

Some remarks on the fractional Sumudu transform and applications

ABSTRACT

In this work we study fractional order Sumudu transform. In the development of the definition we use fractional analysis based on the modified Riemann - Liouville derivative, then we name the fractional Sumudu transform. We also establish a relationship between fractional Laplace and Sumudu via duality with complex inversion formula for fractional Sumudu transform and apply new definition to solve fractional differential equations.

Keyword: Sumudu transform; Fractional differential operator; Mittag-Leffler function