

ON THE STABILITY OF THE POMPEIU FUNCTIONAL EQUATION

SOON-MO JUNG AND PRASANNA K. SAHOO

Abstract. In this note, we examine the stability of the Pompeiu functional equation

$$f(x + y + xy) = f(x) + f(y) + f(x)f(y).$$

Mathematics subject classification (2000): 39B62, 39B82.

Key words and phrases: Stability, superstability, Pompeiu functional equation.

REFERENCES

- [1] R. GER AND P. ŠEMRL, *The stability of the exponential equation*, Proc. Amer. Math. Soc. **124** (1996), 779–787.
- [2] D. H. HYERS, *On the stability of the linear functional equation*, Proc. Nat. Acad. Sci. U.S.A. **27** (1941), 222–224.
- [3] D. H. HYERS AND S. M. ULAM, *Approximately convex functions*, Proc. Bull. Am. Math. Soc. **3** (1952), 821–828.
- [4] D. H. HYERS, G. ISAC AND TH. M. RASSIAS, *Stability of Functional Equations in Several Variables*, Birkhäuser, Boston, 1998.
- [5] PL. KANNAPPAN AND P. K. SAHOO, *On generalizations of the Pompeiu functional equation*, Internat. J. Math. Math. Sci. **21** (1998), 117–124.
- [6] E. L. KOH, *The Cauchy functional equations in distributions*, Proc. Amer. Math. Soc. **106** (1989), 641–646.
- [7] M. NEAGU, *About the Pompeiu equation in distributions*, Inst. Politehn. “Traian Vuia” Timisoara. Lucrar. Sem. Mat. Fiz. (1984) May, 62–66.
- [8] J. RÄTZ, *On approximately additive mappings*, In “General Inequalities 2”, Birkhäuser, Basel/Boston/Stuttgart, 1980, pp. 233–251.