Kopecká, Eva; Malý, Jan

Remarks on delta-convex functions. (English) Zbl 0714.46007

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Let A be a convex subset of a normed linear space X. A function H: $A \to \mathbb{R}$ is delta-convex on A if it can be expressed as a difference of two continuous convex functions on A. A function h: $A \to \mathbb{R}$ is a control function to H on A if h-H and $h + H$ are continuous and convex.

The authors give an example of a delta-convex function on $\mathbb{R}^2$ which is strictly differentiable at 0, but none of its control functions is differentiable at 0. They also generalize to infinite-dimensional spaces a result of Hartman on the existence of a control function for a family of functions.

Reviewer: V.Anisiu

MSC:

46A55	Convex sets in topological linear spaces; Choquet theory
26B25	Convexity of real functions of several variables, generalizations
46G05	Derivatives of functions in infinite-dimensional spaces
49J50	Fréchet and Gateaux differentiability in optimization

Keywords:

control function; delta-convex function; strictly differentiable

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