Stability for convex vector optimization problems

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Abstract

This paper deals with the convergence (in the sense of Kuratowski - Painlevé) of the set of the minimal points of A_n to the set of minimal points of A, whenever $\{A_n\}$ is a sequence of closed convex subsets of an Euclidean space, converging in the same sense to the set A. Next we consider the convex vector optimization problem under the assumption that the objective function f is such that all its sublevel sets, restricted to the feasible region, are bounded. For this problem we investigate the convergence of the solution sets of perturbed (with respect to the feasible region and the objective function) problems both in the image space and in the decision space. We consider also the same topics for a linear problem. Finally we apply our results to the study of stability for a vector programming problem with convex inequality and linear equality constraints.