by randomizations. We also study the separable models of the theory of beautiful pairs of randomizations, and we classify them in the $\aleph_0$-categorical case.

The second part (with J. Melleray) studies full groups of minimal homeomorphisms of the Cantor space, and their invariant measures. Full groups are complete algebraic invariants for orbit equivalence. Their counterparts in ergodic theory enjoy good, important topological properties.

In Chapter 4, we show that, by contrast, full groups of minimal homeomorphisms do not admit a Polish group topology, and are moreover non-Borel subsets of the homeomorphism group of the Cantor space. We then study the closures of full groups by means of Fraïssé theory.

Finally, in Chapter 5 we give a characterization of the sets of invariant measures of minimal homeomorphisms of the Cantor space. We also present new, elementary proofs of some results previously established by complex means.

Abstract taken from the thesis.

Marios Koulakis, ***Coding into Inner Models at the Level of Strong Cardinals***, University of Münster, 2015. Supervised by Ralf Schindler. MSC: 03E10, 03E35, 03E45, 03E55. Keywords: large cardinals, inner model theory, independence results, strong cardinals, coding into inner models.

Abstract

This thesis explores the possibilities of coding into inner models in the presence of strong cardinals. The first key result is that if there is no inner model with a Woodin cardinal and all strong cardinals of the core model K are countable in V, then there is a stationary set preserving forcing extension $V[g]$ of V which adds a real x such that in $V[g]$, $H_{\omega_2} \subset K[x]$. The second key result is that if there is no inner model with a Woodin cardinal and $\kappa > \omega$ is a cardinal (plus some mild cardinal arithmetic hypotheses), then there is a cofinality preserving forcing extension $V[g]$ of V which adds a subset X of κ such that in $V[g]$, $H_{\kappa^+} \subset K[C, X]$, where $C \subset \kappa^+$ is any set such that if $\xi < \kappa^+$ has countable cofinality in V, then ξ has countable cofinality in $L[C]$.

The first key result has applications on forcing projective or $J_{1+\theta}(\mathbf{R})$ well-orderings of the reals, depending on the order type of the strong cardinals of K below ω_1^V, and on 2-step stationary forcing absoluteness for levels of $L(\mathbf{R})$.

Abstract prepared by Marios Koulakis, Ralf Schindler
E-mail: marios.koulakis@gmail.com
URL: https://www.uni-muenster.de/imperia/md/content/logik/disskoulakis.pdf

Dominik Thomas Adolf, ***On the Strength of $PFA(\aleph_2)$ in Conjunction with a Precipitous Ideal on ω_1 and Namba-Like Forcings on Successors of Regular Cardinals***, WWU Muenster, 2013. Supervised by Ralf Schindler. MSC: 03E25. Keywords: core model induction, Prikry forcing.

Abstract

Part one: we consider two properties, the first is a strengthening of the bounded proper forcing axiom, here referred to as $PFA(\aleph_2)$ and the second is the existence of a precipitous ideal on ω_1. Individually, these properties are "weak" and they are both consistent relative to the existence of a measurable cardinal. Building on earlier work by Ralf Schindler and Ben Claverie we show, using core model induction, that inductive determinacy holds in the universe after collapsing ω_1. We also show that full $AD^{L(\mathbb{R})}$ holds (in V) on the condition that the generic ultrapower given by our ideal respects operators over H_{ω_1} that are in $L(\mathbb{R})$.

Part two: we show that, given $\kappa < \mu$ regular uncountable cardinals such that μ is measurable, a trace of the Prikry forcing on μ remains even after collapsing μ to be κ^+, i.e., in the universe after the collapse there exists a forcing notion $\mathbb{P}$ that singularizes μ but does not

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