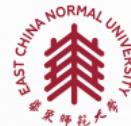


Algebraic Dynamics and Dynamical Iitaka Theory

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base on the joint work with Sheng Meng and Long Wang

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Kawaguchi-Silverman Conjecture

Work over $\overline{\mathbb{Q}}$. X : smooth projective variety, $f : X \rightarrow X$: surjective endomorphism. H : ample divisor on X . $h : X(\overline{\mathbb{Q}}) \rightarrow \mathbb{R}_{\geq 1}$: a height function associated to H .

Conjecture: Kawaguchi-Silverman Conjecture = KSC

If the orbit $O_f(x) := \{f^n(x) \mid n \geq 0\}$ is Zariski dense in X , then

$$\alpha_f(x) = \delta_f.$$

here,

$$\alpha_f(x) := \lim_{n \rightarrow \infty} h(f^n(x))^{1/n},$$

arithmetic invariant at x ,

$$\delta_f := \lim_{n \rightarrow \infty} ((f^n)^* H \cdot H^{\dim X - 1})^{1/n},$$

geometric invariant of f .

An example

Let $X = \mathbb{P}^2$ and $f : [x : y : z] \mapsto [x^d : y^d : z^d]$ with $d \geq 2$.

$$[1 : 2 : 3] \xrightarrow{f} [1 : 2^d : 3^d] \xrightarrow{f} [1 : 2^{d^2} : 3^{d^2}] \xrightarrow{f} \cdots$$

Three orbit conjecture



Dynamical Iitaka Theory



Settings



Main results



Strategies and Techniques



Thank You!

