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Cone Preorders in Measurable Function Spaces

The paper deals with isotone functions in Euclidean spaces and preorders induced by duals of cones of such functions in measurable function spaces. Spectral orders, stochastic orders, S-convex functions and functions preserving a cone preorder are very important examples in the subject. There many differential characterizations of isotonicity in mathematical literature. A key result in the paper is an integral characterization of isotone functions. It yields generators of some cones of measurable functions. Isotonicity and inequalities w. r. t. these orders are considered. In addition, the concept of dual cone in a norm space is discussed.

References: Otachel, Z., Spectral orders and isotone functionals, Linear Algebra Appl. 252 (1997), 159-172.