
XIAO ZHONG, University of Waterloo

A dynamical Manin–Mumford type question on polynomial endomorphisms of $\mathbb{A}^2$

In this talk, I will discuss regular polynomial endomorphisms of $\mathbb{A}^2$ that admit infinitely many periodic curves. I will show that if a family of curves contains a Zariski dense set of periodic curves under a regular polynomial endomorphism F , then this family is invariant under some iterate of F . Furthermore, I will present a complete classification of regular polynomial endomorphisms that have infinitely many periodic curves of bounded degree. As a consequence, we obtain a weaker form of a special case of the Dynamical Manin–Mumford Conjecture, a dynamical analogue of the classical Manin–Mumford Conjecture in arithmetic geometry.