Numerical ranges of Banach space operators

Muneo Chō

Department of Mathematics, Kanagawa University
e-mail: chiyom01@kanagawa-u.ac.jp

Abstract

Let $\mathcal{X}$ be a complex Banach space and $\mathcal{X}^*$ be the dual space of $\mathcal{X}$. For a bounded linear operator Ton $\mathcal{X}$, let the numerical range $V(T)$ of T is given by

$$V(T) = \{f(Tx) \,:\, (x, f) \in \Pi\},$$

where Π is defined by $\Pi = \{\, (x, f) \in X \times \mathcal{X}^* \,:\, \|f\| = f(x) = \|x\| = 1 \,\}$.

In this talk I'll introduce properties of numerical ranges of T.

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