The Largest Initial Segment of a Model of Set Theory Pointwise Fixed by a Non-trivial Automorphism

Zachiri McKenzie

Gothenburg University, Sweden

I will speak about joint work that has been done in collaboration with Ali Enayat and Matt Kaufmann. The research I will speak about today investigates the first-order theory and structure of the largest initial segment of a model of a subsystem of ZFC that is pointwise fixed by a non-trivial automorphism. We will completely determine the first-order theory that holds in the class of structures in the language of set theory which appear as the largest initial segment of a model of a weak subsystem of ZFC that is pointwise fixed by a non-trivial automorphism. We also show that every countable transitive model of this theory and every countable recursively saturated model of this theory can be realized as the largest initial segment of a model of a weak subsystem of ZFC that is pointwise fixed by a non-trivial automorphism.