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Gradings on simple Lie algebras: old and new

After reviewing the basic definitions about gradings, it will be shown how gradings by abelian groups on a (not necessarily associative) algebra correspond to morphisms from diagonalizable group schemes to the automorphism group scheme of the algebra. This is the clue to classify gradings on simple Lie algebras. The known classification results of such gradings will be surveyed. Moreover, the notion of almost fine gradings will be introduced. The classification of gradings up to isomorphism will be shown to be equivalent to classifying almost fine gradings up to equivalence and to determining their Weyl groups. (This is based on joint work with Mikhail Kochetov.)