

**Shen, Yonghong; Chen, Wei**

**On the Ulam stability of an  $n$ -dimensional quadratic functional equation.** (English)

Zbl 1329.39034

J. Nonlinear Sci. Appl. 9, No. 1, 332-341 (2016).

Summary: We construct a new  $n$ -dimensional quadratic functional equation with constant coefficients

$$\sum_{i,j=1}^n f(x_i + x_j) = 2 \sum_{1 \leq i < j \leq n} f(x_i - x_j) + 4f\left(\sum_{i=1}^n x_i\right).$$

And then, we study the Ulam stability of the preceding equation in a real normed space and a non-Archimedean space, respectively.

**MSC:**

**39B82** Stability, separation, extension, and related topics for functional equations

Cited in **1** Document

**39B52** Functional equations for functions with more general domains and/or ranges

**46S10** Functional analysis over fields other than  $\mathbb{R}$  or  $\mathbb{C}$  or the quaternions; non-Archimedean functional analysis

**Keywords:**

Ulam stability;  $n$ -dimensional quadratic functional equation; normed space; non-Archimedean space

**Full Text:** [DOI](#) [Link](#)