REFLEXIVITY AND NORM ATTAINING OPERATORS BANACH SPACES AND THEIR APPLICATIONS

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ABSTRACT. Let X and Y be Banach spaces, and let $T, K : X \to Y$ be bounded, resp. compact linear operators. We investigate the relation between the reflexivity of X and Y and the question of whether the inequality $\|T\| < \|T + K\|$ implies that $T + K$ attains its norm. This is related to the following: A pair of Banach spaces (X, Y) is said to have the *weak maximizing property* if for any bounded linear operator $T : X \to T$, the existence of a non-weakly null maximizing sequence for T implies that T attains its norm.

If time permits we will also describe related questions for homogeneous polynomials.

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