STABILITY OF SYSTEM OF ADDITIVE FUNCTIONAL EQUATIONS OF THREE VARIABLES IN NON-ARCHIMEDEAN SPACES

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Abstract

In this paper, we study the stability of a system of additive functional equations of the form $f(kx + y + z) + f(kx − y + z) = 2kf(x) + 2f(z)$

$f((k − 1)x + y + z) + f((k − 1)x + y − z) = 2(k − 1)f(x) + 2f(y)$

$f(kx + y + z) − f(kx − y + z) = 2f(y)$

$f((k − 1)x + y + z) − f((k − 1)x + y − z) = 2f(z)$ in non-Archimedean space,where k is a positive integer such that k $\neq$ 0, 1, 2. The above system of functional equations are solved by using Matrix Method.

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