Queen's Algebraic Geometry
— Seminar —

Extensions of modules with bounded weight multiplicities

DIMITAR GRANCHAROV
San Jose State University

Abstract

Let $\mathfrak{g}$ be a finite dimensional simple Lie algebra. In this talk we will focus on the category $\mathcal{B}$ of all bounded weight $\mathfrak{g}$-modules, i.e. those that are direct sum of their weight spaces and have uniformly bounded weight multiplicities. A result of Fernando implies that bounded weight $\mathfrak{g}$-modules exist only for $\mathfrak{g} = \mathfrak{sl}(n)$ and $\mathfrak{g} = \mathfrak{sp}(2n)$. In the second case the category $\mathcal{B}$ has enough projectives if and only if $n > 1$ and is wild if and only if $n > 2$. The case $\mathfrak{g} = \mathfrak{sl}(n)$ is much more complicated as the description of each block $\mathcal{B}^\chi$ of $\mathcal{B}$ depends on the type of the central character χ.

Monday, January 22, 2007
4:30pm – 5:30pm
115 Jeffery Hall