POSITIVE-ADDITIVE FUNCTIONAL EQUATIONS IN $C^*$-ALGEBRAS

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Abstract. In this paper, we introduce a positive-additive functional equation in $C^*$-algebras. Using fixed point methods, we prove the stability of the positive-additive functional equation in $C^*$-algebras. Moreover, we prove the Hyers-Ulam stability of the positive-additive functional equation in $C^*$-algebras by the direct method of Hyers and Ulam.

Key Words and Phrases: Hyers-Ulam stability, $C^*$-algebra, fixed point, positive-additive functional equation.

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REFERENCES


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