Mathematics, Statistics, and Computer Science   **@ UIC**

Logic Seminar

The Hanf number for Extendability

John Baldwin (UIC)

Abstract: We construct a complete $L_{\omega_1,\omega}$-sentence ϕ such that $(\mathbf{R}, \subseteq)$ is an abstract elementary class with a proper class of models.

Theorem. There is a maximal model $\mathsf{M} \in \mathbf{R}$ of cardinality λ if there is no measurable cardinal ρ with $\rho \leq \lambda$, $\lambda = \lambda^{<\lambda}$, and there is an $\mathsf{S} \subseteq \mathsf{S}^{\lambda}_{\aleph_0}$, that is stationary non-reflecting, and $\diamondsuit_{\mathsf{S}}$ holds.

Thus in the absence of a measurable, ϕ has arbitrarily large maximal models. But in the presence of measurables there are maximal models cofinally in the first measurable and never again. I hope to say something about the removal of the set-theoretic hypotheses.

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Tuesday, October 25 at 4:00 PM in SEO 427

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