

SEMINÁRIO DE ÁLGEBRA

On the Graded Algebras with Central Neutral Component.

Antonio Marcos Duarte França

UnB

01/12/2017

14:30 Horas

Auditório do MAT

Abstract.

Let \mathfrak{A} be an associative algebra over a field \mathbb{F} graded by a group G and e be the unit of G . It is well known that if G is finite and \mathfrak{A}_e is a *PI*-algebra, then \mathfrak{A} is also a *PI*-algebra. We have studied a specific case of this result and we have answered to the following question: what can we say about \mathfrak{A} when \mathfrak{A}_e is central in \mathfrak{A} , where \mathfrak{A} is an associative \mathbb{F} -algebra with a G -grading? In this sense, we study the variety generated by G -graded polynomials $[x^{(e)}, y^{(g)}]$ for all $g \in G$, where G is a finite abelian group and $\text{char}(\mathbb{F}) = 0$. We have proved that any G -graded finite dimensional associative algebra over a field of characteristic zero with central neutral component is *GPI*-equivalent to a semiprime algebra. Among other results, we have exhibited a complete description of algebras graded by a finite cyclic group whose neutral component is central.

O presente trabalho é parte da pesquisa de doutorado que está em desenvolvimento, sendo realizada pelo autor no curso Doutorado no PPGMAT - UnB, em Brasília, sob orientação da Profa. Dra. Irina Sviridova.

Keywords: G -graded associative algebra, *GPI*-algebra, graded identities, neutral component, central component.