory and algorithmic tables]. Mn.: Science and technology, 1978. 312 p.

6. Prudnikov A.P., Brychkov Iu.A., Marichev O.I. *Integraly i ryady. Spetsial'nyye funktsii* [Integrals and Series. Special Functions]. M.: Fizmatlit, 1983. 752 p.

7. *Kilbas A.A., Saigo M.* H-Transforms. Theory and Applications. Chapman and Hall/CRC. 2004. 389 p.

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