

A note on fractional Sumudu transform

Abstract

We propose a new definition of a fractional-order Sumudu transform for fractional differentiable functions. In the development of the definition we use fractional analysis based on the modified Riemann-Liouville derivative that we name the fractional Sumudu transform. We also established a relationship between fractional Laplace and Sumudu duality with complex inversion formula for fractional Sumudu transform and apply new definition to solve fractional differential equations.

Keyword: Fractional derivative; Sumudu transform