

## A NOTE ON COMPLEMENTARITY PROBLEM IN BANACH SPACE

S. NANDA AND S. PANI

*Abstract.* The purpose of this note is to establish an existence theorem for nonlinear complementarity problem for strictly pseudo-monotone operator over convex cone in a Banach space.

*Mathematics subject classification (2000):* 90C30; 49N15.

*Key words and phrases:* Variational inequalities, complementarity problems, closed convex cone, strictly pseudo-monotone operator.

### REFERENCES

- [1] F. E. BROWDER, *Nonlinear Monotone Operators and Convex Sets in Banach Spaces*, Bull. Amer. Math. Soc. **71** (1965), 780–785.
- [2] P. HARTMAN AND G. STAMPACCHIA, *On some Nonlinear Elliptic Differential Functional Equations*, Acta Math. **115** (1996), 271–310.
- [3] S. KARAMARDIAN, *Generalized Complementarity Problem*, Journal of Optimization Theory and Applications **8** (1971), 161–168.
- [4] J. L. LIONS AND G. STAMPACCHIA, *Variational Inequalities*, Comm. Pure Appl. Math. **20** (1967), 493–519.
- [5] U. MOSCO, *Convergence of Convex Sets and Solutions of Variational Inequalities*, Adv. Math. **3** (1966), 510–585.
- [6] S. NANDA, *On a Complementarity Problem in Banach Space*, Proceedings of the American Mathematical Society, **4** (1994), 1203–1205.
- [7] S. NANDA, *Nonlinear Complementarity Problem of Mathematical Programming in Banach Space*, Indian Journal of Pure and Applied Mathematics, **18** (3) (1987), 215–218.
- [8] M. THERA, *Existence Results for the Nonlinear Complementarity Problem and Application to Nonlinear Analysis*, J. Math. Anal. Appl. **154** (1991), 572–584.
- [9] JEN-CHIN YAO, *Variational Inequality*, Appl. Math. Lett. Vol 5, No 1 (1992), 39–42.