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A non-DC function which is DC along all convex curves. (English) Zbl 1387.26029
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Summary: A problem asked by the authors in 1989 concerns the natural question, whether one can deduce that a continuous function f on an open convex set $D \subset \mathbb{R}^n$ is DC (i.e., is a difference of two convex functions) from the behavior of f “along some special curves φ ”. I. M. Prudnikov published in 2014 a theorem (working with convex curves φ in the plane), which would give a positive answer in \mathbb{R}^2 to our problem. However, in the present note we construct an example showing that this theorem is not correct, and thus our problem remains open in each \mathbb{R}^n , $n > 1$.

MSC:

- 26B25 Convexity of real functions of several variables, generalizations
- 26A51 Convexity of real functions in one variable, generalizations

Keywords:

DC function; d.c. function; characterization of DC functions

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