

Relatively free algebras of Lie nilpotent associative algebras

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In this talk, we consider the relatively free algebra of (finite) rank m in the variety of Lie nilpotent associative algebras of index p over a field of characteristic zero. We describe an explicit minimal basis for its ideal of polynomial identities when $p = 3$ and $p = 4$, for all m , except for the case $m = 3$ and $p = 4$. In the general case, we discuss about the minimal k such that the product of k commutators is an identity for such relatively free algebras or rank m .

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