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Borel ideals

Joint work with M.Hrusak and with C.Uzcategui

We say that an ideal $\mathcal{I}$ on ω is tall if for every infinite $x \subseteq \omega$ there is an infinite $y \subseteq x$ such that $y \in \mathcal{I}$. I will present a result from [1] which states that the set of all tall F_σ-ideals is Π^1_2-complete. Consequently we have that there is no analytic tall ideal that is below all Borel tall ideals in the Katětov order, which answers a question of M. Hrusak. Next I present a result from [2] where we used the complexity result from [1] to show that there is a tall F_σ-ideal such that no Borel function can witness its tallness. This has some conseqeunce on possible uniform versions of Galvin's and Nash-Williams's theorems from infinite-dimensional Ramsey theory.

[1] Grebik, J., Hrusak, M., *No minimal tall Borel ideal in the Katětov order*, preprint, 2017.

[2] Grebik, J., Uzcategui, C., *Bases and Borel selectors for tall families*, preprint, 2017.