

Title: Hopf Algebras in Categories and Their Extensions

Abstract: Beginning with Schreier's extension theory for groups, the theory of extensions has been developed for many algebraic system, in particular for Hopf algebras by the work of N. Andruskiewitsch, J. Devoto, M. Feth, I. Hofstetter, S. Majid, W. M. Singer, and others. Even more recently, this theory has been extended to Hopf algebras in quasismetric monoidal categories by Y. Bspalov and B. Drabant.

However, when applied to the quasismetric category of Yetter-Drinfel'd modules over a given Hopf algebra, it turns out that this latter extension theory does not cover important examples, which is due to the fact that in these examples the cleaving and the cocleaving map are not morphisms in the Yetter-Drinfel'd category. As explained by the speaker in earlier talks, this problem can be addressed by introducing the so-called deviation and codeviation maps. In this talk, we give a categorical adaptation of these maps, making the theory applicable to categories that are more general than the Yetter-Drinfel'd category. The talk is based on joint work with Y. Kashina.