

Augmented Lagrangians methods for cone-constrained convex optimization in Banach spaces

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Abstract

We consider a general optimization problem of the form $\min g(x)$ subject to $g(x) \in K$, with $g : B_1 \rightarrow B_2$, $G : B_1 \rightarrow B_2$, where B_1 and B_2 are real reflexive Banach spaces and K is a nonempty closed convex cone in B_2 . We introduce an inexact augmented Lagrangian method for this problem, extending to cone constrained problems recently introduced error criteria for the subproblems of the proximal point method. We present a full convergence analysis.

Keywords: Augmented Lagrangian, cone-constrained optimization, inexact solutions.

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