Kolk, Enno

Matrix maps into the space of statistically convergent bounded sequences. (English)

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Proc. Est. Acad. Sci., Phys. Math. 45, No. 2-3, 187-192 (1996); corrigendum ibid. 46, No. 1-2, 150 (1997).

A sequence space is any linear subspace of the vector space of all complex-valued sequences. For two sequence spaces X and Y, denote by (X,Y) the set of all doubly-infinite matrices $A=(a_{nk})$ such that, for each $x\in X$, $A_nx\equiv\sum_{k=1}^{\infty}a_{nk}x_k$ exists and the sequence $(A_nx)\in Y$. For such a matrix A, a sequence x is A-statistically convergent to ℓ if, for every $\varepsilon>0$, $\lim_{n\to\infty}\sum_{k\in V}a_{nk}=0$, where $V=\{k:|x_k-\ell|\geq\varepsilon\}$. This paper characterizes the matrix class (X,Y_1), where Y_1 is the space of all uniformly-bounded A-statistically convergent sequences and X is a separable BK-space (i.e., a Banach sequence space with continuous coordinate functionals) with a countable fundamental set. The special cases where X is the space of all convergent sequences and where $X=\ell^p$, $p\geq 1$, are considered.

Reviewer: R.J.Tomkins (Regina)

MSC:

40C05 Matrix methods for summability
40A05 Convergence and divergence of series and sequences

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matrix methods; statistical convergence; sequence space; convergent sequences; Banach sequence space