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DRAWING STRATEGIES IN STRONG RAMSEY GAMES FOR 3-UNIFORM HYPERGRAPHS

The *Strong Ramsey game* $\mathcal{R}(B, G)$ is a two player game with players P_1 and P_2 , where B and G are k -uniform hypergraphs for some $k \geq 2$. G is always finite, while B may be infinite. P_1 and P_2 alternately color uncolored edges $e \in B$ in their respective color and P_1 begins. Whoever completes a monochromatic copy of G in their own color first, wins the game. If no one claims a monochromatic copy of G in a finite number of moves, the game is declared a draw.

In this talk, we present an infinite family of 3-uniform hypergraphs $\{G_t\}_{t \geq 3}$, such that P_2 has a drawing strategy in the Strong Ramsey game $\mathcal{R}(K_{\aleph_0}^{(3)}, G_t)$. This improves a result by David, Hartarsky, and Tiba (EuJC, 2020). Furthermore, we give a broad overview of the tools used in our proofs. Our results appear in: arXiv:2512.16722.

This is joint work with Nathan Bowler.