

Simon Riche

Title: A topological approach to Soergel theory

Abstract: In the early 1990's, Soergel proposed a new approach to the study of a regular block of category O of complex semisimple Lie algebras, by comparing projective objects in this category with certain modules over a coinvariant invariant nowadays called "Soergel modules". This regular block is equivalent to a category of perverse sheaves on the associated flag variety, so that these results can also be stated in terms of topology. In this talk we will present a new approach to these results, obtained in joint work with R. Bezrukavnikov, which leads to a proof which is completely independent of Representation Theory, and works for arbitrary coefficients.