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A perturbation of  $m$ -order derivations on Banach algebras

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**Abstract:** Let  $\mathcal{A}$  be a unital Banach algebra and let  $m$ ,  $1 \leq m \leq 4$ , be an integer. If  $f: \mathcal{A} \rightarrow \mathcal{A}$  is an approximate  $m$ -order derivation in the sense of Hyers-Ulam-Rassias, then  $f: \mathcal{A} \rightarrow \mathcal{A}$  is an exact  $m$ -order derivation.

**Key Words:**  $m$ -order derivation, approximate  $m$ -order derivation, stability.

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