

On the extension of Gamma and associated functions and their roles on the fractional operators

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Abstract

In mathematics, there are several special functions. One of the well known is the Gamma function which is a generalization of the factorial. Later the Gamma function is defined to be an extension of the factorial to real and complex number arguments.

However, in the classical sense functions is not defined for the negative integer thus still it was an open problem to give satisfactory definition for the negative integers. Further the gamma function has some remarkable qualities: For example, it has an infinite number of maxima and minima and it cannot be the solution of a differential equation with algebraic coefficients, see the details [1, 2, 3].

In this study, we present some interesting aspects of Gamma and associated functions for negative values and some of their features of fractional calculus and fractional operators in differential manifold. Some further interesting results are also deduced, see [1, 4, 5].

Keywords : Gamma functions; Associated Gamma Functions; Fractional operators; Revised Riemann-Liouville fractional operator.

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