

**CERTAIN HYPERGEOMETRIC GENERATING
FUNCTIONS INDUCED BY THE WORK
OF BRAFMAN AND SHIVELY**

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Abstract: In this paper, we obtain three hypergeometric generating relations associated with Kampé de Fériet double hypergeometric functions, by means of Gauss' quadratic transformation, Whipple's quadratic transformation, Kummer's first transformation and Series rearrangement technique. Some special cases are also discussed.

Keywords and Phrases: Hypergeometric functions; Series rearrangement technique; Appell function; Jacobi polynomials; Khandekar's generalized Rice polynomials.

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1. Introduction and Preliminaries

In our investigations, we shall use the following standard notations:

$\mathbb{N} := \{1, 2, 3, \dots\}$; $\mathbb{N}_0 := \mathbb{N} \cup \{0\}$; $\mathbb{Z}_0^- := \mathbb{Z}^- \cup \{0\} = \{0, -1, -2, -3, \dots\}$.

The symbols \mathbb{C} , \mathbb{R} , \mathbb{N} , \mathbb{Z} , \mathbb{R}^+ and \mathbb{R}^- denote the sets of complex numbers, real numbers, natural numbers, integers, positive and negative real numbers respectively.

Pochhammer symbol

The Pochhammer symbol $(\alpha)_p$ ($\alpha, p \in \mathbb{C}$) [14, p.22 eq(1), p.32 Q.N.(8) and Q.N.(9)], see also [18, p.23, eq(22) and eq(23)], is defined by

$$(\alpha)_p := \frac{\Gamma(\alpha + p)}{\Gamma(\alpha)}$$