

## 2-Local derivations on finite-dimensional semi-simple Lie algebras

### ABSTRACT

We prove that every 2-local derivation on a finite-dimensional semi-simple Lie algebra  $L$  over an algebraically closed field of characteristic zero is a derivation. We also show that a finite-dimensional nilpotent Lie algebra  $L$  with  $\dim L \geq 2$  admits a 2-local derivation which is not a derivation.

**Keyword:** Semi-simple Lie algebra; Nilpotent algebra; Derivation; 2-Local derivation