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Pseudomonotone Diagonal Subdifferential Operators

Let f be an equilibrium bifunction defined on the product space $X \times X$, where X is a Banach space. If f is locally Lipschitz with respect to the second variable, for every $x \in X$ we define $T_f(x)$ as the Clarke subdifferential of $f(x, \cdot)$ evaluated at x . This multivalued operator plays a fundamental role for the reformulation of equilibrium problems as variational inequality ones. We analyze additional conditions on f which ensure the D -maximal pseudomonotonicity and the cyclically pseudomonotonicity of T_f . Such results have consequences in terms of the characterization of the set of solutions of a subclass of pseudomonotone equilibrium problems.

Keywords: Equilibrium problem, pseudomonotone bifunction, pseudomonotone operator, diagonal subdifferential.

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