NUMERICAL CONSIDERATIONS OF A HYBRID PROXIMAL PROJECTION ALGORITHM FOR SOLVING VARIATIONAL INEQUALITIES

Christina Jager

Department of Mathematics, University of Trier
54286 Trier, Germany

e-mail: christina.jager@uni-trier.de

Abstract

In this paper, some ideas for the numerical realization of the hybrid proximal projection algorithm from Solodov and Svaiter [22] are presented. An example is given which shows that this hybrid algorithm does not generate a Fejér-monotone sequence. Further, a strategy is suggested for the computation of inexact solutions of the auxiliary problems with a certain tolerance. For that purpose, $\varepsilon$-subdifferentials of the auxiliary functions and the bundle trust region method from Schramm and Zowe [20] are used. Finally, some numerical results for non-smooth convex optimization problems are given which compare the hybrid algorithm to the inexact proximal point method from Rockafellar [17].

Keywords: variational inequality, proximal point algorithm, bundle method.


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