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**Diameters of the Commuting Graphs of Simple Lie Algebras**

Let  $L$  be a Lie algebra with center  $Z(L)$ . The commuting graph  $\Gamma(L)$  of  $L$  is a graph with vertex set  $L \setminus Z(L)$ , two distinct vertices  $x$  and  $y$  are adjacent if and only if  $x$  and  $y$  commute, i.e.,  $[x, y] = 0$ . Let  $\mathfrak{g}$  be a finite-dimensional simple Lie algebra over an algebraically closed field of characteristic zero. In this paper, we study the diameter of  $\Gamma(\mathfrak{g})$ .

**Keywords:** Lie algebra, commuting graph, diameter.

**MSC:** 17B, 05C50, 15A27, 15A33, 16P10