

STABILITY OF GENERALIZED ADDITIVE FUNCTIONAL EQUATION IN C^* -ALGEBRAS: A FIXED POINT APPROACH

K. RAVI AND R. MURALI

Abstract

In this paper, using fixed point method, we prove the generalized Hyers-Ulam stability of homomorphisms in C^* -algebras and Lie C^* -algebras and also the derivations on C^* algebras and Lie C^* -algebras for the following functional equation:

$$\sum_{1 \leq i < j \leq n} f \left(\frac{x_i + x_j}{2} + \sum_{l=1, k_l \neq i, j}^{n-2} x_{k_l} \right) = \frac{(n-1)^2}{2} \sum_{i=1}^n f(x_i),$$

where $n \in N$ is a fixed integer with $n \geq 3$.

Key Words : *Additive functional equation, Hyers-Ulam-Rassias Stability and Fixed point alternative.*

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