

## Counting Nilpotent Ideals of a Borel Subalgebra

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An important part of Lie theory is the study of the structure of Lie algebras. In this talk we will learn some of the basic facts about this structure. We will then count the number of nilpotent ideals of a Borel subalgebra of classical Lie algebras,  $A_n$  and  $C_n$ . It turns out that counting these ideals can be done using combinatorial techniques, in particular, André's reflection. This simple combinatorial method can be used to simplify arguments that normally require a great deal of theory.