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## Locally algebraic linear operators and their centralizers



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## ABSTRACT

In this paper, using finite topologies defined on the algebra of linear operators, we investigate centralizers and double centralizers of locally algebraic linear operators. In particular, for an arbitrary locally algebraic operator  $A$ , we establish the equality  $CC(A) = \overline{F[A]}$  and the conditions under which the equality  $CC(A) = C(A)$  is fulfilled. Besides, in the case of an algebraically closed field, we describe minimal locally algebraic linear operators.

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## 1. Introduction

Let  $M$  be the right  $R$ -module. For any finite subset  $X$  of the module  $M$ , let us denote by  $U_X$  the set  $\{f \in \text{End}(M) \mid f(X) = 0\}$ . Then a *finite topology* on  $\text{End}(M)$  is defined as a topology whose base consists of all sets of the form  $f + U_X$ , where  $f \in \text{End}(M)$ , and  $X$  is a finite subset of  $M$ . The finite topology on  $\text{End}(M) \subseteq M^M$  is a topology

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