1060-22-79 **Donald R King*** (d.king@neu.edu), 567 Lake Hall, Northeastern University, Boston, MA, MA 02115. *Spherical nilpotent orbits and asymptotics of K-types of Harish Chandra modules.*

Let G be the adjoint group of a semisimple Lie algebra $\mathfrak{g}$ and K be a maximal compact subgroup. Let $\mathfrak{p}_{\mathbb{C}}$ be the complexification of the complement of $\mathfrak{k}$ in $\mathfrak{g}$. $K_{\mathbb{C}}$, the complexification of K, acts on $\mathfrak{p}_{\mathbb{C}}$. $\mathfrak{g}_{\mathbb{C}}$ is the complexification of $\mathfrak{g}$. Let $e \in \mathfrak{p}_{\mathbb{C}}$ be nilpotent, and set $\mathcal{O} = K_{\mathbb{C}} \cdot e$, the corresponding $K_{\mathbb{C}}$-orbit. $\overline{\mathcal{O}}$ denotes the Zariski closure of $\mathcal{O}$. $R[\overline{\mathcal{O}}]$ denotes the ring of regular functions on $\overline{\mathcal{O}}$. Assume that e has height 2. Then $\mathcal{O}$ is a spherical $K_{\mathbb{C}}$ variety and the subring of highest weight vectors in $R[\overline{\mathcal{O}}]$ is a polynomial ring. Let $f_1, \ldots, f_r$ be a set of generators with highest weights $\mu_1, \ldots, \mu_r$. Suppose that $\mathbf{X}$ is an irreducible $(\mathfrak{g}_{\mathbb{C}}, K)$ module whose associated variety is $\overline{\mathcal{O}}$. We show that the asymptotic directions of the K-types of $\mathbf{X}$ are determined by the weights μ_i. (Received March 21, 2010)