Journal of Mathematical Inequalities
Volume 14, Number 2 (2020), 455–472
doi:10.7153/jmi-2020-14-29

STABILITY OF SOME FUNCTIONAL EQUATIONS ON BOUNDED DOMAINS

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Abstract. In this paper, we investigate the Hyers-Ulam stability of the functional equations

$$f(x+y)+f(x-y)=2f(x),$$
$$f(x+y)+f(x-y)=2f(x)+f(y)+f(-y),$$
$$f\big(px+(1-p)y\big)+f\big((1-p)x+py\big)=f(x)+f(y)$$

for $p=\frac{1}{3}$ and $p=\frac{1}{4}$, where f is a mapping from a bounded subset of $\mathbb{R}^{N\geqslant 1}$ into a Banach space E.

Mathematics subject classification (2010): 39B82.
Keywords and phrases: Additive mapping, quadratic mapping, Hyers-Ulam stability, restricted domain.

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Paper JMI-14-29