

## **APPLICATIONS OF DISTRIBUTIONAL FINITE MELLIN INTEGRAL TRANSFORM IN THE RANGE $(0, a)$**

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### **Abstract**

In this paper we study Finite Mellin Integral Transform which can be a technique for solving boundary and initial value problems. This Transform is applicable in the finite interval  $(0, a)$  where  $a$  is positive. We attempt to understand how Laplace operator can be used to find the relations with the Finite Mellin Integral Transform in distributions. The main aim of our work is to give a technique from Laplace Transform that turns out to be valid for the Finite Mellin Integral Transform in distributions. We discuss Inversion, Convolution, Parsevals Theorem and first shifting and second shifting properties which are holds for the Finite Mellin Integral Transform in the finite interval  $(0, a)$  in distribution,  $a > 0$ . We also studied how Cauchy's differential equation can be solved by this transform and its particular solution is illustrated using Matlab..

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