Selected Matches for: Items authored by or related to Hentzel, Irvin Roy

Citations

From References: 1

From Reviews: 0

MR2293595 (2007m:17044)
Hentzel, I. R.(1-IASU); Peresi, L. A.(BR-SPL)
The nucleus of the free alternative algebra. (English summary)
Experiment. Math. 15 (2006), no. 4, 445--454.
17D05 (17D10)
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The defining axioms for an alternative algebra \$A\$ are the left and right alternative laws: \$\$(x,x,y)=0=(y,x,x),\$\$ where \$(x,y,z)\coloneq(xy)z-x(yz)\$ is the associator of \$x,y,z\in A\$. Consequently, in an alternative algebra, the associator is an alternating function of its arguments. Therefore, the nucleus of an alternative algebra \$A\$ is the set \$\$N(A)={p\in A\vert (p,x,y)=0 \quad \forall x,y\in A}.\$\$ In this paper the authors determine, using computer procedures, a basis for the elements of degree \$5\$ in the nucleus of a free alternative algebra \$A\$ over the field \${\Bbb Z}/103{\Bbb Z}\$ (they work with the prime number 103 because it is only one byte long and it is bigger than the degree of any identity that appears). In any case, the method they use is valid for characteristic zero or a large-enough prime). Moreover, they prove that there are no elements of lower degree (less than 5) in $N(A)$.

Reviewed by Miguel A. Gómez Lozano

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Hall/CRC, 2006. MR2203706 (2006i:17046)

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This list reflects references listed in the original paper as accurately as possible with no attempt to correct error.

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MR2203706 (2006i:17046)
Hentzel, Irvin Roy(1-IASU); Peresi, Luiz Antonio(BR-SPL-DM)
Central elements of minimal degree in the free alternative algebra. (English summary) *Non-associative algebra and its applications,* 195--204,
Lect. Notes Pure Appl. Math., 246, *Chapman & Hall/CRC, Boca Raton, FL,* 2006.
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The authors use the representation technique from [I. R. Hentzel, in *Computers in nonassociative rings and algebras (Special session, 82nd Annual Meeting Amer. Math. Soc., San Antonio, Tex., 1976)*, 13--40, Academic Press, New York, 1977; MR0463251 (57 #3204)] to compute central elements of minimal degree in the free alternative algebra. In particular, they confirm V. T. Filippov's conjecture [Algebra Log. **38** (1999), no. 5, 613--635, 640; MR1766705 (2001i:17046)] that 7 is the minimal degree of such nonzero elements. All the central elements of degree 7 are shown to be derived from four explicit elements, two of which were already known from [V. T. Filippov, op. cit.] and [I. R. Hentzel and L. A. Peresi, Comm. Algebra **31** (2003), no. 3, 1279--1299; MR1971063 (2004e:17028)]. Three of these elements are Mal•tsev admissible and hence produce nonzero annihilators in the free

Mal•tsev algebra M. In particular, such is the skew-symmetric element m from [I. R. Hentzel and L. A. Peresi, op. cit.].

The authors also mention that I. P. Shestakov [J. Algebra Appl. **2** (2003), no. 4, 451--461; MR2020951 (2004h:17031)] proved that m is just the initial element in an infinite family of skew-symmetric annihilators of M. Moreover, Shestakov and N. Zhukavets [Comm. Algebra **34** (2006), no. 4, 1319--1344] completed this family to the base of skew-symmetric annihilators of M and showed that all skew-symmetric annihilators of M lie in the T-subspace generated by m.

{For the entire collection see MR2203689 (2006h:17002).}

Reviewed by Natalia Zhukavets