

Tate cohomology relation for finite dimensional Hopf algebras with an application to group algebras

Van Nguyen

Texas A & M University

The aim of this talk is to extend a known relation of the cohomology and Hochschild cohomology of a finite dimensional Hopf algebra A to negative degrees. In particular, I show that the Tate-Hochschild cohomology of A is isomorphic (as algebras) to its Tate cohomology with coefficients in an adjoint module. Consequently, the Tate cohomology ring of A is a direct summand of its Tate-Hochschild cohomology ring. I will provide a computational example for the Sweedler algebra H_4 . If time permits, I will briefly describe the decomposition of the Tate-Hochschild cohomology of a finite group algebra and introduce a product formula with respect to this decomposition.