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**Yuri Bahturin** and **Mikhail Kochetov\*** ([mikhail@math.mun.ca](mailto:mikhail@math.mun.ca)), Department of Mathematics and Statistics, Memorial University of Newfoundland, St. John's, NL A1C 5S7, Canada, and **Susan Montgomery**. *Group gradings on classical simple Lie algebras in positive characteristic.*

We are interested in gradings by a group  $G$  on a finite-dimensional simple Lie algebra over an algebraically closed field  $F$ . In this case, one can assume that  $G$  is abelian and finitely generated. Gradings by torsion-free groups have been extensively studied. We restrict ourselves to gradings by finite groups. In the case  $\text{char } F = 0$ , all gradings on the classical simple Lie algebras (except of type  $D_4$ ) were described by Y. Bahturin, M Zaicev and I. Shestakov (2005–2006). We extend their results to the case  $\text{char } F = p > 0$ . Our technique is based on the actions of divided power Hopf algebras. (Received February 05, 2008)