

ON GENERALIZED η -DUALS OF SOME DOUBLE SEQUENCE SPACES

Seraj Ahmed Khan, Ashfaque A. Ansari and Nafis Ahmad*

Department of Mathematics & Statistics,
D.D.U. Gorakhpur University, Gorakhpur-273009, (U.P.) India

*Department of Mathematics,
Shibli National P.G. College, Azamgarh (U.P.) India
E-mail:- 786naksl@gmail.com

Dedicated to Prof. M.A. Pathan on his 75th birth anniversary

Abstract: Ansari and Gupta [1] have generalized the η -dual of some double sequence spaces for $0 < r \leq 1$ and have established their perfectness in relation to η -dual of order r , $0 < r \leq 1$.

We have defined and determined the η -duals of some double sequence spaces of order r , for $r > 0$.

Keywords: η -dual, dual space, perfect spaces, l_r -space, convergent sequence, bounded variation.

Mathematics Subject Classification: 40A05, 40B05, 46A45.

1. Introduction

The notion of double sequences is found Browmich [2]. Hardy [4] introduced the notion of bounded variation double sequences. Later on it was investigated by Moricz [12], Tripathy [12], Basarir [13], Patterson [14], Sonalcan [13] and many others.

Köthe and Toeplitz [8] introduced the idea of dual sequence space, whose main result concerned with η -duals. Later on it was studies by P. Chandra and B.C. Tripathy [15], Cook [4], Kamtham and Gupta [6], Maddox [10] and many other. P. Chandra and B.C. Tripathy [15] have generalized the notation of α -duals on introducing the notation of η - duals of order r , for $r \geq 1$ of sequence spaces and Ansari & Gupta [1] have generalized the notion of α -duals on introducing the notion of η - duals of order r , for $0 < r \leq 1$ of sequence spaces.