Campbell Hewett* (chewett@mit.edu). Computability of rational points on curves over function fields in characteristic $p$.

Let $k$ be a perfect field of characteristic $p$, and let $K$ be a field finitely generated over $k$. This talk is concerned with regular nonsmooth curves $X$ over $K$, also known as genus-changing curves. Assuming $k$ has finite transcendence degree over its prime field, we give an algorithm to compute the set of $K$-points $X(K)$ that expands on the proofs of finiteness of $X(K)$ given by Voloch and Jeong. This, together with Szpiro’s height bound for $K$-points on smooth nonisotrivial curves of genus at least two, proves the effective Mordell conjecture for regular curves in positive characteristic. (Received August 31, 2019)