February 13: David Vogan (MIT), “Hodge filtrations on Harish-Chandra modules (after Schmid-Vilonen and Adams) II.”

Last week I stated that Schmid and Vilonen have defined natural good filtrations on standard and irreducible Harish-Chandra modules, using Saito’s theory of mixed Hodge modules. I also said that Jeff Adams has written code in the atlas software to “compute” these filtrations (more precisely, to compute the multiplicity of each irreducible of $K$ in each level of the filtration).

This week I will explain the idea of Adam’s calculation; present some evidence that the calculations are correct; and try to state what facts about Hodge filtrations might be needed to prove that the calculations are correct.