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APPLICATIONS OF FINITE DOUBLE MELLIN INTEGRAL TRANSFORM

S. M. KHAIRNAR[1], R. M. PISE[2] AND J. N. SALUNKE[3]

[1]Deparment of Engineering Sciences,Maharashtra Academy of Engineering,
Alandi - 412105, Pune, India.
[2]Department of Mathematics, (A.S.&H.)R.G.I.T. Versova, Andheri (W),Mumbai-53, India
[3]Department of Mathematics,North Maharastra University,Jalgaon, India

Abstract

The aim of this paper is by using double Laplace operators we define the Finite Double Mellin integral transform (FDMIT). This transform is applicable in the finite region. We see how double Laplace operators can be used to simplify its analogous properties like linearity property, scaling property and power property. We have also discusssed inversion theorem, convolution theorem, parsevals theorem, first and second property theorems and other theorems for the FDMIT in the range $0 \le x \le a$ .and $0 \le y \le b$. Also we obtain FDMIT of derivatives of f(x, y) w. r. t. x and y respectively. We have also showed how to solve Laplace equation (Cartesian form) and one dimensional heat and wave equations.

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