1100-20-366   **Jim Stark*** (`jstarx@uw.edu`). *Detecting projectivity in sheaves associated to representations of restricted Lie algebras.*

Let k be an algebraically closed field of positive characteristic p and let $\mathfrak{g}$ be a restricted Lie algebra over k. The cohomology variety $\operatorname{Spec} H^{\bullet}(\mathfrak{g}, k)$ is known to be homeomorphic to the restricted nullcone $\mathcal{N}_p$, i.e., the conical variety of p-nilpotent elements of $\mathfrak{g}$. Generalizing work of Carlson in the 80's, one can associate to a given $\mathfrak{g}$-module M sheaves over the projectivization $\mathbb{P}(\mathcal{N}_p)$ of the nullcone. Such work has resulted in the definition and study of modules of constant Jordan type.

In this talk we discuss the sheaf $\mathcal{H}^{[1]}(M)$. We will explain how its definition is motivated by looking at local Jordan type and we will describe some partial results in answering a question of Friedlander and Pevtsova on how $\mathcal{H}^{[1]}(M)$ does and does not detect the projectivity of M. (Received February 10, 2014)