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8. Analysis

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Compactness of operators acting in the Lorentz and Orlicz Sequence Spaces

Let $L(X,Y)$ be the Banach space of all bounded linear operators from X to Y, and let $K(X,Y)$ be the subspace of compact operators. Some versions of the classical *Pitt's theorem (if $p > q$, then $K(\ell_p,\ell_q) = L(\ell_p,\ell_q)$)* for subspaces of Lorentz and Orlicz sequence spaces are established. For example, the following theorem is proved. *Let X and Y be closed subspaces of the Lorentz sequence spaces $d(v,p)$ and $d(w,q)$, respectively; if $p > q$ and $w \notin \ell_{p/(p-q)}$, then $K(X,Y) = L(X,Y)$.* Part of these results is joint work with E. Oja.

Reference: J. Ausekle and E. Oja, Pitt's theorem for the Lorentz and Orlicz sequence spaces, *Mat. Zametki* **61** (1997), 18–25 (Russian); English transl. in *Math. Notes* **61** (1997), 16–21.