

## HOPF ALGEBRAS AND GRADED ALGEBRAS

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We first present some basic definitions and results related to Hopf algebras and group graded algebras. We then mention some application of these results to the classification of grading by groups on simple Lie algebras. The classification goes beyond the classical situation and covers the cases of Lie algebras over the fields of positive characteristic as well as infinite-dimensional algebras. Many authors contributed to this area; I would like to specifically mention joint results with Matej Brešar and Mikhail Kochetov.