Robert L. Benedetto* (rlb@math.amherst.edu). Computing small canonical heights in arithmetic dynamics.

Let $K$ be a number field, and let $\phi$ be a morphism from the projective line to itself, defined over $K$ and of degree at least two. It has been conjectured that there is a uniform upper bound for the number of $K$-rational preperiodic points, and that there is a uniform lower bound for the normalized canonical height of $K$-rational non-preperiodic points. In this talk, we will discuss some computational evidence for these conjectures, as well as the strategies underlying our computations. (Received September 08, 2011)