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Baire class 1 selectors for upper semicontinuous set-valued maps. (English) Zbl 0822.54017

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Summary: Let T be a metric space and X a Banach space. Let $F : T \to X$ be a set-valued map assuming arbitrary values and satisfying the upper semicontinuity condition: $\{t \in T: F(t) \cap C \neq \emptyset\}$ is closed for each weakly closed set C in X. Then there is a sequence of norm-continuous functions converging pointwise (in the norm) to a selection for F. We prove a statement of similar precision and generality when X is a metric space.

MSC:

54C65	Selections in general topology
46B99	Normed linear spaces and Banach spaces; Banach lattices
54C60	Set-valued maps in general topology

Keywords:

upper semicontinuous set-valued maps; Baire class 1 maps; selectors; weak topology; weak* topology

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