



ALGEBRA SESSION

Central polynomials of matrix algebras.¹

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Abstract.

A polynomial $f = f(x_1, \dots, x_n)$ in the free algebra $F\langle X \rangle$ is a central polynomial of an algebra A if it has zero constant term and $f(a_1, \dots, a_n)$ belongs to the center of A , for all $a_1, \dots, a_n \in A$.

The description of the generators of the space of central polynomials $C(M_n(F))$, for $n \geq 2$, is known only in case $n = 2$ [Okhitin, 1988]. In the last years, the interest turned to matrix algebras endowed with additional structures, such as gradings and involutions. For these cases, Brandão and Koshlukov (2007) described the space of graded central polynomials of $M_2(F)$ with non-trivial grading and also the space of central $*$ -polynomials of $M_2(F)$ with transpose and symplectic involutions.

In this talk I will present some results about the space of central polynomials of graded matrix algebras endowed with an involution which preserves the grading. This is a joint work with J. Cruz (UFMG).

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