Reflexivity of extensions of operators

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Abstract

Let $\mathcal{A}$ be a weakly closed algebra of bounded linear operators on a Hilbert space H. Its lattice, $Lat\mathcal{A}$, its the set of all closed subspaces of H that are left invariant by every element of $\mathcal{A}$. The set of operators that leave invariant every space in $Lat\mathcal{A}$ is denoted $AlgLat\mathcal{A}$. The algebra $\mathcal{A}$ is called reflexive si $\mathcal{A} = AlgLat\mathcal{A}$. An operator T is called reflexive if the weakly closed unital algebra it generates, $W(T)$, is reflexive.
The first work about reflexivity of operators is due to Donald. Sarason who showed that every normal operator is reflexive (1966). The aim of this work is to study the reflexivity of operators T of the form

$$\begin{pmatrix} A & X \\ 0 & R \end{pmatrix}.$$

where A is reflexive and R is algebraic.