April 1, 2015: David Vogan (MIT), Coherent sheaves on nilpotent cones II.

Suppose $G$ is a complex reductive algebraic group, and $\mathcal{N} \subset \mathfrak{g}^*$ is the nilpotent cone. A conjecture of Lusztig, proved by Bezrukavnikov, provides a natural bijection

$$\text{irr. } G\text{-eqvt vector bdles on } G \text{ orbits on } \mathcal{N} \longleftrightarrow \text{dom. weights for } G.$$  

In the first talk, I explained an algorithm for computing this bijection, and carried out the computation for $GL(3)$. In this talk, I will explain how the algorithm leads to an algorithm for computing characteristic cycles for Harish-Chandra bimodules; how to generalize both algorithms to the setting of Harish-Chandra modules; and possible applications to unitary representations.