DIFFERENCE DOUBLE SEQUENCES OF BI-COMPLEX NUMBERS[*]

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Abstract

In this article, we have introduced the notion of convergence of difference double sequences in Pringsheim's sense, difference null in Pringsheim's sense, bounded difference, bounded convergence difference, bounded null difference, regular convergence difference and regular null difference double sequences of bi-complex numbers. We have proved that these are linear spaces. With the help of the Euclidean norm defined on bi-complex numbers, we have established their different algebraic and topological properties, as well as some of their geometric properties. Suitable examples have been discussed to support the introduction of these classes of sequences and during the investigation of their properties for failure cases.

1   Introduction

In 1892, Segre [15] introduced the bi-complex numbers. The most comprehensive study of bi-complex numbers is done by Price [12]. Later on, Wagh

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