

ON A NEW F_σ IDEAL

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ABSTRACT. An ideal \mathcal{I} on ω has the *Mon* property if every sequence of reals contains a monotone subsequence indexed by a \mathcal{I} -positive set. An ideal \mathcal{I} is Ramsey if every finite coloring of $[\omega]^2$ has a homogeneous \mathcal{I} -positive set.

Answering a question of Filipów, Mrożek, Reclaw and Szuca we show that there is an ideal \mathcal{K} which has the *Mon* property but is not Ramsey. We study further combinatorial properties of this ideal, including a notion of selectiveness located between weak selectiveness and local selectiveness. We apply \mathcal{K} to ideal convergence of sequences of functions.