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Characterizations of r -convex functions. (English) Zbl 1231.90314
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Summary: This paper discusses some properties of r -convexity and its relations with some other types of convexity. A characterization of convex functions in terms of r -convexity is given without assuming differentiability. The concept of strict r -convexity is introduced. For a twice continuously differentiable function f , it is shown that the strict r -convexity of f is equivalent to a certain condition on $\nabla^2 f$. Further, it is shown that this condition is satisfied by quasiconvex functions satisfying a less stringent condition.

MSC:

90C25 Convex programming

Cited in 2 Documents

Keywords:

strict r -convexity; r -convexity; positive-semidefinite matrices; positive-definite matrices; convex functions; quasiconvex functions

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