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A STUDY OF SOME INTEGRAL TRANSFORMS ON Q FUNCTION

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Abstract: The present paper deals with the new generalization of a Q function using generalized Mittag-Leffler function .The Mittag-Leffler function arises usually in the solution of fractional order differential equation and fractional order integral equations. Various Integral Transforms such as Laplace transform, Fourier transform, Euler beta transform and Whittaker transform with their several special cases are obtained to illustrate our main results.

Keywords and Phrases: Mittag-Leffler function; Generalized Mittag-Leffler function; Laplace transform; Fourier transform; Euler beta transform; Whittaker transform.

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1. Introduction

During the last twenty years Mittag-Leffler function has come into eminence after it was discovered by Mittag-Leffler who was a Swedish mathematician. And now it has a vast use in solving the problems related to physics, biology, engineering, and earth sciences and more. Mittag-Leffler function has applications in applied problems, such as fluid flow, rheology and diffusive transport akin to diffusion, electric networks, probability, and statistical distribution theory.
Besides this, The Mittag-Leffler function appears in the solution of certain boundary value problems involving fractional Integral-differential equations of Volterra