

Projective absoluteness and thin equivalence relations

Philipp Schlicht

June 20, 2008

Σ_n^1 absoluteness for a forcing means that the same Σ_n^1 facts about reals in the ground model are true in the ground model and in the generic extension. A related property is that there are no new equivalence classes of thin $\underline{\Pi}_{n-1}^1$ and $\underline{\Sigma}_{n-1}^1$ equivalence relations (equivalence relations with no perfect set of pairwise inequivalent reals) in the generic extension. We discuss how these properties are connected and prove both simultaneously for reasonable forcing, assuming the existence of $M_{n-3}^\#(X)$ for all transitive sets X of the same size as the forcing. The proof is based on an idea of Foreman and Magidor. We further present a version of this result for $\underline{\Sigma}_2^1$ c.c.c. forcing in the context of projective determinacy.