

MATHEMATICS DEPARTMENT
North Carolina State University

ALGEBRA SEMINAR

Friday, September 30, 2005

Professor Vicky Klima
Appalachian State University

Root Multiplicity Bounds for Roots of Indefinite
Kac–Moody Algebras of Symplectic Type

ABSTRACT: Roots of some indefinite Kac–Moody algebras can be viewed as weights of certain integrable modules of their affine counterparts. Using this perspective, Kang has developed a root multiplicity formula. We apply Kang’s multiplicity formula to roots of the indefinite Kac–Moody algebra $HC_n^{(1)}$. In doing so we must find all partitions of the root into weights of specific integrable $C_n^{(1)}$ -modules. We use Weyl conjugacy to reduce the number of partitions that we must consider. Then we use the path crystal for integrable $C_n^{(1)}$ -modules to finish our calculations. Using this method we calculate a bound for a family of level two roots of $HC_n^{(1)}$ and, in addition, discuss generalizations of the bound to all roots of $HC_n^{(1)}$.

3:00 - 3:50 pm HA 335

Faculty and Students are invited to attend.