
MCLEAN EDWARDS, University of British Columbia

Relationships between classes of monotone operators

Among monotone operators, subdifferentials of convex functions are particularly well behaved. Generalizations are often defined by selecting a certain desirable property of subdifferentials. We consider the classes of monotone operators defined by five such properties: maximality, strict monotonicity, 3-cyclic monotonicity, 3*-monotonicity, and paramonotonicity. Surprisingly, only three general relationships (two of which are obvious) link these five classes. This talk is a report on a complete catalogue of theorems and examples addressing all possible combinations of these five properties. I will describe the relationships that hold in general, and illustrate some low dimensional and linear operators that explore the boundaries.