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A CERTAIN CLASS OF MULTIPLE GENERATING FUNCTIONS INVOLVING MITTAG-LEFFLER'S FUNCTIONS

M. Kamarujjama* and M. Khursheed Alam
Department of Applied Mathematics, Z.H. College of Engineering & Technology
Aligarh Muslim University, Aligarh-202002, INDIA
*e-mail : mdkamarujjama@bharatmail.com

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Abstract: A set of certain class of multiple generating function involving Mittag-Leffler's functions E_{α}, $E_{\alpha,\beta}$ and related function $\phi(\alpha,\beta;z)$ of wright is given. Some interesting (known and new) multiple generating functions are also obtained as special cases.

Key Words : Mittag-Leffler's functions and related functions and related function, Bessel's function and Hyper-Bessel function, Hypergeometric function.

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1. Introduction and Definition

In the usual notation, let ${}_pF_q$ denote a generalized hypergeometric function of one variable with p and q parameters (positive integer or zero), defined by [6; p.42(1)].

$$ {}_pF_q\left[\begin{matrix}a_1,a_2,...,a_p;\\ b_1,b_2,...,b_q\end{matrix} z\right] = \sum_{n=0}^{\infty} \frac{(a_1)_n (a_2)_n ...(a_p)_n\, z^n}{(b_1)_n (b_2)_n ...(b_q)_n\, n!} $$

$$ = {}_pF_q\,[a_1,...,a_p;b_1,...,b_q;z] \qquad (1.1) $$

(by $\neq 0,-1,-2,\ldots$, j=1,2,…,q)