

Logic Seminar

The canonical base property and CM-triviality

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Abstract: In geometric stability theory, the duality between locally modular and not plays a central structural role. For example, in many important cases, non-local modularity implies the interpretability of a field, a phenomenon known as Zilber's dichotomy. Hrushovski's classical counterexample to this behavior, while not locally modular, still has a relatively rudimentary forking geometry: it is CM-trivial, which prevents the interpretability of a field.

More recently, a relative generalization of local modularity, inspired by the behavior of compact complex spaces, was defined: the Canonical Base Property (CBP). It was shown to hold in many key structures, for example DCF_0 , where it was used by Pillay and Ziegler to show Zilber's dichotomy. It was first conjectured that the CBP held for all superstable finite rank structures, until Hrushovski, Palacín and Pillay produced the first counterexample, as a reduct of an algebraically closed field of characteristic zero. Since then, all counterexamples produced involved a field, and it is natural to ask if this is necessary.

In this talk, I will answer this question negatively by presenting a CM-trivial structure without the CBP. Joint with Thomas Blossier.

Tuesday, October 19 at 3:00 PM in 636 SEO