Dilip Kumar,
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Recent Advances in Mathematical Analysis and their Applications

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A quick survey of the bicomplex integral transforms and their applications

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Abstract: Various authors have defined a number of the integral transforms in the bicomplex space. This paper presents a review of the research on the bicomplex integral transformations. These transformations' varied applications are also highlighted here. The formula for the bicomplex version of the generalized Stieltjes transform been derived in light of recent advancements in the integral transforms in bicomplex space. Its basic operational properties are also addressed.

Keywords: Bicomplex numbers, integral transform, bicomplex Stieltjes transform.

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1 Introduction

For a long time, bicomplex numbers have been investigated, and a lot of work has been done in this area. Between 1848 and 1850, Cockle [1, 2] introduced *Tessarines*, after which Segre [3] introduced bicomplex numbers.

Many bicomplex number properties have been identified. Researchers have been studying the various algebraic and geometric features of bicomplex numbers, as well as their applications, for the past few years (see, e.g. [4, 5, 6, 7, 8, 9]). In the recent developments, efforts have been