**Titles and Abstracts**

**ASAKURA, Masanori**
**Title:**An elliptic K3 over **Q**p with finitely many torsion 0-cycles
**Abstract:** This is a joint work with Kanetomo Sato. In this talk, I show that for the elliptic K3 surface X defined by an equation 3y2+x3+(3x+4t4)=0 over **Q**p the p-adic regulator K1(X)⊗**Q**p → H1g(**Q**p, H2(X,**Q**p(2))) is surjective if p=7,11,19,23,31. Here "H1g" denotes the g-part of Bloch-Kato. As a consequence, the torsion subgroup of CH0(X) is finite.

**CHOI, Dohoon**
**Title:** Congruence for Siegel modular forms
**Abstract:** We employ recent results on Jacobi forms to investigate congruences and filtrations of Siegel modular forms of degree 2. In particular, we determine when an analog of Atkin's U(p)-operator applied to a Siegel modular form of degree 2 is nonzero modulo a prime p. Furthermore, we discuss explicit examples to illustrate our results. This is joint work with Y. Choie and O. Richter.

**HAN, Lin**
**Title:** Examples of semistable abelian varieties over Q with good reduction outside a single prime
**Abstract:** In this talk, I will introduce results on examples of semistable abelian varieties over Q using the arguments of Fontaine and Schoof. In order to specify an abelian variety A over Q with good reduction outside a prime p up to isogeny, it's enough to construct its l-divisible group. To do that, we need the following information:
1. Classification of the finite flat simple group schemes of l-power order over Z[1/p] arising as a subgroup of l-torsion of abelian varieties
2. Classification of a certain class of extensions of such simple group schemes
These problems boil down to finding, via class field theory, all the Galois extensions over Q unramified outside p and l, satisfying bounds of Fontaine and Odlyzko with additional properties.

**HARADA, Shinya**
**Title:** Hasse-Weil zeta function of absolutely irreducible SL2-representations of the figure 8 knot group
**Abstract:** In this talk, we will give explicit descriptions of Weil-type zeta functions defined by the numbers of GL2-conjugacy classes of absolutely irreducible SL2-representations of the figure 8 knot group over finite fields. Then we prove that the Hasse-Weil type zeta function of absolutely irreducible SL2-representations of the figure 8 knot group over finite fields has interesting arithmetic properties such as meromorphic continuation and a functional equation, and its central value has relations with other knot invariants.

**HATTORI, Shin**
**Title:** On a ramification bound of semi-stable torsion representations over a local field
**Abstract:** Let k be a perfect field of characteristic p > 0, K0 = Frac (W(k)) and K be a finite totally ramified extension of K0 of degree e. Let r be a non-negative integer with r < p-1. In this paper, we give a bound of the upper ramification of the torsion representations of the semi-stable p-adic representations with Hodge-Tate weights in {0,...,r}. Namely, we show the upper numbering ramification group G(j) (à la Fontaine) acts trivially on the pn-torsion representations for j > u(K,r,n), where u(K,0,n) = 0, u(K,1,n) = 1 + e(n+1/(p-1)) and u(K,r,n) = 1 - p-n+ e(n+r/(p-1)).

**HIRANOUCHI, Toshiro**
**Title:** Flat modules and Gröbner bases over truncated discrete valuation rings (joint work with Y. Taguchi)
**Abstract:**We present basic properties of Gröbner bases of submodules of a free module of finite rank over a polynomial ring with coefficients in a tdvr (:= truncated discrete valuations ring). As an application, we give a criterion for an algebra of finite type over a tdvr to be flat and prove the existence of a flat lifting of a flat algebra over a tdvr.

**IM, Bo-Hae**
**Title:** Weak approximation for linear systems of quadrics
**Abstract:** We give local conditions at ∞ ensuring that the intersection of n quadrics in **P**N, N≥ n, satisfies weak approximation. This is the joint work with Michael Larsen (at Indiana University).

**JANG, Junmyeong**
**Title:** Semi-stable fibrations of generic p-rank 0 and p-rank reduction problems
**Abstract:** For a semi-stable fibration from a proper smooth surface to a proper smooth curve over the field of complex numbers, the semi-positivity theorem holds. But over a filed of positive characteristic, the semi-positivity theorem is not valid in general. In this talk, we will see for a semi-stable fibration of generic p-rank 0, the semi-positivity theorem fails after sufficiently many Frobenius base changes. And using this result we will also see the p-rank 0 primes for a certain non-closed point in the moduli spaces of curves over a number field is finite.

**LEE, Dong Uk**
**Title:** Nonemptiness of the μ-ordinary locus of Shimura varieties of Hodge type
**Abstract:** We prove that every Shimura variety of Hodge type has nonempty μ-ordinary locus at the primes of its reflex field where the group is unramified. We also verify a nonemptiness criterion of the ordinary locus for Hodge-type Shimura varieties.

**MOON, Hyunsuk**
**Title:** On the structure of the Mordell-Weil groups of Jacobians over infinite number fields
**Abstract:** Frey and Jarden have asked whether the Mordell-Weil group of every nonzero abelian variety defined over a number field K has infinite Mordell-Weil rank over the maximal abelian extension of K. Rosen and Wong proved the infiniteness of the rank for the Jacobian of any curve that can be realized over K as a cyclic geometrically irreducible cover of the projective line. In this talk, we will give another proof of Rosen-Wong's result together with slightly more precise information on the structure of the Mordell-Weil group.

**NAKAMURA, Kentaro**
**Title:**Classification of 2 dimensional split trianguline representations of p-adic fields
**Abstract:** Split trianguline representation is a class of p-adic representations of Galois groups of p-adic fields, which plays essential roles in Colmez's p-adic local Langlands correspondence for GL2(Qp). In my talk, I will completely classify 2 dimensional split trianguline representations for any p-adic fields.

**OTSUKI, Rei**
**Title:** A homomorphism concerning two systems for an elliptic curve
**Abstract:** There are some results about the Selmer groups in Iwasawa theory for elliptic curves with supersingular reduction, using the correspondence between the zeta elements defined by Kato and the modular elements defined by Mazur-Tate through a certain homomorphism. We will talk about the generalization of the homomorphism and its application.

**YAMAZAKI, Takao**
**Title:** Counter examples to variants of the Milnor-Bloch-Kato conjecture
**Abstract:** Galois symbol on semi-abelian varieties has been conjectured to be injective, as a generalization of the Milnor-Bloch-Kato conjecture. After a review on its role in higher dimensional class field theory, I will present a counter example to the injectivity conjecture, and discuss its relation to the theory of motivic cohomology. (Joint work with Michael Spiess.)

**YOSHIDA, Manabu**
**Title:** Ramification of local fields and Fontaine's property (Pm)
**Abstract:** Let K be a complete discrete valuation field with perfect residue field. Classically a ramification filtration Gj of a finite Galois extension L over K was defined by Serre. Then Fontaine characterized the greatest break of the ramification filtration by a certain property (Pm) of the extension L/K for real numbers m. By refining Fontaine's result, we obtain a new interpretation of the ramification filtration in terms of the property (Pm).