

# RIMS Workshop

## Algebraic Number Theory and Related Topics

Organizers:

Hiroki Sumida-Takahashi (Tokushima University)

Yasuo Ohno (Tohoku University)

Date: November 30 (Mon) – December 4 (Fri), 2015

Place: Room 420, Research Institute for Mathematical Sciences (RIMS),  
Kyoto University, Kyoto 606-8502, JAPAN

November 30 (Mon)

9:45 – 10:00 Introduction

10:00 – 10:45 Minoru Hirose (Kyoto University)

Shintani zeta functions and Gross conjecture

10:55 – 11:40 Kazuto Ota (Keio University)

Kato's Euler system and the Mazur-Tate refined conjecture of BSD type

11:50 – 12:40 Florian Sprung (Princeton University/IAS)

Integral Euler systems and Iwasawa theory

14:10 – 14:55 Jun Ueki (Kyushu University)

Theory of genera and Iwasawa invariants for 3-manifolds

15:10 – 15:55 Kotaro Sugahara (Kyushu University)

Central extensions and reciprocity law for arithmetic surfaces

16:10 – 17:00 Takao Komatsu (Wuhan University)

Bernoulli-Carlitz numbers and Cauchy-Carlitz numbers

December 1 (Tue)

9:30 – 10:15 Keiji Adachi (Kyushu University)

Distance to cusps and stability

10:30 – 11:15 Megumi Takata (Kyushu University)

The infinite base change lifting associated to an APF extension of a mixed  
characteristic local field

11:30 – 12:30 Yuichiro Hoshi (RIMS, Kyoto University)

Introduction to inter-universal Teichmüller theory I (Survey)

14:05 – 14:50 Yoshinosuke Hirakawa (Keio University)

On the descent of certain modular Calabi-Yau varieties via the Cynk-Hulek construction

15:05 – 15:55 Hironori Shiga (Chiba University)

One visualization of Shimura's complex multiplication theorem via hypergeometric  
modular functions (joint work with Atsuhira Nagano)

16:10 – 17:00 Keisuke Arai (Tokyo Denki University)

Points on Shimura curves rational over imaginary quadratic fields in the non-split case

December 2 (Wed)

- 9:00 – 9:45 Kento Yamamoto (Chuo University)  
On generators of the Chow group of zero-cycles on diagonal cubic surfaces over 3-adic fields
- 10:00 – 10:45 Wataru Kai (University of Tokyo)  
A moving lemma in the affine space with modulus
- 11:00 – 11:45 Hiroyasu Miyazaki (University of Tokyo)  
On moving algebraic cycles with modulus of bounded degree
- 12:00 – 13:00 Yuichiro Hoshi (RIMS, Kyoto University)  
Introduction to inter-universal Teichmüller theory II (Survey)
- Afternoon Meeting of the steering committee (mainly for the committee members)

December 3 (Thu)

- 9:30 – 10:15 Arata Minamide (RIMS, Kyoto University)  
Indecomposability of various profinite groups arising from hyperbolic curves
- 10:30 – 11:15 Yu Yang (RIMS, Kyoto University)  
On the existence, geometry and  $p$ -ranks of vertical fibers of coverings of curves
- 11:30 – 12:30 Yuichiro Hoshi (RIMS, Kyoto University)  
Introduction to inter-universal Teichmüller theory III (Survey)
- 14:00 – 14:45 Yasuhiro Wakabayashi (University of Tokyo)  
Ordinariness and duality of dormant opers
- 15:00 – 15:45 Yu Iijima (RIMS, Kyoto University)  
Difference between  $l$ -adic Galois representations and pro- $l$  outer Galois representations associated to hyperbolic curves
- 16:00 – 17:00 Hidekazu Furusho (Nagoya University)  
Galois action on knots (Invited)
- 18:00 – 20:00 Conference Banquet

December 4 (Fri)

- 9:30 – 10:15 Ippei Nagamachi (University of Tokyo)  
On a good reduction criterion for proper polycurves with sections
- 10:30 – 11:20 Yuji Odaka (Kyoto University)  
Canonical Kähler metrics and arithmetics - Generalising Faltings height
- 11:35 – 12:25 Chris Hall (University of Wyoming)  
Specialization and big monodromy
- 13:50 – 14:40 Haoyu Hu (University of Tokyo)  
Semi-continuity of total dimension divisors for  $l$ -adic sheaves
- 14:50 – 15:35 Kazuki Tokimoto (University of Tokyo)  
Affinoids in the Lubin-Tate perfectoid space and some cases of the local Langlands correspondence
- 15:45 – 16:40 Yoichi Mieda (University of Tokyo)  
Non-abelian Lubin-Tate theory and Kloosterman sheaves

Program Committee: Hiroki Sumida-Takahashi (Tokushima Univ.), Yasuo Ohno (Tohoku Univ.), Takahiro Tsushima (Chiba Univ.)