

Boğaziçi MATH COLLOQUIUM

Local Commutants and Ultrainvariant Subspaces

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Abstract:

For an operator A on a complex Banach space X and a closed subspace M of X , the local commutant of A at M is the set $C(A;M)$ of all operators T such that $TAx = ATx$, for all vectors x in M . It is clear that $C(A;M)$ is a closed space of operators, however, it is not an algebra, in general. We will show that $C(A;M)$ is an algebra if and only if the subspace M_A of all those vectors x such that $TAx = ATx$, for all T in $C(A;M)$, is ultrainvariant, that is, invariant for every operator in $C(A;M)$.

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