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On the Numerical Range of Operators on some Special Banach Spaces

The numerical range of a bounded linear operator on a complex Banach space need not be convex unlike that on a Hilbert space. The aim of this paper is to study operators T on ℓ_p^2 for which the numerical range is convex. We also obtain a nice relation between $V(T)$ and $V(T^t)$ considering $T \in \mathbb{L}(\ell_p^2)$ and $T^t \in \mathbb{L}(\ell_q^2)$, where T^t denotes the transpose of T and p and q are conjugate real numbers, i.e., $1 < p, q < \infty$ and $\frac{1}{p} + \frac{1}{q} = 1$.

Keywords: Semi-inner-product, numerical range, convex set.

MSC: 47A12; 46A55.