

**Meeting:** 1003, Atlanta, Georgia, SS 23A, AMS Special Session on Representations of Lie Algebras, I

1003-17-1158      **Hayk Melikyan\*** ([melikyan@ncsu.edu](mailto:melikyan@ncsu.edu)), Department of Mathematics and Computer Science,  
NCSU, Durham, NC 27707. *Maximal Subalgebras of Infinite-Dimensional Simple Lie  
Algebras*. Preliminary report.

The description of maximal subsystems of any algebraic system is an essential and important step toward the structural characterization of the system. In the Lie Theory there are a number of well-known problems where the maximal subsystems play crucial role. In this talk we will discuss results concerning maximal subalgebras of the General ( $W_n$ ) and Special ( $S_n$ ) Lie algebras of Cartan type over an algebraically closed field of characteristic zero. In particular, the complete classification of homogeneous maximal subalgebras of these series of Lie algebras is obtained. It is also shown that there are only finitely many conjugacy classes of maximal homogeneous subalgebras in  $W_n$  and  $S_n$  under the group of automorphisms of the respective algebras. Moreover, for each series representatives of the conjugacy classes of maximal subalgebras are explicitly constructed. (Received October 04, 2004)