

Optimality conditions in optimization under uncertainty

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Abstract

Most optimization problems involve uncertain data due to measurement errors, unknown future developments and modeling approximations. Stochastic optimization assumes that the uncertain parameter is probabilistic. An other approach is called robust optimization which expects the uncertain parameter to belong to a set that is known prior. In this talk, we consider scalar optimization problems under uncertainty with infinite scenario sets (see [1, 2]). We apply methods from vector optimization in general spaces, set-valued optimization and scalarization techniques to derive necessary optimality conditions for solutions of robust optimization problems.

References

- [1] KLAMROTH, K., KÖBIS, E., SCHÖBEL, A. & TAMMER, CHR.: A unified approach for different concepts of robustness and stochastic programming via nonlinear scalarizing functionals, *Optimization*, **62** (5), 649–671, 2013.
- [2] KLAMROTH, K., KÖBIS, E., SCHÖBEL, &, TAMMER, CHR.: A unified approach to uncertain optimization, *European J. Oper. Res.*, **260** (2), 403–420, 2017

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