On left nilalgebras of left nilindex four satisfying an identity of degree four

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We extend the concept of commutative nilalgebras to commutative algebras which are not power associative. We shall study commutative algebras A over fields of characteristic ? 2, 3 which satisfy the identities x(x(xx)) = 0 and ?{x(y(xx)) - x(x(xy))} + ?{y(x(xx)) - x(x(xy))} = 0. In these algebras the multiplication operator was shown to be nilpotent by Correa, Hentzel and Labra [2]. In this paper we prove that for every x ? A we have A(A((xx)(xx))) = 0. We prove that there is an ideal I of A satisfying AI = IA = 0 and A/I is power associative. © World Scientific Publishing Company.