Further Properties on Strongly Quasiconvex Functions with Applications

Felipe Lara [*]

Abstract

We provide first-order characterizations for differentiable strongly quasiconvex functions via the behaviour of its gradient by extending the famous characterization of Arrow and Enthoven given in [1] and, as a consequence, we characterize strongly quasiconvex functions via a new generalized monotonicity notion which is exactly between strongly monotone and strongly pseudomonotone operators. Furthermore, we apply our theoretical results for studying the steepest descent dinamical system.

References

[1] ARROW K.J., ENTHOVEN A.C., Quasiconcave programming, *Econometrica* **29**: 779–800, 1961.

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[*]Instituto de Alta Investigación, Universidad de Tarapacá, Arica, Chile. felipelaraobreque@gmail.com, web: felipelara.cl