

ON SOME INTEGRO-DIFFERENTIAL OPERATORS IN THE CLASS OF HARMONIC FUNCTIONS AND THEIR APPLICATIONS

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We study properties of integro-differential operators generalizing the operators of the Riemann-Liouville and Caputo fractional differentiation in the class of harmonic functions. The properties obtained are applied to examine some local and nonlocal boundary value problems for the Laplace equation in the unit ball.

Key words and phrases: Laplace equation, Riemann-Liouville operator, Kaputo operator, nonlocal boundary value problem.

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