

PREFACE

This volume of *Kôkyûroku Bessatsu* is a collection of research and survey articles which were contributed by invited speakers in the RIMS workshop “Algebraic Number Theory and Related Topics”, which was held at the Research Institute for Mathematical Sciences (RIMS) of Kyoto University from December 8 through December 12, 2008.

The aim of this conference was to overview recent developments in algebraic number theory in a broadest sense that ranges from arithmetic algebraic geometry to number theory with emphasis on analytic arithmetic functions or on representation theory of algebraic groups. There were given 22 lectures at the workshop and more than 150 attendants during the conference.

It is our great pleasure that this volume collects 16 contributions from the speakers. All papers here are refereed and are in final form.

The workshop was organized by Takashi ICHIKAWA, Kazuo MATSUNO and myself, who have also acted as the editors of this volume.

We would like to express our sincere gratitude to all participants, the invited speakers and the anonymous referees of articles of this volume, who have made the symposium successful and scientifically rich. Finally, our special thanks go to the staffs of RIMS for their support, especially to Professor Akio TAMAGAWA for many pieces of helpful advice to our organization of the symposium.

the chief editor
Hiroaki NAKAMURA

PROGRAM

Algebraic Number Theory and Related Topics

Date: December 8–12, 2008

Place: Room 420, RIMS, Kyoto University

Organizers: Hiroaki Nakamura (Okayama University)

Takashi Ichikawa (Saga University)

December 8, Monday

- 10:00 – 10:50 Yuichiro Taguchi (Kyushu University)
Introduction to Serre’s modularity conjecture on Galois representations, I
- 11:10 – 12:00 Seidai Yasuda (Kyoto University, RIMS)
Introduction to Serre’s modularity conjecture on Galois representations, II
- 13:30 – 14:20 Yoshiyuki Tomiyama (Kyushu University)
Lifting Galois representations over arbitrary number fields
- 14:40 – 15:30 Naoki Imai (University of Tokyo)
Kisin conjecture on the moduli spaces of finite flat models
- 16:10 – 17:00 Toshiro Hiranouchi (Kyoto University, RIMS)
Ramification of truncated discrete valuation rings
(joint work with Yuichiro Taguchi)

December 9, Tuesday

- 10:00 – 10:50 Moritz Kerz (University of Regensburg)
Topology of higher idele class groups
- 11:10 – 12:00 Marc-Hubert Nicole (Université Paris 7 Denis Diderot)
Purity of stratifications of Shimura varieties

- 13:30 – 14:20 Tetsushi Ito (Kyoto University)
On the l -adic cohomology of Siegel threefolds in characteristic p
- 14:40 – 15:30 Yuichiro Hoshi (Kyoto University, RIMS)
On the combinatorial cuspidalizations and the faithfulness of the outer Galois representations of hyperbolic curves
(joint work with Shinichi Mochizuki)
- 16:10 – 17:00 Masao Ooi (Kyoto University)
Center-freeness of absolute Galois groups of some fields

December 10, Wednesday

- 10:00 – 10:50 Masanari Kida (University of Electro-Communications)
Computing algebraic structures with MAGMA
- 11:10 – 12:00 Tatsushi Tanaka (Kyushu University)
Algebraic interpretation of Kawashima relation for multiple zeta values and its applications

December 11, Thursday

- 10:00 – 10:50 Yoshihiro Ishikawa (Okayama University)
Ramification theory of automorphic representations – introduction to JPSS theory –
- 11:10 – 12:00 Tadashi Miyazaki (University of Tokyo)
Fourier expansions of the Eisenstein series on $GL(3, \mathbb{R})$ attached to elliptic cusp forms
- 13:30 – 14:20 Lin Weng (Kyushu University)
Stability and Arithmetic
- 14:40 – 15:30 Tomoyoshi Ibukiyama (Osaka University)
Type numbers of quaternion hermitian lattices, quinary quadratic forms, and supersingular abelian varieties
- 16:10 – 17:00 Yasutaka Ihara
On L functions over function fields
(joint work with Kohji Matsumoto)

December 12, Friday

- 10:00 – 10:50 Shuji Yamamoto (University of Tokyo)
On Shintani's ray class invariant for totally real number fields
- 11:10 – 12:00 Takeo Okazaki (Kyoto University)
Construction of p -adic measures for automorphic L -functions of $GL(2)$ and $GSp(2)$
- 13:30 – 14:20 Olivier Fouquet (Osaka University)
Dihedral Iwasawa theory of quaternionic automorphic forms
- 14:40 – 15:30 Takashi Hara (University of Tokyo)
Iwasawa theory of totally real fields for certain non-commutative p -extensions
- 16:10 – 17:00 Tadashi Ochiai (Osaka University)
Iwasawa theory for nearly ordinary deformations of Hilbert modular forms

Program committee members: Hiroaki Nakamura, Takashi Ichikawa,
Kazuo Matsuno (Tsuda College)

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