ON SOME DIFFERENCE SEQUENCE SPACES OF WEIGHTED MEANS AND COMPACT OPERATORS

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Abstract. In the present paper, by using generalized weighted mean and difference matrix of order \(m\), we introduce the sequence spaces \(X(u,v,\Delta^m)\), where \(X\) is one of the spaces \(\ell_\infty, c\) or \(c_0\). Also, we determine the \(\alpha\)-, \(\beta\)- and \(\gamma\)-duals of those spaces and construct their Schauder bases for \(X \in \{c, c_0\}\). Moreover, we give the characterization of the matrix mappings on the spaces \(X(u,v,\Delta^m)\) for \(X \in \{\ell_\infty, c, c_0\}\). Finally, we characterize some classes of compact operators on the spaces \(\ell_\infty(u,v,\Delta^m)\) and \(c_0(u,v,\Delta^m)\) by using the Hausdorff measure of noncompactness.

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