

New Hopf algebras arising from the generalized lifting method

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The problem of classifying all Hopf algebras over an algebraically closed field k of a given dimension was posed by Kaplansky in 1975. Some progress has been made but, in general, it is a difficult question. One of the few general techniques is the so-called Lifting Method developed by Andruskiewitsch and Schneider [AS], under the assumption that the coradical is a subalgebra, i.e., the Hopf algebra has the Chevalley Property. More recently, Andruskiewitsch and Cuadra [AC] proposed to extend this technique by considering the subalgebra generated by the coradical and the related wedge filtration. Using this *generalized lifting method* is it possible to produce new examples of Hopf algebras and to discover new Nichols algebras through the process.

In this talk we will show new examples of Hopf algebras and Nichols algebras which arises from the analysis of the cases when the Hopf algebra generated by the coradical is isomorphic to the dual of a Radford algebra. We will discuss also briefly the relation of this problem and the classification of Nichols algebras of diagonal type as appeared in [AA], see also [X].

This talk is based on joint work with D. Bagio, J. M. Jury Giraldi and O. Marquez [GJG], [BGJM].

References

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