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Transversal perturbations of convexity

Abstract. This will be a survey on different posiibilities to avoid the convexity assumption in the basic theorems of multivalued analysis due to E. Michael (selections), J. Dugundji (extensions), A. Cellina (approximations), G. Beer (strong approximations), S. Kakutani (fixed points), Ky Fan (minimax) and others. The key notion in the talk will be the function of nonconvexity, or, paraconvexity of a sets, which was introduced by D. Repovs and the speaker, as a generalization of E. Michael's approach. It will be explained why graphs of continuous functions over convex domains in some sense look almost as convex sets. I shall also discuss the open problem about the interpretation of paraconvexity as a convexity with respect to some suitable generalized convexity.