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Scott Complexity and Torsion Abelian Groups

In this talk we review the connection between Scott sentences of countable structures and descriptive set theory. In particular, we show that the optimal Scott sentences of reduced Abelian p-Groups is arbitrarily high (below ω_1). In particular, this yields a new proof that the isomorphism relation on this class of structures is not a Borel equivalence relation. To do this, we first characterized the back-and-forth relations on this class of structures, which has many potential applications in computable structure theory. This work is joint with Luke MacLean and Barbara Csima.