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Asymptotic Hyers-Ulam Stability or Superstability by Unilateral Perturbations on the Concavity Side for Generalized Linear Equations

In a recent paper [Asymptotic Hyers-Ulam stability or superstability for generalized linear equations by unilateral perturbations, J. Convex Analysis 26 (2019) 543–562] we considered in relation to the famous problem of Ulam "Give conditions in order for a linear mapping near an approximated linear mapping to exist" the stability or superstability of a generalized linear equation

$$||f(x+y) - f(x) - f(y)|| = B[\phi(x) + \phi(y)]$$

by perturbations on the convexity side, named right perturbations. In this paper we continue this research for perturbations on the concavity side with some hypotheses of concavity.

Keywords: Hyers-Ulam stability, superstability, asymptotic stability, linear equation, affine equation, exponential equation.

MSC: 39B62, 26A51.