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Ultraproducts of tannakian categories.

We consider an ultraproduct of a collection of categories of finite dimensional representations of an algebraic group over a collection of fields of increasing positive characteristic. A certain subcategory of this is itself the category of finite dimensional representations of an affine group scheme over the ultraproduct of the fields (always of characteristic zero). We give a fairly tidy description of the underlying Hopf algebra of this group, and compute it in several examples. A possible application of this is to the study of generic cohomology of algebraic groups. (Received September 22, 2015)