CLASS OF OPERATORS WITH SUPERIORLY CLOSED NUMERICAL RANGES

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ABSTRACT. The aim of this paper is to introduce a class of operators acting on a complex Hilbert space. This class contains, among others, nonzero compact operators. We give a characterization of this class in term of generalized numerical ranges and deduce that if $A$ is a compact operator, then $w(A) = |\lambda|$ with $\lambda \in W(A)$, where $W(A)$ and $w(A)$ are the numerical range and the numerical radius of $A$, respectively. We will give some new necessary conditions for an operator to be compact. We also show some light on the generalized numerical ranges of the elementary operators $\delta_{2,A,B}$ and $M_{2,A,B}$.

REFERENCES


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