

Logic Seminar

A tame Cantor set

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Abstract: Let $\mathbb{R}$ denote the real ordered field. Our focus here is on expansions of $\mathbb{R}$ by Cantor sets. For our purposes, a Cantor set is a non-empty, compact subset of the real line that has neither interior nor isolated points. We consider the following question due to Friedman, Kurdyka, Miller and Speissegger: is there a Cantor set K and a natural number N such that every set definable in $(\mathbb{R}, K)$ is Σ_N^1 ? I will answer this question positively. In addition to using techniques from model theory, o-minimality and descriptive set theory and previous work of Friedman et al., the work presented in this talk depends crucially on well known results about the monadic second order theory of one successor due to Buechi, Landweber and McNaughton.

Tuesday, March 1 at 4:00 PM in SEO 427