

Abstract

Cartan's subalgebra H of a Lie algebra L is a nilpotent Lie subalgebra which equals its normalizer in L *i.e.* $N_L(H) = H$. The conjugacy of Cartan's subalgebra is used in the classification of finite dimensional semisimple Lie algebras. More precisely, the different choices of Cartan subalgebras lead to isomorphic root systems.

In this talk, we will discuss the **Conjugacy theorem** which says that any two Cartan's subalgebras H_1 and H_2 of an arbitrary finite dimensional Lie algebra L are conjugate. We will also discuss the proof of the theorem in case of finite dimensional solvable Lie algebras.