

CLASSIFYING HOPF ALGEBRAS OF A GIVEN DIMENSION

MARGARET BEATTIE AND GASTÓN ANDRÉS GARCÍA

ABSTRACT. Classifying all Hopf algebras of a given finite dimension over \mathbb{C} is a challenging problem which remains open even for many small dimensions, not least because few general approaches to the problem are known. Some useful techniques include counting the dimensions of spaces related to the coradical filtration, studying sub- and quotient Hopf algebras, especially those sub-Hopf algebras generated by a simple subcoalgebra, working with the antipode, and studying Hopf algebras in Yetter-Drinfeld categories to help to classify Radford biproducts. In this paper, we add to the classification tools in our previous work [arXiv:1108.6037v1] and apply our results to Hopf algebras of dimension rpq and $8p$ where p, q, r are distinct primes. At the end of this paper we summarize in a table the status of the classification for dimensions up to 100 to date.