

ON A JENSEN–HOSSZÚ EQUATION, II

ZYGFRYD KOMINEK AND JUSTYNA SIKORSKA

Abstract. We solve functional equation of the form

$$f(x+y-xy) + f(xy) = 2f\left(\frac{x+y}{2}\right)$$

in the class of functions transforming the unit interval into the space of all reals. We also prove that this equation is stable in the Hyers-Ulam's sense.

Mathematics subject classification (2010): 39B82, 39B62, 26A61.

Keywords and phrases: Jensen functional equation, Hosszú functional equation, Hyers-Ulam stability, approximation.

REFERENCES

- [1] Z. KOMINEK, *On a local stability of the Jensen functional equation*, Demonstratio Math. **XXII** 2 (1989), 499–507.
- [2] Z. KOMINEK, *On a Jensen-Hosszú equation I*, Ann. Math. Sil. **23** (2009), 57–60.
- [3] M. KUCZMA, *An Introduction to the Theory of Functional Equations and Inequalities. Cauchy's Equation and Jensen's Inequality*, Silesian University and PWN, Warszawa-Kraków-Katowice, 1985.
- [4] M. LACZKOVICH, *The local stability of convexity, affinity and of the Jensen equation* Dedicated to János Aczél on the occasion of his 75th birthday. Aequationes Math. **58** 1-2 (1999), 135–142.
- [5] L. LOSONCZI, *On the stability of Hosszú functional equation*, Results in Math. **29** (1996), 305–310.
- [6] JACEK TABOR, *Hosszú functional equation on the unit interval is not stable*, Publ. Math. Debrecen **49**, 3-4 (1996), 335–340.
- [7] PETER VOLKMANN, *Zur Stabilität der Cauchyschen und der Hosszúschen Funktionalgleichung*, Seria Mathematicae Debrecensis Katowicensis (Seminar LV), Art. no. 1, 5 pp., 02. 03. 1998, <http://www.math.us.edu.pl/smdk/papers.html>.