TRUDY INSTITUTA MATEMATIKI I MEKHANIKI UrO RAN

Vol. 22 No. 1 **2016**

CODIMENSIONS OF VARIETIES OF POISSON ALGEBRAS WITH LIE NILPOTENT COMMUTANTS

Received January 17, 2015

S. M. Ratseev, O. I. Cherevatenko

We study varieties of Poisson algebras defined by the identities $\{x_1, x_2\} \cdot \{x_3, x_4\} = 0$ and $\{\{x_1, x_2\}, \ldots, \{x_{2s+1}, x_{2s+2}\}\} = 0$, $s \geq 1$. For each of the varieties we find a carrier algebra and build a basis of the nth proper polylinear space. We derive exact formulas for exponential generating functions for sequences of codimensions and proper codimensions as well as exact formulas for codimensions and proper codimensions.

Keywords: Poisson algebra, variety of algebras, growth of a variety.

S.M. Ratseev , Cand. Sci. (Phys.-Math.), associate Professor, Ulyanovsk State University, Ulyanovsk, 432017 Russia, e-mail: RatseevSM@mail.ru .

O.I. Cherevatenko , Cand. Sci. (Phys.-Math.), Ilya Ulyanov State Pedagogical University, Ulyanovsk, 432071 Russia, e-mail: chai@pisem.net .

Cite this article as:
S. M. Ratseev, O. I. Cherevatenko. Codimensions of varieties of Poisson algebras with Lie nilpotent commutants, *Trudy Inst. Mat. Mekh. UrO RAN*, 2016, vol. 22, no. 1, pp. 241–244 .