MULTIPLICATIVE LIE HIGHER DERIVATIONS
OF UNITAL ALGEBRAS WITH IDEMPOTENTS

DONG HAN AND FENG WEI

Abstract. Let $R$ be a commutative ring with identity and $A$ be a unital algebra with nontrivial idempotent $e$ over $R$. Motivated by Benkovič’s systematic and powerful work [2, 3, 4, 5, 6, 7, 8], we will study multiplicative Lie higher derivations (i.e. those Lie higher derivations without additivity assumption) on $A$ in this article. Let $D = \{L_k\}_{k \in \mathbb{N}}$ be a multiplicative Lie higher derivation on $A$. It is shown that under suitable assumptions, $D = \{L_k\}_{k \in \mathbb{N}}$ is of standard form; i.e. each component $L_k$ ($k \geq 1$) can be expressed through an additive higher derivation and a central mapping vanishing on all commutators of $A$.


Keywords and phrases: Lie higher derivation, higher derivation, additive derivation, unital algebra, generalized matrix algebra.

REFERENCES


