Moshe Jarden and Alexandra Shlapentokh* (shlapentokha@ecu.edu), Dept Of Mathematics, East Carolina University, Greenville, NC 27858. Fields with Decidable Existential Theories. Preliminary report.

Let $K$ be an infinite algebraic extension of $\mathbb{Q}$ with decidable existential theory. Assume we have a computable presentation of $\overline{\mathbb{Q}}$, the algebraic closure of $\mathbb{Q}$. By a computable presentation we mean an injective map $j : \overline{\mathbb{Q}} \rightarrow \mathbb{Z}_{>0}$ such that $j(\overline{\mathbb{Q}})$, $j(\mathbb{Q})$, and the $j$-image of the graphs of addition and multiplication are decidable. We now construct $M$ such that $M \cong K$ and $j(M)$ is decidable. (Received January 06, 2015)