

The proximal point method for nonmonotone variational inequalities

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Abstract

We consider an application of the proximal point method to variational inequality problems subject to box constraints, whose cost mappings possess order monotonicity properties instead of the usual monotonicity ones. Usually, convergence results of such methods require the additional boundedness assumption of the solutions set. We suggest another approach to obtaining convergence results for proximal point methods which is based on the assumption that the dual variational inequality is solvable. Then the solutions set may be unbounded. We present classes of economic equilibrium problems which satisfy such assumptions.

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Keywords

Box-constrained sets, Multivalued variational inequalities, Nonmonotone mappings, Proximal point method