

Meeting: 1004, Bowling Green, Kentucky, SS 10A, Special Session on Hopf Algebras and Related Topics

1004-16-159 **Peter C Schauenburg*** (schauenburg@math.lmu.de), Mathematisches Institut, Universität München, Theresienstr. 39, D-80333 München, Germany. *Braided bi-Galois theory*. Preliminary report.

We report on Hopf-Galois and bi-Galois theory in braided monoidal categories. Besides the fact that most of the basic statements and constructions carry over smoothly from the case of Hopf algebras over a commutative base ring to Hopf algebras in a braided category, there are also, and more interestingly, problems and phenomena that are specific to the braided situation. Notably, we explain a special group of bi-Galois objects that can be considered for Hopf algebras that are cocommutative in a suitable sense (they can never be cocommutative in the braided category used to define the Hopf algebra in the first place). This group appears (with an ad hoc definition that does not refer to Hopf algebras in braided categories and their comodule algebras) in work of Zhang on the Brauer groups of Hopf algebras. (Received January 24, 2005)