COLLOQUIUM

Ramsey theory on binary relational homogeneous structures

Natasha Dobrinen

University of Notre Dame

4-6-23

Neckers 156
Time: 3:00pm

Reception immediately following in the math library.

Abstract:

Generalizations of Ramsey's Theorem to colorings of infinite sets proceed via topological considerations. The Galvin-Prikry Theorem states that Borel subsets of the Baire space are Ramsey. Silver extended this to analytic sets, and Ellentuck gave a topological characterization of Ramsey sets in terms of the property of Baire in the Vietoris topology.

We present work extending these theorems to several classes of countable homogeneous structures, answering a question of Kechris, Pestov, and Todorcevic. An obstruction to exact analogues of Galvin-Prikry or Ellentuck is the presence of big Ramsey degrees. We will discuss how different properties of the structures affect which analogues have been proved. Presented is work of the speaker for SDAP+ structures, and joint work with Zucker for binary finitely constrained FAP classes. A feature of the work with Zucker is showing that we can weaken one of Todorcevic's four axioms guaranteeing a Ramsey space, and still achieve the same conclusion. These axioms are built on prior work of Carlson and Simpson developing topological Ramsey space theory.

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