Cohomology of free unitary quantum groups

In this talk, I will present the Hochschild and bialgebra cohomology with 1-dimensional co-efficients of the ∗-algebras associated with free universal unitary quantum groups. The result is based on the free resolution of the counit of the free orthogonal quantum groups found by Collins, Härtel, and Thom which was then generalized by Bichon to the case of quantum groups associated with a nondegenerate bilinear form. In fact, we compute cohomology groups of the universal cosovereign Hopf algebras, which generalize free unitary quantum groups and are connected to quantum groups of non-degenerate bilinear forms. This is a joint work with U. Franz, M. Gerhold, A. Wysoczańska-Kula, and I. Baraquin.