



HYERS–ULAM–RASSIAS STABILITY OF A GENERALIZED PEXIDER FUNCTIONAL EQUATION

AHMED CHARIFI¹, BELAID BOUIKHALENE²
AND ELHOUCIEN ELQORACHI^{3*}

This paper is dedicated to Professor Themistocles M. Rassias.

Submitted by C. Park

ABSTRACT. In this paper, we obtain the Hyers–Ulam–Rassias stability of the generalized Pexider functional equation

$$\sum_{k \in K} f(x + k \cdot y) = |K|g(x) + |K|h(y), \quad x, y \in G,$$

where G is an abelian group, K is a finite abelian subgroup of the group of automorphism of G .

The concept of Hyers–Ulam–Rassias stability originated from Th.M. Rassias' Stability Theorem that appeared in his paper: On the stability of the linear mapping in Banach spaces, Proc. Amer. Math. Soc. 72(1978), 297-300.

^{1,2} BOUIKHALENE BELAID, LABORATORY LAMA, DEPARTMENT OF MATHEMATICS, UNIVERSITY OF IBN TOFAIL, FACULTY OF SCIENCES, BP 133, KÉNITRA 14000, MOROCCO.

E-mail address: charifi2000@yahoo.fr and bbouikhalene@yahoo.fr

³ ELQORACHI ELHOUCIEN, LABORATORY LAMA, HARMONIC ANALYSIS AND FUNCTIONAL EQUATIONS TEAM, DEPARTMENT OF MATHEMATICS, FACULTY OF SCIENCES, UNIVERSITY IBN ZOHR, AGADIR, MOROCCO.

E-mail address: elqorachi@hotmail.com

Date: Received: 14 March 2007; Accepted: 17 October 2007.

* Corresponding author.

2000 *Mathematics Subject Classification.* Primary 39B82; Secondary 39B52.

Key words and phrases. group automorphism, Jensen functional equation, quadratic functional equation, Hyers–Ulam–Rassias stability.