

1035-47-468

Dhruba R. Adhikari* (dadhikari@as.muw.edu), Mississippi University for Women, Department of Sciences and Mathematics, 1100 College Street, MUW-100, Columbus, MS 39701, and
Athanassios G. Kartsatos (hermes@math.usf.edu), University of South Florida, Department of Mathematics, 4202 E. Fowler Ave., PHY 114, Tampa, FL 33620. *Strongly Quasibounded Maximal Monotone Perturbations for the Berkovits-Mustonen Topological Degree Theory.*

Let X be a real reflexive Banach space with dual X^* . Let $L : X \supset D(L) \rightarrow X^*$ be densely defined, linear and maximal monotone. Let $T : X \supset D(T) \rightarrow 2^{X^*}$, with $0 \in D(T)$ and $0 \in T(0)$, be strongly quasibounded and maximal monotone, and $C : X \supset D(C) \rightarrow X^*$ bounded, demicontinuous and of type (S_+) w.r.t. to $D(L)$. A new topological degree theory has been developed for the sum $L + T + C$. This degree theory is an extension of the Berkovits-Mustonen theory (for $T = 0$) and an improvement of the work of Addou and Mermri (for $T : X \rightarrow 2^{X^*}$ bounded). Unbounded maximal monotone operators with $0 \in \text{Int}D(T)$ are strongly quasibounded and may be used with the new degree theory. (Received September 08, 2007)