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Topological groups with tractable minimal dynamics

In joint work with Gianluca Basso, we explore the class of Polish groups whose universal minimal flows admit a comeager orbit. By work of Ben Yaacov, Melleray, and Tsankov, this class contains all Polish groups with metrizable universal minimal flow, and by an example of Kwiatkowska, this inclusion is strict. We isolate the correct generalization of this class of Polish groups to the class of all topological groups. We call these the topological groups with “tractable minimal dynamics (TMD).” One way of phrasing what makes this class “tractable” is an “abstract Kechris-Pestov-Todorcevic correspondence,” which characterizes membership in TMD using a Ramsey-theoretic property of the group. In particular, this implies that TMD is absolute between models of set theory. We also state some conjectures to the effect that any topological group not in TMD has “wild” minimal dynamics.