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On Centralizers of Elements in the Lie Algebra of the Special Cremona Group $SA_2(k)$

We give a description of maximal abelian subalgebras and centralizers of elements in the Lie algebra $sa_2(k) = \{D \in \operatorname{Der} k[x,y] \mid \operatorname{div} D = 0\}$ over an algebraically closed field k of characteristic 0. This description is given in terms of closed polynomials.

Keywords: Lie algebra, derivation, closed polynomial maximal abelian subalgebra.

MSC: 17B65, 17B05