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A plethora of big Ramsey degrees

One of the benefits of treating Ramsey-related phenomena categorically is the possibility of “automatic dualization,” which follows from the Duality Principle in category theory. While in case of finite Ramsey phenomena (e.g. small Ramsey degrees) all statements indeed dualize automatically, the situation with infinite Ramsey phenomena is more challenging: in contrast to the “direct” context where no topology is involved, infinite dual Ramsey phenomena essentially depend on topological assumptions. Thus, understanding finitely dimensional infinite Ramsey phenomena relies on understanding big Ramsey degrees in at least four incarnations: (“direct” + dual) \times (embedding + structural). In this talk we propose a unifying point of view, but the price to pay is the necessity to work in categories endowed with both topological and algebraic structure. Interestingly, this leads to new specimens of big Ramsey degrees the usefulness of which is still to be considered.