Big Ramsey degrees and infinite languages

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Study of big Ramsey degrees is an infinitary extension of the study of Ramsey classes. Like the Kechris–Pestov–Todorcevic correspondence [1] gives a link between Ramsey classes and topological dynamics, big Ramsey degrees are also closely connected to dynamical properties of the automorphism groups of homogeneous structures.

The area of big Ramsey degrees is currently seeing fast development. Recently, we were able to show that an unconstrained homogeneous relational structure has finite big Ramsey degrees if and only if it is ω-categorical (if and only if its *tree of n-types* is finitely branching for every n). In particular, this is the first time we were able to handle structures in infinite languages. This is done by applying the product Milliken theorem for arbitrarily large (finite) products of trees.

This is joint work with Samuel Braunfeld, David Chodounský, Noé de Rancourt, Jan Hubička and Jamal Kawach.

[1] A. S. Kechris, V. G. Pestov, and S. Todorcevic, *Fraïssé limits, Ramsey theory, and topological dynamics of automorphism groups*, Geom. Funct. Anal., 15 (2005), pp. 106–189.