

Lubomyr Zdomsky
A semifilter approach to selection principles

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Abstract: In this paper we develop the semifilter approach to the classical Menger and Hurewicz properties and show that the small cardinal \mathfrak{g} is a lower bound of the additivity number of the σ -ideal generated by Menger subspaces of the Baire space, and under $\mathfrak{u} < \mathfrak{g}$ every subset X of the real line with the property $Split(\Lambda, \Lambda)$ is Hurewicz, and thus it is consistent with ZFC that the property $Split(\Lambda, \Lambda)$ is preserved by unions of less than \mathfrak{b} subsets of the real line.

Keywords: Menger property, Hurewicz property, property $Split(\Lambda, \Lambda)$, semifilter, multifunction, small cardinals, additivity number

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