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DOMAIN OF THE TRIPLE BAND MATRIX ON SOME MADDOX'S SPACES

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ABSTRACT. The sequence spaces $\ell_\infty(p)$, $c(p)$ and $c_0(p)$ were introduced and studied by Maddox [Proc. Cambridge Philos. Soc. 64 (1968), 335–340]. In the present paper, we introduce the sequence spaces $\ell_\infty(B,p)$, $c(B,p)$ and $c_0(B,p)$ of non-absolute type which are derived by the triple band matrix $B(r,s,t)$ and is proved that the spaces $\ell_\infty(B,p)$, $c(B,p)$ and $c_0(B,p)$ are paranorm isomorphic to the spaces $\ell_\infty(p)$, $c(p)$ and $c_0(p)$; respectively. Besides this, the α-, β- and γ-duals of the spaces $\ell_\infty(B,p)$, $c(B,p)$ and $c_0(B,p)$ are computed and the bases of the spaces $c(B,p)$ and $c_0(B,p)$ are constructed. Finally, the matrix mappings from the sequence spaces $\lambda(B,p)$ to a given sequence space μ and from the sequence space μ to the sequence space $\lambda(B,p)$ are characterized, where $\lambda \in \{\ell_\infty, c, c_0\}$.

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