1145-47-1531 **Dhruba R Adhikari*** (dadhikar@kennesaw.edu). *Topological degrees for quasibounded multivalued ($S\widetilde{+}$)-perturbations of maximal monotone operators.*

Let X be an infinite dimensional real reflexive Banach space with dual space X^* and $G \subset X$ open and bounded. Let $T : X \supset D(T) \to 2^{X^*}$ be a maximal monotone operator with $0 \in D(T)$ and $0 \in T(0)$, and let $C : X \supset D(C) \to 2^{X^*}$ be densely defined strongly quasibounded and of type $(\widetilde{S}_+)$. A new topological degree theory is introduced for the sum $T + C$ with a degree mapping $\mathrm{d}(T + C, G, 0)$ defined eventually in terms of the Ma degree for multivalued compact operators. Unlike single-valued operators considered by Kartsatos and Skrypnik, the operator C here is multivalued so that the multivalued generalized pseudomonotone operators considered by Browder and Hess include such C and even $T + C$. Consequently, the main existence results of Browder and Hess are obtained via the new degree theory and some of their existence results are extended. An application of the theory to elliptic partial differential inclusions in general divergence form is also given. (Received September 23, 2018)