APPROXIMATE FUNCTIONAL INEQUALITIES BY ADDITIVE MAPPINGS

HARK-MAHN KIM, JURI LEE AND EUNYOUNG SON

Abstract. Let $n$ be a given positive integer, $G$ an $n$-divisible abelian group, $X$ a normed space and $f : G \to X$. We prove a generalized Hyers-Ulam stability of the following functional inequality

$$\|f(x) + f(y) + nf(z)\| \leq \left\| nf\left(\frac{x+y}{n} + z\right)\right\| + \varphi(x,y,z), \quad \forall x,y,z \in G,$$

which has been introduced in [3], under some conditions on $\varphi : G \times G \times G \to [0,\infty)$.


Keywords and phrases: Cauchy Jensen inequality, generalized Hyers–Ulam stability.

REFERENCES