Algebra Seminar

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Wednesday, January 25, 2017
HH-3017, 1:00p.m.

Hopf Algebras, Cohomology and the Modular Group I

Abstract:

The modular group acts on the center of a factorizable Hopf algebra, which is the zeroth Hochschild cohomology group of this algebra. In this talk, we will present an extension of this action to the entire Hochschild cocomplex.

In the talk, we will first recall the definition of a factorizable Hopf algebra. Then we will present the well-known action of the modular group on its center. For this purpose, we will introduce the Drinfeld map and the Radford map.

After that, we will discuss the definition of the Hochschild cocomplex and introduce some related cocomplexes. These allow us to find generalizations of the Drinfeld and the Radford map. Using these maps we are able to define an action of the modular group on the Hochschild cohomology of a factorizable Hopf algebra and to show that the relations are satisfied.