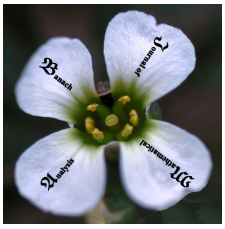

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INNERNESS OF HIGHER DERIVATIONS

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Abstract. Let $\mathcal{A}$ be an algebra. A sequence $\{d_n\}$ of linear mappings on $\mathcal{A}$ is called a higher derivation if $d_n(ab) = \sum_{k=0}^{n} d_k(a)d_{n-k}(b)$ for each $a, b \in \mathcal{A}$ and each nonnegative integer n. In this paper a notion of an inner higher derivation is given. We characterize all uniformly bounded inner higher derivations on Banach algebras and show that each uniformly bounded higher derivation on a Banach algebra $\mathcal{A}$ is inner provided that each derivation on $\mathcal{A}$ is inner.

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