
KEEGAN DASILVA BARBOSA, Fields Institute

Box Ramsey and Canonical Partitions

The KPT correspondence gives a full characterization of the dynamics of automorphism groups of Fraïssé structures through finite combinatorics. There is still much open however on whether or not there is a full correspondence between big Ramsey degrees and topological dynamics. While a partial answer has been found by Zucker by considering structures that admit a big Ramsey structure, the question still remains open. Motivated by this problem, we aim to answer a related question. Namely, what are the necessary and sufficient conditions needed for a structure to admit a finite list of canonical relations? We do so by developing a natural productive analogue to big Ramsey we call the Box Ramsey degree, solving a question of Masulovic. Our techniques will be reminiscent of Rado's proof of the Erdős-Rado theorem, or more recently, works on canonical equivalence relations done by Laflamme, Sauer, and Vuksanovic.