Combinatorial covering properties and posets with fusion

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A topological space X has the *Hurewicz property* if for every sequence $\langle \mathcal{U}_n : n \in \omega \rangle$ of open covers of X there exists a sequence $\langle \mathcal{V}_n : n \in \omega \rangle$ such that $\mathcal{V}_n \in [\mathcal{U}_n]^{<\omega}$, and $\{n \in \omega : x \notin \cup \mathcal{V}_n\}$ is finite for all $x \in X$. If we simply require that $\{\cup \mathcal{V}_n : n \in \omega\}$ is an open cover of X then we get the definition of the *Menger property*. In our talk we shall discuss the behavior of these properties in the Sacks, Laver, and Miller models. For instance, in the Laver and Miller models metrizable spaces with the Hurewicz and Menger properties, respectively, enjoy certain form of concentration, which helps to analyze their products. In particular, the following theorem follows from a combination of results recently proven by Szewczak, Tsaban, Repovš, and myself.

Theorem *In the Laver model for the consistency of the Borel's conjecture, the product of any two Hurewicz spaces is again Hurewicz provided that it is a Lindelöf space. In particular, the product of any two Hurewicz metrizable spaces is Hurewicz in this model.*

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