► RACHAEL ALVIR, *Scott complexity and finitely α-generated structures.*

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Scott [1] showed that every countable structure can be described up to isomorphism among countable structures by a sentence of $L_{\omega_1\omega}$ known as its *Scott Sentence*. There is a kind of normal form for infinitary sentences, so that each can be classified as Π_α or Σ_α for some countable α; a conjunction of a Σ_α and a Π_α sentence is called $d\text{-}\Sigma_\alpha$. Every finitely generated structure has a Σ_3 Scott sentence. Matthew Harrison-Trainor and Meng-che Ho [3] showed that a finitely generated structure has a $d\text{-}\Sigma_2$ Scott sentence iff it is *self-reflective*, i.e., contains a proper Σ_1-elementary substructure isomorphic to itself. The speaker, McCoy, and Knight [2] showed that this condition also holds iff some generating tuple has a Π_1-definable automorphism orbit. In this talk, we generalize the notion of a finitely generated structure, and show that a finitely α-generated structure has a $d\text{-}\Sigma_{\alpha+1}$ Scott sentence iff it is α-reflective, or equivalently if some α-generator has a Π_α-definable automorphism orbit.

[1] DANA SCOTT, *Logic with denumerably long formulas and finite strings of quantifiers*, **The theory of models** (J.W. Addison, L. Henkin, A. Tarski), Elsevier, Publisher's address, 1963, pp. 329–341.

[2] RACHAEL ALVIR, JULIA KNIGHT, AND CHARLES MCCOY, *Complexiy of Scott sentences*, **Forthcoming.**

[3] MATTHEW HARRISON-TRAINOR AND MENG-CHE HO, *On optimal Scott sentences of finitely generated algebraic structures*, **Proceedings of the American mathematical society**, vol. 146 (2018), no. 10, pp. 4473–4485.