

Queen's Algebraic Geometry — Seminar —

FIRST MAIN THEOREMS FOR INDECOMPOSABLE REPRESENTATIONS OF MODULAR CYCLIC GROUPS

DAVID WEHLAU
Royal Military College

Abstract

Let G denote an algebraic group and V a faithful representation of G . For a positive integer m , we write mV to denote the G -representation $V \oplus V \oplus \cdots \oplus V$ (with m summands). The action of G on V naturally induces an action of G on the symmetric algebra (or coordinate ring) $S^*(mV)$. A first main theorem for V is an explicit description of generators for the ring of invariants $S^*(mV)^G$ for all values of m .

I will discuss first main theorems for indecomposable representations of the cyclic group C_p of order p over a field of characteristic p . In particular, I will describe a proof (found jointly with Eddy Campbell and Jim Shank) for the indecomposable 2 dimensional representation of C_p . I will also take this seminar as an opportunity to announce a first main for the indecomposable 3 dimensional representation of C_p . My comments will also have significance for new first main theorems for the irreducible representations of $SL(2, C)$.

Monday, March 16, 2009
4:30pm – 5:30pm
319 Jeffery Hall