

# ABSTRACT NON-PIECEWISE SYNDETIC SETS

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Notions of thickness, syndeticity and piecewise syndeticity arise naturally in ergodic Ramsey theory, additive combinatorics and topology [1], [2], [3]. In this talk, we discuss an abstract framework extending these notions to systems of families of subsets of a countable set [5].

Inspired by a classical characterization of non-piecewise syndetic sets due to [4], we extend this characterization to a general case. The corresponding condition  $\nabla$  naturally generates ideals and leads to a notion of nPS-representability.

In addition, we show that the ideal of completely Ramsey null sets can be realized as a family  $\nabla((\mathcal{F}_i)_{i \in I})$  a suitable system  $(\mathcal{F}_i)_{i \in I}$ .

Finally, we show that every  $F_\sigma$  ideal is nPS-representable. As a consequence, the framework applies to several classical combinatorial ideals connected with van der Waerden's and Hindman's theorems.

## REFERENCES

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