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GENERALIZED LIE DERIVATIONS OF UNITAL ALGEBRAS WITH IDEMPOTENTS

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Abstract. Let $\mathscr{A}$ be a unital algebra with a nontrivial idempotent e over a unital commutative ring R. We show that under suitable assumptions every generalized Lie n-derivation $F:\mathscr{A}\to\mathscr{A}$ is of the form $F(x)=\lambda x+\Delta(x)$, where $\lambda\in Z(\mathscr{A})$ and Δ is a Lie n-derivation of $\mathscr{A}$. As an application, we give a description of generalized Lie n-derivations on classical examples of unital algebras with idempotents: triangular algebras, matrix algebras, nest algebras and algebras of all bounded linear operators.

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