

Localization Theory for Harish-Chandra Bimodules in Positive Characteristic

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Given a connected reductive algebraic group G over an algebraically closed field of positive characteristic, a Harish-Chandra bimodule is a G -equivariant bimodule for the enveloping algebra of the Lie algebra of G such that the differential of the G -action coincides with the diagonal action of the Lie algebra. Such objects are interesting in particular because they realize translation functors for representations of G . We will explain how Harish-Chandra bimodules with a regular central character can be related to equivariant coherent sheaves on the Steinberg variety of G , building on the localization theory of Bezrukavnikov-Mirkovic-Rumynin. This relation is an essential step in the construction of an equivalence relating such coherent sheaves to perverse sheaves on the affine flag variety of the Langlands dual group, and opens the way to a study of certain categories of representations of the Lie algebra of G using constructible sheaves.

Orateur: RICHE, Simon (Université Clermont Auvergne)