

An explicit extragradient algorithm for variational inequality problem with application to a model in electricity production

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Abstract

In this paper, we introduce a new explicit extragradient algorithm for solving Variational Inequality Problem (VIP) in Banach spaces. The proposed algorithm uses a linesearch method whose inner iterations is independent of any projection onto feasible sets. Under standard and mild assumption of pseudomonotonicity and uniform continuity of the VIP associated operator, we establish the strong convergence of the scheme. Further, we apply our algorithm to find an equilibrium point with minimal environmental cost for a model in electricity production. Finally, a numerical result is presented to illustrate the given model. Our result extends, improves and unifies other related results in the literature.

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