

Ramsey theory, topological dynamics and proof mining

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In their 1978 paper, Furstenberg and Weiss established a connection between recurrence in topological dynamics and van der Waerden's Theorem (and generalizations thereof). We sketch an analysis of the Multiple Birkhoff Recurrence Theorem (based on an earlier analysis by Girard), and discuss limitations and applications of this analysis. We then put this topological approach into context with Shelah's alternative combinatorial approach and discuss possibilities of future work.