

Abstract

Cohomology and Support Varieties

Studying cohomology is hard, but the problem can sometimes be made easier through the introduction of a geometric tool called support varieties. In this talk we'll discuss the support varieties that arise while studying the cohomology of restricted Lie algebras and quantized enveloping algebras (also called quantum groups). It is a somewhat amazing fact that the geometric objects that arise in these contexts admit explicit descriptions in terms of nilpotent matrices. We will look at some easy examples, discuss some recent progress on computing cohomology and support varieties, and mention some open questions. This talk is designed to be accessible to a wide mathematical audience.