

ON INTERPOLATION OF TWO MEASURES OF
NON-COMPACTNESS ASSOCIATED TO BANACH
OPERATOR IDEALS

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ABSTRACT. We consider two measures of non-compactness, $\chi_{\mathcal{A}}$ and $n_{\mathcal{A}}$, associated to a general Banach operator ideal \mathcal{A} . These measures were introduced by Delgado and Piñeiro [2] and they are motivated by the notions of surjectively \mathcal{A} -compact operator and injectively \mathcal{A} -compact operator, defined by Carl and Stephani [1] and by Stephani [4], respectively. When \mathcal{A} is in particular taken as the ideal of all bounded (linear) operators, the concepts of surjectively \mathcal{A} -compact operator and injectively \mathcal{A} -compact operator coincide with the notion of compact operator.

We are specially interested in the study of the behaviour under interpolation of $\chi_{\mathcal{A}}$ and $n_{\mathcal{A}}$ when \mathcal{A} is an arbitrary Banach operator ideal. Specifically, in this talk we present interpolation formulas for $\chi_{\mathcal{A}}$ and $n_{\mathcal{A}}$ in the cases in which one of the Banach couples reduces to a single Banach space. From these estimates for the measures $\chi_{\mathcal{A}}$ and $n_{\mathcal{A}}$, we establish results on interpolation of surjectively \mathcal{A} -compact operators and injectively \mathcal{A} -compact operators, respectively. As a consequence, by applying these results to some concrete Banach operator ideals, we deduce interpolation theorems on compact operators, p -compact operators and quasi p -nuclear operators.

This talk is based on a joint work with Mieczysław Mastyło [3].

REFERENCES

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