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Selection Principles and Games on Multicovered Spaces

We shall discuss some Selection Principles and related games on multicovered spaces. A *multicovered space* is a pair (X, μ) consisting of a set X and a family μ of covers of X. The category of multicovered space is a natural place where Theory of Selection Principles develops naturally and deeply. A typical selection principle asserts that for each sequence $(u_n)_{n\in\omega} \in \mu^\omega$ of covers of a multicovered space (X, μ) it is possible to select a cover $v = \{B_n : n \in \omega\}$ of X by u_n-bounded subsets $B_n \subset X$ so that for each point $x \in X$ the index set $\{n \in \omega : x \in B_n\}$ is "large" in a suitable sense. If "large" means "non-empty" (resp. "coinfinite") then we obtain the classical Menger (resp. Hurewicz) property. The (non-trivial and highly fruitful) interplay between Selection Principles and recently created Theory of Semifilters will be discussed as well.