

VITALI-HAHN-SAKS PROPERTY OF BOOLEAN ALGEBRAS IN FORCING EXTENSIONS

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The talk is going to be devoted to the main ideas of the proof of the following

Theorem 1. *Let \mathcal{A} be a σ -complete Boolean algebra, and \mathbb{P} a proper poset which preserves ground model reals non-meager and has the Laver property. Then \mathcal{A} has the Vitali-Hahn-Saks property in $V^{\mathbb{P}}$.*

Theorem 1 generalizes the main result of [1], which was the starting point of our investigations.

The Vitali-Hahn-Saks property is known to be equivalent to the conjunction of the properties of Nikodym and Grothendieck. Schachermeier has proved that the Jordan algebra has the Nikodym property and fails to be Grothendieck. However, the only known examples of Boolean algebras with Grothendieck property and without the Nikodym one were constructed by Talagrand under CH. We shall discuss some other strategies to get such algebras in various models of ZFC suggested by our proof of Theorem 1.

The talk will be based on a joint work in progress with Damian Sobota

REFERENCES

- [1] Brech, C., *On the density of Banach spaces $C(K)$ with the Grothendieck property*, Proceedings of the American Mathematical Society **134** (2006), 3653–3663.

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