

COMPACTNESS DEFINED BY ℓ_p -SPACES

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Let $1 \leq p < \infty$ and $1 \leq r \leq p^*$, where p^* is the conjugate index of p . We say that a linear operator T from a Banach space X to a Banach space Y is (p, r) -compact if the image of the unit ball $T(B_X)$ is contained in $\{\sum_n a_n y_n : (a_n) \in B_{\ell_r}\}$ (where $(a_n) \in B_{c_0}$ if $r = \infty$) for some p -summable sequence $(y_n) \in \ell_p(Y)$.

The p -compact operators, studied recently by J.M. Delgado, A.K. Karn, C. Piñeiro, E. Serrano, D.P. Sinha, and others, are precisely the (p, p^*) -compact operators.

We describe the quasi-Banach operator ideal structure of the class of (p, r) -compact operators and how it relates to some other known operator ideals.

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REFERENCES

- [1] K. AIN, R. LILLEMETS, AND E. OJA, *Compact operators which are defined by ℓ_p -spaces*, Quaest. Math. **35** (2012) 145–159.

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