RAMSEY THEORY OF CARDINALS, ORDINALS, TREES, AND PARTIAL ORDERS

ARI MEIR BRODSKY

We explore results of Ramsey theory (also known as partition calculus) and show how they apply to cardinals, ordinals, trees, and arbitrary partial orders, leading up to the following main result:

**Main Theorem.** Let $\kappa$ be any infinite regular cardinal, let $\xi$ be any ordinal such that $2^{\|\xi\|} < \kappa$, and let $k$ be any natural number. Then

$$\text{non-} (2^{<\kappa})^\ast \text{-special tree } \rightarrow (\kappa + \xi)^2_k.$$

This is a generalization to trees of the Balanced Baumgartner-Hajnal-Todorcevic Theorem, which we recover by applying the above to the cardinal $(2^{<\kappa})^+$, the simplest example of a non-$(2^{<\kappa})^\ast$-special tree.

A full exposition of the results is contained in my PhD thesis, [1].

**References**


Department of Mathematics, Bar-Ilan University, Ramat-Gan 5290002, Israel

E-mail address: brodskak@macs.biu.ac.il