Some applications of the multi-dimensional fractional order for the Riemann-Liouville derivative

ABSTRACT

In this paper, the aim of this work is to study theorem for the one-dimensional space-time fractional deriative, generalize some function for the one-dimensional fractional by table represents the fractional Laplace transforms of some elementary functions to be valid for the multi-dimensional fractional Laplace transform and give the definition of the multi-dimensional fractional Laplace transform. This study includes that, dedicate the one-dimensional fractional Laplace transform for functions of only one independent variable and develop of the one-dimensional fractional Laplace transform to multi-dimensional fractional Laplace transform based on the modified Riemann-Liouville derivative.

Keyword: One-dimensional fractional; Multi-dimensional fractional; Riemann-Liouville derivative