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Optimality conditions of set-valued optimization problems with respect to ℓ_1 order relation by using oriented function

E. Karaman

Karabük University, Karabük, Turkey, e.karaman42@gmail.com

Abstract

In this study, set-valued optimization problems are considered with respect to ℓ_1 order relation, which is a pre-order relation on the family of nonempty sets. Recently, Oriented distance function has been used to obtain scalarization of set-valued optimization problems [1]. Some relationships between an extension of Oriented distance function and ℓ_1 order relation are examined. By using Oriented distance function, some necessary and sufficient optimality conditions are obtained for set-valued optimization problems given with respect to ℓ_1 order relation.

Key Words: Set-valued optimization, Optimality condition, Oriented distance function.

References

[1] Khushboo, C.S. Lalitha, Scalarizations for a set optimization problem using generalized oriented distance function, Positivity, (2019), doi:10.1007/s11117-019-00659-3.