

1107-03-257

**Karen Lange\*** ([karen.lange@wellesley.edu](mailto:karen.lange@wellesley.edu)), Wellesley College, 106 Central St., Wellesley, MA 02481, and **Abigail Raz**. *Scott sentences and index sets of some computable groups*. Preliminary report.

Scott sentences, infinitary formulas that describe a single isomorphism class  $\mathcal{C}$  of countable models, help us to understand the structure and complexity of elements of  $\mathcal{C}$ . Partially building on work in [1], Knight and Saraph [2] give Scott sentences for computable examples of torsion free abelian groups of rank 1 and certain finitely generated groups. In many cases, they show that their Scott sentences are of the least possible complexity by examining the corresponding index sets. We work to close some of the complexity gaps in the remaining cases and generalize their work to a wider class of examples.

- [1] J. Carson, V. Harizanov, J. Knight, K. Lange, C. McCoy, A. Morozov, S. Quinn, C. Safranski, and J. Wallbaum, “Describing free groups”, *Trans. Amer. Math. Soc.*, vol. 364, (2012), pp. 5715-5728.
- [2] J. Knight and V. Saraph “Scott sentences for certain groups”, preprint. (Received January 16, 2015)