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## CAUCHY-RASSIAS STABILITY OF CAUCHY-JENSEN ADDITIVE MAPPINGS IN BANACH SPACES

Choonkil Baak

Department of Mathematics, Chungnam National University, Daejeon 305--764, South Korea

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摘要

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Choonkil Baak

Department of Mathematics, Chungnam National University, Daejeon 305--764, South Korea

**Abstract** Let  $X, Y$  be vector spaces. It is shown that if a mapping  $f: X \rightarrow Y$  satisfies  $\|f(x+y) - f(x) - f(y)\| \leq \theta(\|x\|^2 + \|y\|^2)$ ,  $\|f(x-y) - f(x) + f(y)\| \leq \theta(\|x\|^2 + \|y\|^2)$ ,  $\|2f(x+y) - f(x) - f(y)\| \leq \theta(\|x\|^2 + \|y\|^2)$  for all  $x, y, z \in X$ , then the mapping  $f: X \rightarrow Y$  is Cauchy additive. Furthermore, we prove the Cauchy--Rassias stability of the functional equations (0.1), (0.2) and (0.3) in Banach spaces. The results are applied to investigate isomorphisms between unital Banach algebras.

**Key words** [Cauchy additive mapping](#) [Jensen additive mapping](#) [Cauchy--Rassias stability](#) [isomorphism morphism between Banach algebra](#)

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通讯作者 Choonkil Baak [cgpark@cnu.ac.kr](mailto:cgpark@cnu.ac.kr)

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