UDC 512

To Chang Theorem. III

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Various multilinear polynomials of Capelli type belonging to a free associative algebra $F\{X \cup Y\}$ over an arbitrary field F generated by a countable set $X \cup Y$ are considered. The formulas expressing coefficients of polynomial Chang $\mathscr{R}(\bar{x}, \bar{y}|\bar{w})$ are found. It is proved that if the characteristic of field F is not equal two then polynomial $\mathscr{R}(\bar{x}, \bar{y}|\bar{w})$ may be represented by different ways in the form of sum of two consequences of standard polynomial $S^{-}(\bar{x})$. The decomposition of Chang polynomial $\mathscr{H}(\bar{x}, \bar{y}|\bar{w})$ different from already known is given. Besides, the connection between polynomials $\mathscr{R}(\bar{x}, \bar{y}|\bar{w})$ and $\mathscr{H}(\bar{x}, \bar{y}|\bar{w})$ is found. Some consequences of standard polynomial being of great interest for algebras with polynomial identities are obtained. In particular, a new identity of minimal degree for odd component of Z_2-graded matrix algebra $M^{(m,m)}(F)$ is given.

Key words: T-ideal, standard polynomial, Capelli polynomial.

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