CONVEX REPRESENTATIONS OF MONOTONE OPERATORS, SURJECTIVITY THEOREMS AND POSITIVE SETS

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Convex representations of monotone operators have become a useful tool in the study of monotonicity. In this talk I will recall some basic facts on such representations and will present some generalizations of Rockafellar's surjectivity theorem and related results. In these generalizations the duality mapping is replaced by another maximal monotone operator satisfying suitable conditions. An extension of the surjectivity theorem to the nonreflexive setting for maximal monotone operators of type (D) will also be presented. Finally, I will discuss the notion of q-positive set, recently introduced by Stephen Simons, which provides a very simple abstract setting for the study of monotonicity.