Solutions of linear multi-dimensional fractional order Volterra integral equations

ABSTRACT

In this paper, the aim studying this topic is to extend the study of the one-dimensional fractional to the multi-dimensional fractional integral equations and their applications. The multi-dimensional Laplace transform method (M.D.L.T.M) is developed to solve multi-dimensional fractional Integrals equations. We used the one-dimensional Laplace transform for solving the fractional integral. The procedure will simply to find the Laplace transform to the equation, to solve the transform of the unknown function. Finally, find the inverse Laplace to obtain our desired solution. The result reveals that the transform method is very convenient and effective.

Keyword: Linear multi-dimensional fractional; Volterra integral equations; Multi-dimensional fractional