Abstracts
Research seminar on Recent Developments in Algebraic Geometry, Arithmetic and Dynamics
(17 August 2023)

1 Jit Wu Yap

Harvard University, USA
An upper bound on number of S-integral points of orbits

Abstract

Let K be a number field, S a finite set of places containing all archimedean places and f a rational map defined over K of degree $d \geq 2$. Given a non-preperiodic point α and non-exceptional β, both in $\mathbb{P}^1(K)$, Silverman has shown that there are only finitely many points among $\{\alpha, f(\alpha), f^2(\alpha), \ldots\}$ that are S-integral relative to β. More recently, Hsia and Silverman showed an upper bound of the form $O(4^{|S|})$ on the number of such points as S varies. In this talk we will improve this upper bound to $O(|S|^{1+\epsilon})$ and show it is possible to get $O(|S|)$ for certain rational maps.

2 Jia Jia

Tsinghua University, China
Wild automorphisms of compact complex spaces

Abstract

An automorphism of a compact complex space is called wild if there is no non-trivial proper invariant analytic subset. In this talk, I will show that a compact complex surface admitting a wild automorphism is either a complex torus or an Inoue surface of certain type, and this wild automorphism has zero entropy. This is based on a joint work with Long Wang.