

**BASIC ANALOGUE OF STIELTJES TRANSFORM AND ITS
PROPERTIES**

Sunil Singh and Mohmmad Shahjade*

Department of Mathematics,
Dr. Homi Bhabha State University,
The Institute of Science, Mumbai - 32, INDIA

E-mail : sunilsingh@iscm.ac.in

*Department of Mathematics,
MANUU Poly. 8th Cross, 1st Stage,
3rd Block, Nagarbhavi, Bangalore - 72 INDIA

E-mail : mohammadshahjade@gmail.com

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Abstract: In this paper, basic analogue of Stieltjes transform has been established. Properties of basic Stieltjes transform have been also discussed.

Keywords and Phrases: Stieltjes transform, Gauss's hypergeometric series, basic hypergeometric series, ordinary binomial theorem, basic binomial theorem.

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1. Introduction, Notations and Definitions

Gaussian hypergeometric series is defined as,

$${}_2F_1 [a, b; c; z] = \sum_{n=0}^{\infty} \frac{(a)_n (b)_n z^n}{(c)_n n!}, \quad (1.1)$$

where $(a)_n = a(a+1)\dots(a+n-1) = \frac{\Gamma(a+n)}{\Gamma(a)}$, and $(a)_0 = 1$.

For the convergence of the series (1.1), $|z| < 1$ is needed.