Kenneth Scott Jacobs* (kjacobs2@uga.edu). Lyapunov Exponents in non-Archimedean Dynamics.

The Lyapunov exponent of a rational map $\phi$ measures the rate of growth of a point in a generic orbit. It is related to the orbits of the critical points of $\phi$, and when $\phi$ is defined over $\mathbb{C}$, a sharp lower bound is $\frac{1}{2} \log d$, where $d$ is the degree of the map.

Much less is known about Lyapunov exponents for maps defined over non-Archimedean fields. In this talk, we will give an explicit lower bound similar to the one over $\mathbb{C}$ which is sharp for maps of good reduction. We will also give a formula relating Lyapunov exponents to Silverman’s critical height. (Received September 17, 2015)