

M-IDEALS OF COMPACT OPERATORS AND NORM ATTAINING OPERATORS

MANWOOK HAN

A closed subspace J of a Banach space X is called an M-ideal if $X^* = J^* \oplus_1 J^\perp$. It is clear that if X is the ℓ_∞ -sum of J and its complement, then J is an M-ideal. However, the converse does not hold in general. In particular, the space $\mathcal{L}(X, Y)$ of linear operators cannot be represented as such an ℓ_∞ -sum with the space $\mathcal{K}(X, Y)$ of compact operators if $\mathcal{K}(X, Y)$ is proper. Nevertheless, $\mathcal{K}(X, Y)$ is an M-ideal for certain pairs of Banach spaces (X, Y) . In this talk, I will introduce various known properties that hold in these cases and present new results that connect this study to norm-attaining operators.

DEPARTMENT OF MATHEMATICS, CHUNGBUK NATIONAL UNIVERSITY, CHEONGJU, CHUNGBUK 28644, REPUBLIC OF KOREA