Self-adaptive methods for solving split problems of variational inclusion

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Abstract

In this paper, we study the weak convergence of the algorithms for solving variational inclusion problems without using Lipschitz condition of the inverse strongly monotone operator in real Hilbert spaces. The algorithms are inspired by Tseng's modied forward-backward splitting method [4](SIAM J Control Optim 38,431-446(2000))with a simple step size. The weak convergence theorems for our algorithms are established without any requirement of additionally resolvent operators and the prior knowledge of the bounded linear operator norm. Also, our methods are extended to solve the split feasible problem and split minimization problem. Finally, some numerical experiments are provided to demonstrate the eciency of the proposed iterative method.

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