

Rassias, John M.

On approximation of approximately linear mappings by linear mappings. (English)

Zbl 0599.47106

Bull. Sci. Math., II. Sér. 108, 445-446 (1984).

Assume A is a normed linear space, B is a Banach space, and $f : A \rightarrow B$ is a mapping "approximately linear". In an old paper we have worked the following Ulam problem: Give conditions in order for a linear mapping near an approximately linear mapping to exist. The proof of the main result (i.e. the existence part) is correct. Although the result about the uniqueness is true, the given proof is incorrect, since the inequality (19) [J. Funct. Anal. 46, 126-130 (1982; Zbl 0482.47033)] cannot be proved for arbitrary $c'' = \text{constant}$. We give a new proof about the uniqueness part.

MSC:

47H99 Nonlinear operators and their properties

46G05 Derivatives of functions in infinite-dimensional spaces

Cited in **98** Documents

Keywords:

Ulam problem; approximately linear mapping