



APRESENTA:

## On generalized polynomial identities

22/11/2024 às 14h00

*Online via link*

<https://meet.google.com/qdq-kusm-she>

**Prof. Dr. Fabrizio Martino**  
Università degli studi di Palermo





CICLO DE CONFERÊNCIAS 2024  
DO PPGMAT/UFMG

## On generalized polynomial identities

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**Abstract.** Let  $F$  be a field of characteristic zero,  $A$  be an associative  $F$ -algebra and  $F\langle X \rangle$  be the free associative algebra, freely generated over  $F$  by the countable set  $X$  of variables. A non-zero polynomial  $f(x_1, \dots, x_n) \in F\langle X \rangle$  is a polynomial identity of  $A$  if for all  $a_1, \dots, a_n \in A$ ,  $f(a_1, \dots, a_n) = 0$ . The set of all polynomial identities of a given algebra is called  $T$ -ideal of identities and it is denoted by  $\text{Id}(A)$ .

In this talk we generalize the definition of polynomial identity by considering the so-called generalized polynomials, i.e., polynomials belonging to the  $W$ -free algebra, where  $W$  is an unitary algebra. We develop a theory of generalized identities and we present some recent results about generalized  $T$ -ideals and growth of their generalized codimensions. All these results will soon appear in [1] and [2].

## References

- [1] G. Busalacchi, F. Martino, C. Rizzo, *Superalgebras and generalized polynomial identities*, 2024 (preprint)
- [2] F. Martino, C. Rizzo, *The  $2 \times 2$  upper triangular matrix algebra and its generalized polynomial identities*, 2024 (submitted)

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<sup>†</sup>E-mail: [fabrizio.martino@unipa.it](mailto:fabrizio.martino@unipa.it). Website: <https://sites.google.com/site/fabriziomartino90>.