

ORAL COMMUNICATION

Central polynomials and exponential growth of their codimensionsCARLA RIZZO^a^a Institution: University of PalermoE-mail: carla.rizzo@unipa.it**Abstract**

A *central polynomial* of an associative algebra A is a polynomial f in non-commutative variables that takes central values when evaluated in A . In case it vanishes in A , f is called a *polynomial identities* of A , otherwise f is a *proper central polynomial* of A . The study of central polynomials was motivated by a famous conjecture of Kaplansky, in 1956, that later on was proved independently by Formanek and Razmyslov, asserting that the algebra $M_k(F)$ of $k \times k$ matrices has proper central polynomials. For general algebras the existence of central polynomials is not granted. Nevertheless if an algebra has such polynomials, how can one measure how many are there?

The growth of central polynomials for any algebra satisfying a polynomial identity over a field of characteristic zero was started in recent years and in this talk we shall survey the results so far obtained in the setting of ordinary algebras, algebras with involution and algebras graded by a finite abelian group.

Keywords central polynomials; polynomial identities; exponent; codimension growth.

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