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FOURIER BESSEL EXPANSION FOR ALEPH-FUNCTION OF SEVERAL VARIABLES II

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Dedicated to Prof. M.A. Pathan on his 75^{th} ***birth anniversary***

Abstract: In this document, we establish one Fourier Bessel expansion for multivariable Aleph-function, I-function of several variables, Aleph-function of two variables and I-function of two variables.

Keywords: Multivariable Aleph-function, Multivariable I-function, Aleph-function of two variables, Fourier Bessel expansion, I-function of two variables.

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1. Introduction and Preliminaries

The object of this paper is to establish one Fourier Bessel expansion for multivariable Aleph-function, I-function of several variables, Aleph-function of two variables and I-function of two variables. The multivariable Aleph-function generalize the multivariable I-function recently study by C.K. Sharma and Ahmad [3]. The generalized multivariable I-function is an a generalisation of G and H-functions of multiple variables. The multiple Mellin-Barnes integral occuring in this paper will be referred to as the multivariables Aleph-function throughout our present study and will be defined and represented as follows.
We have,

$$\aleph(z_1,...,z_r)=\aleph^{0,n:m_1,n_1,...,m_r.n_r}_{p_i,q_i,\tau_i;R:p_{i(1)},q_{i(1)},\tau_{i(1)};R^{(1)};...;p_{i(r)},q_{i(r)};\tau_{i(r)};R^{(r)}}$$

$$\left(\begin{array}{c|l} z_1 & [(a_j;\alpha_j^{(1)},...,\alpha_j^{(r)})_{1,n}],[\tau_i(a_{ji};\alpha_{ji}^{(1)},...,\alpha_{ji}^{(r)})_{n+1,p_i}]:[(c_j^{(1)},\gamma_j^{(1)})_{1,n_1}], \\ . & \\ . & \\ . & .....[\tau_i(b_{ji};\beta_{ji}^{(1)},...,\beta_{ji}^{(r)})_{m+1,q_i}]:[(d_j^{(1)},\delta_j^{(1)})_{1,m_1}], \\ z_r & \end{array}\right.$$

$$\left.\begin{array}{l} [\tau_{i^{(1)}}(c_{ji^{(1)}}^{(1)},\gamma_{ji^{(1)}}^{(1)})_{n_1+1,p_i^{(1)}}];...;;[(c_j^{(r)},\gamma_j^{(r)})_{1,n_r}],[\tau_{i^{(r)}}(c_{ji^{(r)}}^{(r)},\gamma_{ji^{(r)}}^{(r)})_{n_r+1,p_i^{(r)}}] \\ [\tau_{i^{(1)}}(d_{ji^{(1)}}^{(1)},\delta_{ji^{(1)}}^{(1)})_{m_1+1,q_i^{(1)}}];...;;[(d_j^{(r)},\delta_j^{(r)})_{1,m_r}],[\tau_{i^{(r)}}(d_{ji^{(r)}}^{(r)},\delta_{ji^{(r)}}^{(r)})_{m_r+1,q_i^{(r)}}] \end{array}\right)$$