

1106-47-1417

Dhruba R. Adhikari*, 1100 S. Marietta Pkwy, Marietta, GA 30060. *Nonzero Solutions to Operator Inclusions Involving Perturbed Maximal Monotone Operators*. Preliminary report.

Let X be a real reflexive Banach space and G_1, G_2 two nonempty, open and bounded subsets of X such that $0 \in G_2$ and $\overline{G_2} \subset G_1$. Let $T : X \supset D(T) \rightarrow 2^{X^*}$ be a positively homogeneous maximal monotone operator of degree $\alpha \in (0, 1]$, $C : X \supset D(C) \rightarrow X^*$ a bounded demicontinuous of type (S_+) , and $G : X \supset D(G) \rightarrow 2^{X^*}$ of class (P) as introduced by Hu and Papageorgiou. The problem of existence of nonzero solutions for $Tx + Cx + Gx \ni 0$ is solved by utilizing the Browder and Skrypnik degree theories. This theory generalizes similar results of the author and Kartsatos for $\alpha = 1$ and $G = 0$ and has applications in elliptic and parabolic boundary value problems involving p -Laplacian with $p \in (1, 2]$. (Received September 12, 2014)