



北京理工大学

数学与统计学院学术报告

Annihilator varieties of highest weight modules for classical Lie algebras

报告人：白占强 (苏州大学)

时间：2025 年 7 月 13 日 9: 30—10: 30

地点：文萃楼 E1008

摘要： Let \mathfrak{g} be a semisimple complex Lie algebra. For a $U(\mathfrak{g})$ -module M , let $I(M) = \text{Ann}(M)$ be its annihilator ideal in $U(\mathfrak{g})$ and $J(M)$ be the corresponding graded ideal in $S(\mathfrak{g}) = \text{gr}(U(\mathfrak{g}))$. The zero set of $J(M)$ in the dual vector space \mathfrak{g}^* of \mathfrak{g} is called the annihilator variety of M , which is also called the associated variety of $I(M)$. A two-sided ideal in $U(\mathfrak{g})$ is called primitive if it is the annihilator of an irreducible representation of \mathfrak{g} . In 1985, Joseph proved that the associated variety of a primitive ideal is the Zariski closure of a nilpotent orbit in \mathfrak{g}^* . In this talk, we will give a combinatorial characterization of the annihilator varieties of highest weight modules for classical Lie algebras. We find that our method is much faster than Atlas software after some communications with Vogan.

报告人简介：白占强，苏州大学数学科学学院副教授，主要从事李群表示理论相关的研究工作。本科毕业于四川大学数学基地班，后在香港科技大学获得博士学位。曾先后于中国科学院大学，武汉大学等高校任教。在International Mathematics Research Notices, Science China-Mathematics, Forum Math, Representation Theory, Journal of Pure and Applied Algebra等SCI杂志上发表论文10余篇。