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

1004-17-269 **Mikhail V. Kochetov*** (kotcheto@math.usc.edu), USC Department of Mathematics, 3620 S. Vermont Ave., KAP #108, Los Angeles, CA 90089-2532. *Comodule Lie algebras over a cotriangular Hopf algebra.* Preliminary report.

Let (H, β) be a cotriangular Hopf algebra. Then the category of (right) H-comodules $\mathcal{M}^H$ is a symmetric monoidal category, so one can define Lie algebras in $\mathcal{M}^H$ by replacing in the anticommutativity and Jacobi identities the usual flip by the (symmetric) braiding on $\mathcal{M}^H$. Following Bahturin, Fischman, and Montgomery, we call such Lie algebras (H, β)-Lie algebras. If H is the group algebra of an abelian group, then (H, β)-Lie algebras are precisely the so called Lie coloralgebras with commutation factor β. Thus one may view the general (H, β)-Lie algebras as a noncommutative version of Lie coloralgebras.

Using the recent results of Etingof and Gelaki on classification of (co)triangular Hopf algebras, we show that in many cases there exists a 2-cocycle on H that twists every (H, β)-Lie algebra to an ordinary Lie superalgebra. We also consider explicit examples of (H, β)-Lie algebras that are not equivalent to Lie coloralgebras. (Received January 26, 2005)