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TRANSFORMATION FORMULAE FOR POLY-BASIC HYPERGEOMETRIC SERIES

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Abstract: In this paper, an identity has been established by making use of Bailey's transform. Using certain known summation formulae and the identity established herein, interesting transformation formulae for poly-basic hypergeometric series have been established.

Keywords and Phrases: Identity, Bailey transform, summation formula, transformation formula, basic hypergeometric series, poly-basic hypergeometric series.

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1. Introduction, Notations and Definitions

Here, we shall adopt the following notations and definitions. The q-rising factorial is defined as, for $|q| < 1$,

$$(a;q)_n = (1-a)(1-aq)...(1-aq^{n-1}), \qquad n \geq 1, \tag{1.1}$$

$$(a;q)_0 = 1, \tag{1.2}$$

$$(a;q)_\infty = \prod_{r=0}^{\infty}(1-aq^r) \tag{1.3}$$

and

$$(a_1, a_2, a_3, ..., a_r; q)_n = (a_1;q)_n(a_2;q)_n...(a_r;q)_n. \tag{1.4}$$