

# Seminar

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**Abstract:** Let  $A$  be an associative algebra over a field  $F$  of characteristic zero. If  $L$  is a Lie algebra over  $F$  acting on  $A$  by derivations, then such an action can be naturally extended to the action of its universal enveloping algebra  $U(L)$  on  $A$ . In this case we refer to  $A$  as algebra with derivations or  $L$ -algebra. With these ingredients at hand one studies the polynomials in non-commuting variables  $x^d = d(x)$ , where  $d \in U(L)$ , vanishing in  $A$ , that is the differential identities of  $A$ . One associates to the  $T_L$ -ideal  $\text{Id}^L(A)$  of all differential identities of  $A$ , in a natural way, a numerical sequence  $c_n^L(A)$ ,  $n = 1, 2, \dots$ , called the sequence of differential codimensions of  $A$  which is the main tool for the quantitative investigation of the differential identities of the algebra  $A$ . Notice that the theory of differential identities is a natural generalization of the classical theory of polynomial identities. Thus, the purpose of this talk is to survey some recent results on the growth of the differential codimensions and comparing them with the classical ones.

- **Dia:** 12 de Julho de 2023, às 16h30min;
- **Local:** Sala de Reuniões, Departamento de Matemática, UBI