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A PAIR OF UNSYMMETRRICAL FOURIER KERNELS INVOLVING *I*-FUNCTIONS

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Abstract: In the present paper an attempt has been made to show that I-function and a finite sum of H-functions form a pair of unsymmetrical Fourier kernels under a specified set of conditions. The reciprocity has been established by the method of mean square convergence. In addition, a set of sufficient conditions for uniform convergence of the I-function has also been obtained as a concomitant result. Further, result obtained by Kesarwani [6,7] for unsymmetrical Fourier kernels follow as special cases.

Keywords and Phrases: Unsymmetrical Fourier kernels, H-function, I-function, Mellin transform
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1. Introduction

The functions $K_1(x)$ and $K_2(x)$ are said to form a pair of Fourier kernels, if the reciprocal equations

$$f(x) = \int_0^\infty K_1(xy)g(y)\,dy \tag{1.1}$$

and

$$g(x) = \int_0^\infty K_2(xy)f(y)\,dy \tag{1.2}$$

are simultaneously satisfied. The kernels are said to be symmetrical if $K_1(x) = K_2(x)$ and unsymmetrical if $K_1(x) \neq K_2(x)$. The Fourier kernels satisfying equations (1.1) and (1.2) have been obtained from time to time by various researchers. Fox [1] obtained G and H-functions under some restrictions as symmetric Fourier