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Title: Derived second adjointness in characteristic p

Abstract: One of the most fundamental operations in the representation theory of p -adic groups is that of parabolic induction: given a smooth representation σ of a Levi subgroup M of a larger p -adic reductive group G , we can form the parabolically induced representation $\text{Ind}_{MN}^G(\sigma)$, which is a smooth G -representation. This allows us to build new representations from old ones, and prove classification results by induction on the size of G . Moreover, the functor Ind_{MN}^G has a natural left adjoint, given by taking N -coinvariant vectors. More interestingly, Vigneras has proved that the functor Ind_{MN}^G also has a right adjoint. When the field of coefficients is equal to the complex numbers, this right adjoint turns out to be equal to a functor of coinvariants for the opposite unipotent subgroup (this is known as Bernstein's second adjointness theorem). On the other hand, when the field of coefficients has characteristic p , the right adjoint functor is much more mysterious: it is no longer exact and does not admit any explicit description. Nevertheless, we will describe how to calculate the derived functors of this right adjoint in certain cases, and survey what else is known.