



## RIMS Workshop

### Research on algebraic combinatorics, related groups and algebras

Organizers<sup>†</sup> : Hiroshi Nozaki (Aichi University of Education)  
Sho Suda (National Defense Academy of Japan)

Date: December 16 (Mon), 10:00 – December 19 (Thu), 12:30

Location: Room 420, RIMS, Kyoto University

### PROGRAM

#### December 16 (Mon)

10:00–10:50 Hideaki Morita (Muroran Institute of Technology)

The Ihara expression of combinatorial zeta functions for finite simple graphs

11:00–11:50 Ayaka Ishikawa (Yokohama National University)

The Ihara expression of generalized graph zeta functions for finite digraphs

13:20–13:50 Kiyoto Yoshino (Tohoku University)

An embedding of an integral lattice of rank  $n$  into a unimodular lattice of rank  $n + 2$  and its applications to  $s$ -integrability

14:00–14:50 Keiji Ito (Tohoku University)

Fusions in fiber commutative coherent configurations

15:10–16:00 Hirotake Kurihara (National Institute of Technology, Kitakyushu College)

Relations among invariants of symmetric  $R$ -spaces and distance-transitive graphs from great antipodal sets

16:10–17:00 Norihide Tokushige (Ryukyu University)

Recent applications of the slice rank method

---

<sup>†</sup>The organizers thank the following researchers for their advice in constructing the program. Akihiro Munemasa (Tohoku University), Yugen Takegahara (Muroran Institute of Technology), Naoki Chigira (Kumamoto University), Naoko Kunugi (Tokyo University of Science), Atsushi Matsuo (The University of Tokyo), Manabu Oura (Kanazawa University), Hiroki Shimakura (Tohoku University)

December 17 (Tue)

10:00–10:50 Naoki Chigira (Kumamoto University)

An integer matrix for a finite group

11:00–11:30 Kyohei Matsumoto (Kumamoto University)

Centrally large subgroups of finite groups

13:20–13:50 Takahiro Yabe (The University of Tokyo)

On the classification of dihedral axial algebras

14:00–14:50 Lizhong Wang (Peking University)

On local moonshine

15:10–16:00 Toshiyuki Abe (Ehime University)

On  $V$ -internal intertwining operators

16:10–17:00 Masahiko Miyamoto (University of Tsukuba, Academia Sinica)

Deep holes of Leech lattice VOA

December 18 (Wed)

10:00–10:50 Sebastian Cioabă (University of Delaware)

Eigenvalues of graphs and spectral Moore theorems

11:00–11:50 Tatsuro Ito (Anhui University)

The Weisfeiler–Leman stability: the case of trees

13:20–13:50 Nur Hamid (Kanazawa University), Manabu Oura (Kanazawa University), Tsuyoshi Miezeki (Ryukyu University)

Jacobi polynomials of binary codes

14:00–14:50 Masanori Sawa (Kobe University)

Zeros of classical quasi-orthogonal polynomials and application to spherical design theory

15:10–16:00 Yan Zhu (University of Shanghai for Science and Technology)

Relative  $t$ -designs on one shell of Johnson association schemes

16:10–17:00 Hajime Tanaka (Tohoku University)

Tight relative  $t$ -designs on two shells in hypercubes, and Hahn and Hermite polynomials

December 19 (Thu)

10:00–10:50 Yugen Takegahara (Muroran Institute of Technology)

$p$ -adic properties of the number of permutation representations

11:00–11:30 Ryotaro Koshio (Tokyo University of Science), Yuta Kosakai (Shibaura Institute of Technology)

Support  $\tau$ -tilting modules over blocks of finite groups

11:40–12:30 Hiroki Sasaki (Shinshu University)

Cohomology rings of block ideals with defect groups isomorphic to wreathed 2-groups