

Duality and optimality conditions in convex robust optimization

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Abstract

We provide new optimality conditions for convex robust optimization problems in an infinite-dimensional framework, which are both exact and fuzzy. While the fuzzy calculus only requires the lower semi-continuity of the given data functions, the exact conditions involve continuity type criteria which extend the usual constrained qualification of ordinary convex optimization, namely the classic qualification condition of Fenchel-Moreau-Rockafellar. These results and the underlying structure suggest the introduction of different dual optimization models which, compared to the usual models of ordinary convex optimization, involve certain additional terms related to the effective domain of the objective function.

References

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