Title: Triviality Theorems for Yetter-Drinfel'd Hopf Algebras

Abstract: Usually, a Yetter-Drinfel'd Hopf algebra is not a Hopf algebra. Yetter-Drinfel'd Hopf algebras that are ordinary Hopf algebras are called trivial; by a result of P. Schauenburg, this happens if and only if the quasisymmetry in the category of Yetter-Drinfel'd modules accidentally coincides with the ordinary flip of tensor factors on the second tensor power of the Yetter-Drinfel'd Hopf algebra.

In certain situations, every Yetter-Drinfel'd Hopf algebra is trivial. In the talk, we consider a semisimple Yetter-Drinfel'd Hopf algebra A over the group ring $K[G]$ of a finite abelian group G, where K is an algebraically closed field of characteristic zero, and first discuss the following triviality theorem:

If A is commutative and its dimension is relatively prime to the order of G, then A is trivial.

Even if the Yetter-Drinfel'd Hopf algebra is not completely trivial, it sometimes must contain a trivial part, as stated in the following partial triviality theorem:

If A is cocommutative and its dimension is greater than 1, then A contains a trivial Yetter-Drinfel'd Hopf subalgebra of dimension greater than 1.

We also discuss the methods needed for the proof of these two results.