

# First Joint Meeting Brazil Italy of Mathematics Special Session: Ring Theory and its Applications

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**Title:** On the Lie structure in associative superalgebras and associative superalgebras with superinvolution Title of your talk

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**Abstract:** It is known that, if we take an associative superalgebra,  $A$ , and we change the product in  $A$  by the superbracket product  $[a, b] = ab - (-1)^{\bar{a}\bar{b}}ba$ , where  $\bar{a}, \bar{b}$  denotes the degree of  $a$  and  $b$ , homogeneous elements in  $A = A_0 + A_1$ , we obtain a Lie superalgebra, denoted by  $A^-$ . Also if  $A$  is an associative superalgebra and has a superinvolution, that is, a graded linear map  $*$  :  $A \rightarrow A$  such that  $a^{**} = a$  and  $(ab)^* = (-1)^{\bar{a}\bar{b}}b^*a^*$ , for  $a, b \in A$  homogeneous elements, the set of skewsymmetric elements,  $K = \{x \in A : x^* = -x\}$ , is a subalgebra of the Lie superalgebra  $A^-$ . In fact, in the classification of the finite dimensional simple Lie superalgebras given by V. Kac in 1977, several types are of this kind. In this talk we give some results about the relationship among the ideals of  $A$  as associative superalgebra and the ideals of  $A^-$  and  $K$  as Lie superalgebras.  
Abstract of the talk