Iteration of algebraic points under a rational self-map
Ekaterina Amerik, Higher School of Economics (Moscow) and Université Paris-Sud (Orsay)

Let $X$ be an algebraic variety and $f$ a dominant rational self-map of $X$, both defined over a number field. We shall study Zariski closures of iterated orbits $\{f^k(x), k \geq 0\}$, where $x$ is an algebraic point of $X$. In particular we shall show that any such self-map of infinite order admits a non-preperiodic algebraic point. In the same spirit, a conjecture by Zhang affirms that a regular polarized self-map should have an algebraic point with Zariski-dense iterated orbit. If time permits, we shall make some (starting) remarks concerning this conjecture for surfaces.