ON GENERALIZED η-DUALS OF SOME SEQUENCE SPACES

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Abstract: P. Chandra and B.C. Tripathy [5] have generalized the notion of the Köthe-Toeplitz dual of sequence spaces on introducing the concept of η-dual of order r for $r \geq 1$ of sequence spaces.
Ansari and Gupta [3] have generalized the notion of the Köthe-Toeplitz dual of sequence spaces on introducing the concept of η-dual of order r for $0 < r \leq 1$.
We have defined and determined the η-dual of some sequence spaces for $r > 0$ and have established their perfectness in relation the η-dual for $r > 0$.

Keywords and Phrases: Dual space, perfect space, η dual, convergent sequence, l_r space, bounded variation, cesaro summable sequence.

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1. Introduction

The idea of dual sequence space was introduce by Köthe and Toeplitz [10], whose main result with α-duals. An account of the duals of sequence spaces is found in Köthe [11]. The different type of duals of sequence spaces are found in cook [2]. Maddox [4], Kamthan and Gupta and many others. In this paper $w, c, c_0,\ l_s,\ l_p,$ $l_\infty,\ v,\ v_\infty,\ b_v,\ w_p$ denoted the space of all, convergent, null absolutely summable, p-absolutely summable, bounded convergent series, series with bounded partial sum, bounded variation sequence, p-Cesaro summable sequence spaces respectively.

The α-dual of a subset E of w is defined as

$$E^\alpha = \{\langle a_n \rangle \in w : (a_n x_n) \in l_1 \forall (x_n) \in E\}$$