9

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7   20   (   )

9:30 – 10:30   (   )/Takuya Okamoto (Nagoya)

Partial Mordell-Tornheim multiple zeta values

10:40 – 11:40   (   )/Yoshitaka Sasaki (Kinki)

On generalized poly-Bernoulli numbers and related L-functions

11:50 – 12:50   (   )/Tatsuya Ohshita (Kyoto)

The Euler systems of cyclotomic units and higher Fitting ideals

14:00 – 15:00   (   )/Rei Otsuki (Keio)

Construction of p-adic Hecke L-functions using the Kronecker theta function in the cyclotomic supersingular case

15:15 – 16:15   (   )/Manabu Yoshida (Kyushu)

An ultrametric space of Eisenstein polynomials and ramification theory

16:30 – 17:30   (   )/Toshiro Hiranouchi (Hiroshima)

On a filtration associated with an isogeny on formal groups

7   21   (   )

9:30 – 10:30   (   )/Sho Takemori (Kyoto)

A p-adic limit of Siegel-Eisenstein series of degree two

10:40 – 11:40   (   )/Keiju Sono (Tokyo)

The matrix coefficients with minimal K-types of the spherical and non-spherical principal series representations of $SL(3, \mathbb{R})$

11:50 – 12:50 (　　　　　　)/Shunsuke Yamana (Osaka City)

The Siegel-Weil formula for quaternionic unitary groups

14:00 – 15:00 (　　　　　　)/Yuuki Takai (Nagoya)

An effective isomorphy criterion for mod ℓ Galois representations

15:15 – 16:15 (　　　　　　　　)/Yasufumi Hashimoto (ISIT)

Asymptotic formulas of class number sums of indefinite binary quadratic forms

16:30 – 17:30 (　　　　)/Yutaka Konomi (Gakushuin)

The ideal class groups of dihedral extensions over imaginary quadratic fields and the special values of the Artin L-functions

7　22　(　)
9:30 – 10:30 (　　　　)/Kazuaki Miyatani (Tokyo)

Finiteness of Crystalline Cohomology of Higher Level

10:40 – 11:40 (　　　　)/Takahiro Nakagawa (Chiba)

Calculation of p-adic unbounded functions on the unit disc

11:50 – 12:50 (　　　　　)/Kentaro Nakamura (Keio)

Zariski density of crystalline representations

14:00 – 15:00 (　　　　)/Takahiro Tsushima (Tokyo)

On the stable reduction of the modular curve $X_0(p^4)$

15:15 – 16:15 (　　　　)/Yoichi Mieda (Kyushu)

Variants of formal nearby cycles and applications

16:30 – 17:30 (　　　　)/Satoshi Mochizuki (Toyo)

Weight, unstable dimension, some conjectures in algebraic geometry via noncommutative motive theory

18:00 – 　　　　　　　　　　　　　　　　　　　　　　　　　　　AOSIS

7　23　(　)
9:30 – 10:30 (　　　　)/Shota Kojima (Rikkyo)

Infinite Composition of Polynomials sum

10:40 – 11:40 (　　　　)/Hajime Kaneko (Kyoto)

Algebraic independence of the values of power series

11:50 – 12:50 (　　　　　)/Akihiko Okamoto (Waseda)

Relative Brauer groups and tractability of algebraic function fields in one variable

14:00 – 15:00 (　　　　)/Daisuke Shiomi (Nagoya)

A p-rank of Jacobian for a cyclotomic function field

15:15 – 16:15 (　　　　)/Yukihiro Uchida (Kyoto)

Valuations of Somos 4 sequences and local heights on elliptic curves

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（Takuya Okamoto） D2

Mordell-Tornheim

Partial Mordell-Tornheim multiple zeta values

We define the partial Mordell-Tornheim multiple zeta functions by

$$\zeta_{MT,r}(s_1,\ldots,s_r;s_{r+1}) = \sum_{m_1,\ldots,m_r}^{\infty} \frac{1}{m_1^{s_1}\cdots m_r^{s_r}(2m_1+m_2+\cdots+m_r)_{r+1}^{s}}$$

for $r \in \mathbb{N}$ and $s_1,\ldots,s_r \in \mathbb{C}$, and consider the values of the partial Mordell-Tornheim multiple zeta function $\zeta_{MT,r}$ at positive integers by using the basic properties of Milnor's multiple sine function and Bernoulli polynomials which is introduced by Onodera.

（Yoshitaka Sasaki） （　　　　　）PD

Bernoulli　　poly　　　　　　L

On generalized poly-Bernoulli numbers and related L-functions

Kaneko introduced poly-Bernoulli numbers which are generalization of Bernoulli numbers. After that Arakawa and Kaneko introduced a new zeta-function (Arakawa-Kaneko's zeta-function) whose special values at non-positive integers are expressed by poly-Bernoulli numbers. I plan to talk about the generalization of the Dirichlet L-functions based on Arakawa-Kaneko's zeta-function. Further I introduce generalized poly-Bernoulli numbers via special values at non-positive integers of such L-functions.

（Tatsuya Ohshita） （　　　　　　　　　）

Euler　　　　Fitting

The Euler systems of cyclotomic units and higher Fitting ideals

Masato Kurihara (Keio University) established a refinement of the minus-part of the Iwasawa main conjecture of ideal class groups. In this talk, we will explain a result on the higher Fitting ideals of the plus-part. Using the Euler system of cyclotomic units, we will construct ideals of the Iwasawa algebra which give upper bounds of the higher Fitting ideals. This result can be regarded as a refinement of the plus-part of the Iwasawa main conjecture.

（Rei Otsuki）

Construction of p-adic Hecke L-functions using the Kronecker theta function in the cyclotomic supersingular case

In this talk, following an idea of Shinichi Kobayashi, we give a construction of cyclotomic p-adic L-functions in the supersingular and general weight case which interpolate special values of Hecke L-functions associated to CM elliptic curves by using the Kronecker theta function. These p-adic L-functions are essentially a special case of the p-adic L-functions obtained by Vishik and Amice-Vélu.

（Manabu Yoshida） （　　　　　　　　）

An ultrametric space of Eisenstein polynomials and ramification theory

We give a criterion whether two given polynomials over a local field define the same extension in terms of a certain non-Archimedean metric on the set of polynomials. The

criterion and its proof depend on ramification theory. We introduce some applications for Galois representations and truncated discrete valuation rings. (joint work with T. Suzuki)

(Toshiro Hiranouchi) (   )

On a filtration associated with an isogeny on formal groups

We study a filtration associated with an isogeny on formal groups over a local field. As an application, the image of the Kummer map on supersingular elliptic curves is decided. For the product of supersingular elliptic curves, the image of the Albanese kernel by the cycle map is also calculated. (joint work with Seiji Hirayama)

(Sho Takemori) D1

A p-adic limit of Siegel-Eisenstein series of degree two

We introduce an explicit formula for Fourier coefficients of Siegel-Eisenstein series of degree two for all level, and consider a p-adic limit of Fourier coefficients of Siegel-Eisenstein series and a p-adic analytic family of Siegel-Eisenstein series of degree two. If weight is larger than 3, this results is a generalization of Katsurada-Nagaoka's work and Mizuno's work.

(Keiju Sono)

The matrix coefficients with minimal K-types of the spherical and non-spherical principal series representations of $SL(3, \mathbb{R})$

We compute the holonomic system of rank 6 for the radial part of the matrix coefficients of class one and non-spherical principal series of $SL(3, \mathbb{R})$. We give explicit formulas of the coefficients of six power series solutions, and express the matrix coefficients by their linear combinations. Among others, the c- functions of non-spherical principal series are obtained.

(Shunsuke Yamana) (PD)

The Siegel-Weil formula for quaternionic unitary groups

The Siegel-Weil formula is an identity between a value of a certain Eisenstein series and an integral of a theta function. Such identity was first proven by Siegel and then extended to classical dual reductive pairs by Weil under the assumption that the Eisenstein series is absolutely convergent. Later, Kudla and Rallis extended this formula for symplectic-orthogonal dual pairs beyond the range of absolute convergence. In this talk we extend the Siegel-Weil formula for quaternion dual pairs. If there is time, applications include the classification problem of quaternion skew hermitian forms over a number field.

(Yuuki Takai) (   )

An effective isomorphy criterion for mod ℓ Galois representations

In this talk, we consider mod ℓ Galois representations of $\mathbb{Q}$. In particular, we obtain an effective criterion to distinguish two absolutely irreducible 2-dimensional, odd, mod ℓ Galois representations up to isomorphism. Serre's conjecture (now, Khare-Wintenberger's theorem), Sturm's theorem for mod ℓ modular forms, and its modification by Kohnen are used in our proof.

(Yasufumi Hashimoto)   (   )

Asymptotic formulas of class number sums of indefinite binary quadratic forms

It is known that there is a one-to-one correspondence between equivalence classes of primitive indefinite quadratic forms and primitive hyperbolic conjugacy classes of the modular group. This means that, as studied by Sarnak, the asymptotic formula for the class number sum (which is different to Siegel's one) follows from the prime geodesic theorem for the modular group. Recently, Raulf gave asymptotic formulas for the class number sums over the fundamental discriminants on arithmetic progressions. In the present paper, we write down the coefficient of the leading terms of such asymptotic formulas in another way and improve the estimates of the reminder terms.

(Yutaka Konomi)   (   )
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The ideal class groups of dihedral extensions over imaginary quadratic fields and the special values of the Artin L-functions

Let L be a dihedral extension over the rational number field of degree $2l$, where l is an odd prime. Denote by G its Galois group. For another odd prime p, we investigate the relationship between the p-class subgroups defined by the characters of subgroup of G and those defined by the irreducible characters. Moreover, we try to describe, by the special value of the Artin L-function, the order of the p-class subgroup of a dihedral extension over an imaginary quadratic field.

(Kazuaki Miyatani)

Finiteness of Crystalline Cohomology of Higher Level

The main object of this talk, the crystalline cohomology of higher level, is a generalization of the classical crystalline cohomology to "ramified base DVRs," which was introduced by Berthelot around 1990. The integral theory of this cohomology is difficult to treat because the "crystalline Poincare lemma" is very complicated in the higher-level situation. In spite of this complexity, we see in this talk how to prove the finiteness of this cohomology and other fundamental properties.

(Takahiro Nakagawa)

Calculation of p-adic unbounded functions on the unit disc

Let $f = \sum_{n \geq 0} a_n x^n$ be the power series which converge on the open unit disc over p-adic local field. The coefficients of f may be unbounded. ($\Leftrightarrow |a_n| \to \infty (n \to \infty)$) Log-growth of f is defined the order of unboundness of f .

Since relation between log-growth and Frobenius filtrations for solutionsof p-adic differential equations is open problem, to study structure of log-growth may be important.

By the way,Boutabaa and Escassut composed p-adic Nevanlinna theory on the meromorphic functions over open disc. And they proof that f is bounded function if and only if characteristic function of f is bounded.

This time, by generalizing the theorem, it found that correspondence between log-growth of f and growth of characteristic function of f. From this , log-growth of f is caluculated critical radius and of number of zeros of f.

(Kentaro Nakamura)

Zariski density of crystalline representations

In this talk, I will talk about one proof of the theorem concerning Zarisiki denisty of n-dimensional crystalline representations for any positive integer n and for any p-adic field. This result is a generalization of the result of Colmez and Kisin ($n = 2$ and $\mathbb{Q}_p$ case) and the result which I talked at this conference last year ($n = 2$ and any p-adic fields case) . The main two ingredients of the proof are the deformation theory of trianguline B-pairs and the construction of the p-adic families of trianguline representations. In this talk, I want to talk especially about the p-adic families of trianguline representations. Moreover, I will talk about a recent work of Gaetan Chenevier concerning a new construction of the p-adic families of trianguline representations.

(Takahiro Tsushima)   GCOE

On the stable reduction of the modular curve $X_0(p^4)$

By the Deligne-Mumford theorem, a curve C over a local field K has a unique stable model over some finite extension K'/K, as long as the genus of C is greater than one. If defining equations of a curve are given, it is not always easy to compute the stable model of the curve concretely. In our talk, we concentrate on the stable model of a modular curve. The stable models of $X_0(p), X_1(p)$ and $X(p)$ are classically known by works of Igusa and Deligne-Rapoport. B. Edixhoven calculated the stable model of $X_0(p^2)$ in 1990. In 2006, Coleman-McMurdy found the stable model of $X_0(p^3)$ on the basis of the rigid geometry. They use the Gross-Hopkins theory to calculate irreducible components appearing in the stable reduction of $X_0(p^3)$. We will introduce a more elementary method to calculate the defining equations of the irreducible components in the model of $X_0(p^3)$. Starting with Kronecker's polynomial, we will find components by only using blow-up. By this method, we also find the stable reduction of $X_0(p^4)$. Deligne-Lusztig curves for $SL_2(\mathbb{F}_p)$ appear in the stable model of $X_0(p^4)$. In our talk, we will explain how to compute the irreducible components appearing in this model of $X_0(p^4)$.

(Yoichi Mieda)

Variants of formal nearby cycles and applications

The formal nearby cycle for a formal scheme over a complete discrete valuation ring, due to Berkovich, plays a very important role for studies of Shimura varieties and Rapoport-Zink spaces. In this talk, I will introduce variants of the formal nearby cycle and explain its applications to a study of the l-adic cohomology of Rapoport-Zink spaces.

(Satoshi Mochizuki)

Weight, unstable dimension, some conjectures in algebraic geometry via non-commutative motive theory

In the lecture, we consider motive theory as a grammer of how to behave algebaric varieties. More precisely, like as (non)-Euclidean geometry, we think the definition of the usual algebraic varieties as one of a model to do algebaric geometry and propose another model, so called, derived algebaric varieties which include the classical schemes and DG-categories. In this lecture, a non-commutative motive theory, we mean, is studying derived algebraic varieties up to derived Morita or K-equivalences. We recover famous formulas and techniques of algebraic geometry and algebaraic K-theory via the non-commutative motive theory setting. For example, localization, excision, blow-up formula, projective

bundle theorem, Balmer formula, $\mathbb{A}^1$-homotopy invariance for regular noetherian classical schemes, derived Gillet-Waldhausen theorem, Eilenberg swindle. We also define notions of weight and unstable dimension for (derived) algebaraic varieties. Utilizing these notions, we reinterpret some conjectures in algebraic geometry and give partial affirmative answers.

(Shota Kojima)
Infinite Composition of Polynomials

The exponential function e^z can be expressed by infinite composition of polynomials of degree 2. Generalizing this special case, we consider functions defined by infinite composition of polynomials and discuss their analytic properties.

The exponential function e^z can be expressed by infinite composition of polynomials $z + z^2/2^n$ $(n = 1, 2, 3, \cdots)$. Generalizing this special case, we consider functions defined by infinite composition of polynomials and discuss their analytic properties.

(Hajime Kaneko) ((PD))
Algebraic independence of the values of power series

We introduce algebraic independence of the numbers $\xi = \sum_{n=1}^{\infty} \alpha^{-w(n)}$, where $\alpha \geq 2$ is an integer and $(w(n))_{n=1}^{\infty}$ is a strictly increasing sequence of nonnegative integers. In this talk we will give new criteria for algebraic independence of such ξ. Applying our criteria, we prove the algebraic independence of ξ in the case of $\lim_{n\to\infty} w(n+1)/w(n) = 1$, which was impossible by early methods.

(Akihiko Okamoto) 4
Relative Brauer groups and tractability of algebraic function fields in one variable

A field K is said to be tractable when a condition described below on the simultaneous representation of quaternion algebras holds over K. In this talk, we describe the relative Brauer groups of algebraic function fields in one variable over global fields. As an application, we give examples of tractable or nontractable function fields of genus one.

(Daisuke Shiomi) PD
A p-rank of Jacobian for a cyclotomic function field

A cyclotomic function field is defined as adding torsion points of Carlitz module to a rational function field over a finite field with characteristic p. Properties of these fields are remarkably similar to those of cyclotomic number fields. In this talk, we will state some results of a p-rank r_m of Jacobian for a cyclotomic function field K_m. In paticular, we will determine all cyclotomic function fields K_m with $r_m = 0$.

(Yukihiro Uchida) (PD)
Somos 4
Valuations of Somos 4 sequences and local heights on elliptic curves

For an integer $k \geq 4$, a Somos k sequence is a sequence of numbers defined by a certain bilinear recurrence relation of order k. For example, an elliptic divisibility sequence, which consists of values of division polynomials of an elliptic curve, is a Somos 4 sequence. In this talk, we first describe valuations of Somos 4 sequences in terms of local heights on elliptic curves, where we deal with both Archimedean and non-Archimedean valuations. Next, using this description, we study the asymptotic behavior of valuations of Somos 4 sequences.