

1037-16-13

Margaret Beattie* (mbeattie@mta.ca), Mathematics/Computer Science, Mount Allison University, Sackville, NB E4L1E6, Canada, and **Daniel Bulacu**. *Braided Hopf algebras obtained from coquasitriangular Hopf algebras.*

Let (H, σ) be a coquasitriangular Hopf algebra over a field, not necessarily finite dimensional. Following methods of Doi and Takeuchi, which parallel the construction of Radford for finite dimensional quasitriangular Hopf algebras, we define H_σ , a sub-Hopf algebra of H^0 , the finite dual of H . Using the generalized quantum double construction and the theory of Hopf algebras with projection, we associate to H a braided Hopf algebra structure in the category of Yetter-Drinfeld modules over H_σ^{cop} . Specializing to the quantum group $H = \text{SL}_q(N)$, we find that H_σ is $U_q^{\text{ext}}(\mathfrak{sl}_N)$, so that the duality between these quantum groups is just the evaluation map. Furthermore, we obtain explicit formulas for the braided Hopf algebra structure of $\text{SL}_q(N)$ in the category of left Yetter-Drinfeld modules over $U_q^{\text{ext}}(\mathfrak{sl}_N)^{\text{cop}}$. (Received November 11, 2007)