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Methods of formal language, genetics and ternary for non-associative algebras I. (English, Polish summaries)

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The paper is poorly written, with broken English, and “is the first of papers written under the same title and detailed study including proofs of some of theorems will be given in a forthcoming paper”. The very first sentence of the paper reads “In this paper we introduce three methods for non-associative algebras and we discuss a flexible algebra, Jordan algebra and composition algebra.” For a finitely generated algebra $A = R[e_1, \dots, e_n]$ (R is never specified in the paper), a Chomsky algebra $C(A)$ is associated which is defined as follows:

“Definition 1. We take a set of words A_1, A_2, \dots which is called a dictionary. Choosing words A_1, A_2, \dots, A_n ($\in A$), we make a sentence $\{\{A_1, A_2\}, \{A_3, \dots, A_n\}\}$ which is called a Chomsky sentence of A .”

“We choose an algebra A which is generated by e_1, e_2, \dots, e_n over R which is denoted by $A = R[e_1, e_2, \dots, e_n]$. Choosing generators, we make sentences which we call Chomsky sentences of algebra A . Making operations of sum and constant multiplication, we can define an algebra which is called the Chomsky algebra $C(A)$, i.e.,

$$X, Y \in C(A) \Rightarrow \{X, Y\} \in C(A),$$

$$X, Y \in C(A) \Rightarrow X + Y \in C(A),$$

$$\alpha \in R, X \in C(A) \Rightarrow \alpha X \in C(A).”$$

(Some misprints of the paper have been corrected in the above quotes.) The main result of the paper is:

“Theorem 1. Let A be a finitely generated algebra over R , i.e., $A = R[e_1, e_2, \dots, e_n]$ and let $C(A)$ be the Chomsky algebra of A . Then:

- (1) We have the algebraic homomorphism $\Phi: C(A) \rightarrow A$ defined by $(*)$.
- (2) There exists an ideal I such that the following commutative diagram holds:

$$\begin{array}{ccc} \Phi: C(A) & \longrightarrow & A \\ \downarrow & & \parallel \\ \widehat{\Phi}: C(A)/I & \longrightarrow & A \end{array} \quad (\widehat{\Phi} \text{ is an isomorphism).”$$

“The main task of this paper is to describe the ideal I in connection with the Chomsky sentences. This will be given by sentence algebras.” The large number of typos and poor English makes the paper practically unreadable. *Saeed Salehi*