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**INVARIANCE OF DOMAIN AND EIGENVALUES FOR
PERTURBATIONS OF DENSELY DEFINED LINEAR MAXIMAL
MONOTONE OPERATORS**

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Let X be a real reflexive Banach space with dual X^* . Let $L : X \supset D(L) \rightarrow X^*$ be densely defined linear maximal monotone. Let $T : X \supset D(T) \rightarrow 2^{X^*}$ be maximal monotone with $0 \in \overset{\circ}{D}(T)$ and $0 \in T(0)$, and $C : X \supset D(C) \rightarrow X^*$ bounded, demicontinuous and of type (S_+) w.r.t. $D(L)$. An invariance of domain result has been established for the sum $L + T + C$. An eigenvalue problem of the type $Lx + Tx + C(\lambda, x) \ni 0$ is also solved, where T is now maximal monotone and strongly quasibounded with $0 \in T(0)$ and $C(\lambda, \cdot)$, $\lambda > 0$, is like C above. The recent topological degree theory of the authors is used, utilizing the graph norm topology on $D(L)$, along with the methodology of Berkovits and Mustonen and recent invariance of domain and eigenvalue results by Kartsatos and Skrypnik. Possible applications to time-dependent problems are also included.

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