

第 2 回大阪高次元代数多様体論

- Date: 2019 年 5 月 27 日 – 28 日
- Venue: 大阪大学理学部 E404/406/408 大セミナー室

Program

27th (Mon.)

10:00–11:00 伊藤敦 (名古屋大学)

On a generalization of Seshadri constant

11:15–12:15 佐藤謙太 (理化学研究所)

Ascending chain condition for F -pure thresholds

14:00–15:00 Sung Rak Choi (大阪大学, Yonsei University)

On a product formula for volumes

15:30–16:30 岩井雅崇 (東京大学)

On the Fujita's freeness conjecture in the relative setting

28th (Tue.)

10:00–11:00 柴田崇広 (京都大学)

Arithmetic degrees for dynamical systems over function fields of characteristic zero

11:15–12:15 齋藤隆大 (筑波大学)

Milnor monodromies and mixed Hodge structures for non-isolated hypersurface singularities

Abstracts

伊藤敦 (名古屋大学)

Title: **On a generalization of Seshadri constant**

In this talk, I will introduce a generalization of Seshadri constant and explain some properties of it. This is joint work with Florin Ambro.

佐藤謙太 (理化学研究所)

Title: **Ascending chain condition for F -pure thresholds**

For a germ of a variety in positive characteristic and a non-zero ideal sheaf on the variety, we can define the F -pure threshold of the ideal by using Frobenius morphisms, which measures the singularities of the pair. In this talk, I will show that the set of all F -pure thresholds with fixed embedding dimension satisfies the ascending chain condition. This is a positive characteristic analogue of the “ascending chain condition for log canonical thresholds” in characteristic 0, which was recently proved by Hacon, McKernan, and Xu.

Sung Rak Choi (大阪大学, Yonsei University)

Title: **On a product formula for volumes**

We discuss the Kawamata's product formula for volumes of canonical divisors on fibre spaces using the Okounkov bodies. We also give a characterization of birational isotriviality of a fibre space in terms of Okounkov bodies. This is a joint work with Seung-Jo Jung, Jinhyung Park, and Joonyeong Won.

岩井雅崇 (東京大学)

Title: **On the Fujita's freeness conjecture in the relative setting**

T. Fujita conjectured that $K_X + (n+1)L$ is globally generated for any n -dimensional smooth projective variety X and any ample divisor L on X . This conjecture is called Fujita's freeness conjecture and it is open. Recently, Popa and Schnell conjectured Fujita's freeness conjecture in the relative setting. In this talk, I will talk about their conjecture and my result.

柴田崇広 (京都大学)

Title: **Arithmetic degrees for dynamical systems over function fields of characteristic zero**

Arithmetic degrees are defined for forward orbits of a self-map over a number field or a function field. A fundamental problem for arithmetic degrees is to investigate relationships between arithmetic degrees and first dynamical degrees. In this talk, we restrict ourselves to the function field case and give a geometric description of arithmetic degrees. We use such a description to prove that arithmetic degrees are less than or equal to first dynamical degrees, and that there is a forward orbit whose arithmetic degree attains first dynamical degree. This is a joint work with Yohsuke Matsuzawa and Kaoru Sano.

齋藤隆大 (筑波大学)

Title: **Milnor monodromies and mixed Hodge structures for non-isolated hypersurface singularities**

We study the Milnor monodromies of non-isolated hypersurface singularities. In general, if a singular point is non-isolated, the reduced cohomology groups of the Milnor fiber of the singular point are not concentrated in the middle degree. However, by using the theory of mixed Hodge modules, we can show that the generalized eigenspaces of them for some eigenvalues of the Milnor monodromies are concentrated in the middle degree as in the case for isolated hypersurface singular points. As an application of this result, we can compute some parts of the Jordan normal forms of the Milnor monodromies for non-isolated hypersurface singular points.

Organizers: 大川新之介, 藤田健人, 藤野修 (大阪大学)

Supports: Grant-in-Aid for Scientific Research JP16H03925, JP16H06337