

2023 The Mathematical Society of Japan

AUTUMN MEETING

Dates: September 20th (Wed)–23rd (Sat), 2023

Venue: Tohoku University

6–3 Aramaki Aza-Aoba, Aoba-ku

Sendai, 980-8578, Japan

Contact to: Graduate School of Science, Tohoku University

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The Mathematical Society of Japan

	I A200	II B200	III B201	IV B202	V B203	VI B101	VII B102	VIII B103	IX C200	
20th (Wed)	Geometry 9:30–11:45 14:15–16:15	Algebra 9:30–11:45 15:30–18:00	Topology 9:30–12:00 15:40–17:30	Functional Analysis 10:00–12:00	Complex Analysis 9:30–11:30 14:15–15:15	Infinite Analysis 9:30–12:00	Statistics and Probability 9:30–11:30	Applied Mathematics 9:30–11:50 14:15–16:10	Functional Equations 9:00–12:00 14:15–16:30	
	Featured Invited Talks					13:00–14:00				
	Invited Talk 16:30–17:30	Invited Talk 14:15–15:15	Invited Talk 14:20–15:20	Invited Talk 14:15–15:15	Invited Talk 15:35–16:35	Invited Talk 14:15–15:15	Invited Talks 14:15–15:15 15:30–16:30	Invited Talk 16:30–17:30	Invited Talk 16:45–17:45	
21st (Thu)	Geometry 9:40–11:30	Algebra 9:15–10:45 13:00–14:15 Invited Talk 11:00–12:00	Topology 9:30–11:30 13:00–14:00	Functional Analysis 9:30–11:15 Invited Talk 13:15–14:15	Complex Analysis 9:30–11:30 Invited Talk 13:00–14:00	Infinite Analysis 9:30–10:45 Invited Talk 11:00–12:00	Statistics and Probability 9:30–11:30	Applied Mathematics 9:30–11:30 13:00–14:15	Functional Equations 9:00–12:00 Invited Talk 13:00–14:00	
	MSJ Prizes Presentation (Kawauchi Hagi Hall)				 (14:45–15:15)				
	Plenary Talks (Kawauchi Hagi Hall)					Autumn Prize Winner (15:30–16:30) Shuji Saito (Univ. of Tokyo) (16:45–17:45)				
22nd (Fri)	Geometry 9:30–11:45 14:15–16:15	Algebra 9:15–11:30 14:15–16:15	Topology 9:30–12:00 15:40–17:00	Functional Analysis 9:30–11:00 14:15–16:00	Real Analysis 9:00–12:00 14:15–15:25	Found. of Math. & Hist. of Math. 9:20–10:30 14:15–16:45	Statistics and Probability 9:30–11:30	Applied Mathematics 9:30–12:00 14:15–16:30	Functional Equations 9:15–12:00 14:15–16:30	
	Featured Invited Talks					13:00–14:00				
	Invited Talk 16:30–17:30	Invited Talk 16:30–17:30	Invited Talk 14:20–15:20	Invited Talk 16:15–17:15	Invited Talks 15:40–16:40 17:00–18:00	Invited Talk 10:45–11:45	Invited Talks 14:15–15:15 15:30–16:30	Invited Talk 16:45–17:45	Invited Talk 16:45–17:45	
23rd (Sat)	Geometry 9:30–10:45	Algebra 9:15–10:45 14:15–17:00			Real Analysis 9:30–12:00 14:15–16:25	Found. of Math. & Hist. of Math. 9:20–10:30 14:15–16:30	Statistics and Probability 9:30–11:30 14:15–16:20	Applied Mathematics 9:30–12:00 14:15–16:00	Functional Equations 9:30–12:00 14:15–16:00	
	Featured Invited Talks					13:00–14:00				
	Invited Talk 11:00–12:00	Invited Talk 11:00–12:00			Invited Talk 16:45–17:45	Invited Talk 10:45–11:45		Invited Talk 16:15–17:15	Invited Talk 16:15–17:15	

MSJ Autumn Meeting 2023

Organizing Committee Chair of Organizing Committee Takashi SHIOYA (Tohoku Univ.)
 Chair of Executive Committee Hiroyuki TAKAMURA (Tohoku Univ.)
 Vice Chair of Executive Committee Jun MASAMUNE (Tohoku Univ.)

Sponsor The Mathematical Society of Japan

Co-organizer Graduate School of Science, Tohoku University

Support Sendai Tourism, Convention and International Association

Acknowledgement MSJ owe this annual meeting to the collaboration of Tohoku University. Here we cordially would like to express our acknowledgement.

Plenary Talks

September 21st (Thu) Tohoku University Centennial Hall Kawauchi Hagi Hall

Autumn Prize Winner (15:30–16:30)

Shuji Saito (Univ. of Tokyo) Recent progresses on motivic cohomology (16:45–17:45)

Featured Invited Talks

September 20th (Wed)

Conference Room I

Katsunori Iwasaki (Hokkaido Univ.) Hypergeometric groups and dynamics on K3 surfaces (13:00–14:00)

Conference Room II

Tomohiro Okuma (Yamagata Univ.) Analytic invariants of complex surface singularities (13:00–14:00)

Conference Room IX

Guest Talk from Korean Mathematical Society

Jaeyoung Byeon (KAIST) Prescribed Lorentzian mean curvature hypersurfaces and the Born–Infeld model (13:00–14:00)

September 22nd (Fri)

Conference Room I

Kazuhiro Kuwae (Fukuoka Univ.) Analysis and geometry on metric measure spaces having curvature lower bounds (13:00–14:00)

Conference Room IX

Fumio Hiai (Tohoku Univ.*) Data-processing inequalities and their equality conditions in quantum information (13:00–14:00)

September 23rd (Sat)

Conference Room I

Koichi Nagano (Univ. of Tsukuba) Geometric topology of metric spaces with upper curvature bounds (13:00–14:00)

Conference Room IX

Shinnosuke Okawa (Osaka Univ.) Noncommutative algebraic geometry (13:00–14:00)

Talks Invited by Research Sections and Special Session

September 20th (Wed)

Algebra (Conference Room II)

Masaya Yasuda (Rikkyo Univ.) Introduction to mathematical cryptography: Lattice-based and isogeny-based cryptography (14:15–15:15)

Geometry (Conference Room I)

Boris Doubrov (Belarusian State Univ.) Extrinsic nilpotent differential geometry and linear PDEs of finite type (16:30–17:30)

Complex Analysis (Conference Room V)

Michio Seto (Nat. Defense Acad. of Japan) Holomorphic functions vs positive definite matrices (15:35–16:35)

Functional Equations (Conference Room IX)

Yoshihisa Miyanishi (Shinshu Univ.) Spectral theory of layer potential type operators and its applications (16:45–17:45)

Functional Analysis (Conference Room IV)

Michiyuki Watanabe (Okayama Univ. of Sci.) Inverse N-body scattering with the time-dependent Hartree–Fock approximation (14:15–15:15)

Statistics and Probability (Conference Room VII)

Kouhei Matsuura (Univ. of Tsukuba) Discrete approximation of reflected Brownian motions by Markov chains on partitions of domains (14:15–15:15)

Ryuya Namba (Kyoto Sangyo Univ.) Limit theorems for random walks on nilpotent covering graphs (15:30–16:30)

Applied Mathematics (Conference Room VIII)

Shoichi Tsuchiya (Senshu Univ.) HISTs and Halin graphs (16:30–17:30)

Topology (Conference Room III)

Teruaki Kitano (Soka Univ.) Epimorphisms between knot groups and relations to geometric structures and invariants of a knot (14:20–15:20)

Infinite Analysis (Conference Room VI)

Saiei-Jaeyeong Matsubara-Heo (Kumamoto Univ./Kumamoto Univ.) Algebraic equations and hypergeometric equations (14:15–15:15)

September 21st (Thu)

Algebra (Conference Room II)

Sho Tanimoto (Nagoya Univ.) Exceptional sets in Manin’s conjecture and their applications to algebraic geometry (11:00–12:00)

Complex Analysis (Conference Room V)

Taiji Marugame (Univ. of Electro-Comm.) Hyperkähler ambient metrics associated with twistor CR manifolds (13:00–14:00)

Functional Equations (Conference Room IX)

- Yoshihito Kohsaka (Kobe Univ.) A threshold-type approximation algorithm for the Willmore flow (13:00–14:00)

Functional Analysis (Conference Room IV)

- Koichi Tojo (RIKEN) Classification of irreducible symmetric spaces which admit standard compact Clifford–Klein forms (13:15–14:15)

Infinite Analysis (Conference Room VI)

- Makiko Sasada (Univ. of Tokyo) Discrete integrable systems from probabilistic perspectives (11:00–12:00)

September 22nd (Fri)

Foundation of Mathematics and History of Mathematics (Conference Room VI)

- Antonia Karaisl (Waseda Univ.) Wasan 2.0: Building an online sangaku archive (10:45–11:45)

Algebra (Conference Room II)

- Taiki Shibata (Okayama Univ. of Sci.) Representations of algebraic supergroups (16:30–17:30)

Geometry (Conference Room I)

- Kotaro Kawai (BIMSA/Osaka City Univ.) Manifolds with exceptional holonomy and mirrors of their submanifolds (16:30–17:30)

Functional Equations (Conference Room IX)

- Takafumi Akahori (Shizuoka Univ.) Global dynamics above the ground state threshold for non-linear Schrödinger equations (16:45–17:45)

Real Analysis (Conference Room V)

Award Lecture for the 2022 MSJ Analysis Prize

- Eiichi Nakai (Ibaraki Univ.) Generalized Campanato spaces with variable growth condition and related topics (15:40–16:40)

- Toshiharu Kawasaki (Tamagawa Univ.) On some directions of extension of the integral (17:00–18:00)

Functional Analysis (Conference Room IV)

- Shiho Oi (Niigata Univ.) The relationship between norm, algebraic, and order structure of Banach algebras (16:15–17:15)

Statistics and Probability (Conference Room VII)

- Daisuke Kurisu (Univ. of Tokyo) Modeling and statistical inference for nonstationary spatial data (14:15–15:15)

- Ayaka Sakata (Inst. of Stat. Math.) Probabilistic inference with graphical models for regression problems (15:30–16:30)

Applied Mathematics (Conference Room VIII)

Award Lecture for the 2022 Applied Mathematics Prize

- Shin-ichiro Ei (Hokkaido Univ.) On pattern formation problem and its contraction (16:45–17:45)

Topology (Conference Room III)

- Kouichi Yasui (Osaka Univ.) Smooth structures on 4-manifolds and genus functions (14:20–15:20)

September 23rd (Sat)

Foundation of Mathematics and History of Mathematics (Conference Room VI)

Kenta Tsukuura (Hosei Univ.) The quotients of Prikry-type forcings and Saturated ideals
 (10:45–11:45)

Algebra (Conference Room II)

Haruhisa Enomoto On some classes of subcategories of abelian categories (11:00–12:00)
 (Osaka Metro. Univ.)

Geometry (Conference Room I)

Daisuke Kazukawa (Kyushu Univ.) Convergence theory of metric measure spaces based on the
 concentration of measure phenomenon (11:00–12:00)

Functional Equations (Conference Room IX)

Hirokazu Saito Asymptotic stability of the trivial steady state for the two-
 (Univ. of Electro-Comm.) phase Navier–Stokes equations (16:15–17:15)

Real Analysis (Conference Room V)

Yasuhito Miyamoto (Univ. of Tokyo) Structure of positive radial solutions for supercritical elliptic
 problems (16:45–17:45)

Applied Mathematics (Conference Room VIII)

Kenta Ishimoto (Kyoto Univ.) Jeffery’s orbits and hydrodynamic shape of life (16:15–17:15)

Open Lectures for Citizens

Date: September 23rd (Sat) 14:00–16:40

Venue: Conference room, 2F, Tohoku University Centennial Hall Kawauchi Hagi Hall

Sponsored by: The Mathematical Society of Japan

Supported by: Graduate School of Science, Tohoku University

Program: Opening Speech (14:05–14:10)
Seiichi Kamada (President of MSJ/Osaka Univ.)

Lecture 1: “Discovery of i and Geometry of Wave Fronts” (14:15–15:15)
Reiko Miyaoka (Tohoku Univ.)

Lecture 2: “Intersection of Mathematics and Medical Treatment —A Mathematical Model
on a Therapy of Cancer—” (15:30–16:30)
Shinya Okabe (Tohoku Univ.)

Web Page: <https://www.mathsoc.jp/en/meeting/tohoku23sept/>

Foundation of Mathematics and History of Mathematics

September 22nd (Fri) Conference Room VI

9:20–10:30

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|---|---|---|
| 1 | <u>Tsukane Ogawa</u> (Yokkaichi Univ.)
<u>Noriko Tanaka</u> (Naragakuen Univ.) | Treatment of polynomial in Oka Yukitada's <i>Kijutsu Kairohou</i> (A method to solve the path to create a formula) in the Takuma School 15 |
| 2 | <u>Noriko Tanaka</u> (Naragakuen Univ.)
<u>Tsukane Ogawa</u> (Yokkaichi Univ.) | Plane geometry solution devices in Oka Yukitada's "Kijutsu Kairohou" (A method to solve the path to create a formula) in the Takuma School 15 |
| 3 | Shunji Horiguchi | Relations between Murase Yoshiyasu general recurrence formula, general Newton method, and general Mandelbrot recurrence formula 15 |
| 4 | <u>Makoto Tamura</u> (Osaka Sangyo Univ.) | On the methods by Wang Xiaotong for right triangles 15 |

10:45–11:45 Talk Invited by Section on Foundation and History of Mathematics

Antonia Karaisl (Waseda Univ.) Wasan 2.0: Building an online sangaku archive

12:00–12:15 Mathematics History Team Meeting

14:15–16:45

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| 5 | <u>Nobu-Yuki Suzuki</u> (Shizuoka Univ.) | A supplementary note on a weak version of the existence property in intermediate predicate logics 15 |
| 6 | <u>Tatsuya Shimura</u> (Nihon Univ.) | A generalization of Minari's theorem on disjunction property 15 |
| 7 | <u>Tatsuya Shimura</u> (Nihon Univ.) | Cut-elimination for the modal logic $\mathbf{K4Z}_{14}^+$ 15 |
| 8 | <u>Haruka Kogure</u> (Kanazawa Univ.)
<u>Taishi Kurahashi</u> (Kobe Univ.) | On the conservation results for local reflection principles 15 |
| 9 | <u>Yuta Sato</u> (Kobe Univ.)
<u>Taishi Kurahashi</u> (Kobe Univ.) | The finite frame property of some extensions of the pure logic of necessitation 15 |
| 10 | <u>Ryo Kashima</u> (Tokyo Tech)
<u>Taishi Kurahashi</u> (Kobe Univ.)
<u>Sohei Iwata</u> (Aichi Gakuin Univ.) | Cut-free sequent calculi for the provability logic D 15 |
| 11 | <u>Toshio Suzuki</u> (Tokyo Metro. Univ.) | Equilibria of AND-OR trees without assumptions on tree shapes 15 |
| 12 | <u>Masahiro Kumabe</u>
(Open Univ. of Japan)
<u>Kenshi Miyabe</u> (Meiji Univ.)
<u>Toshio Suzuki</u> (Tokyo Metro. Univ.) | Characterizations of Solovay reducibility via query restriction for signed-digit representation 15 |
| 13 | <u>Kohtaro Tadaki</u> (Chubu Univ.) | A refinement of quantum information theory by algorithmic randomness VII 15 |

September 23rd (Sat) Conference Room VI

9:20–10:30

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|----|--|---|
| 14 | <u>Yudai Suzuki</u> (Tohoku Univ.)
<u>Keita Yokoyama</u> (Tohoku Univ.) | On the Π_2^1 part of $\Pi_1^1\text{-CA}_0$ 15 |
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15	<u>Hiroyuki Ikari</u> (Tohoku Univ.) Keita Yokoyama (Tohoku Univ.)	On Π_1^1 -conservativeness between RT^2 and $B\Sigma_3^0$	15
16	Hisashi Aratake (Kyoto Univ.)	On the class of models represented by sheaves	15
17	<u>Hiroataka Kikyo</u> (Kobe Univ.) Akito Tsuboi (Univ. of Tsukuba*)	On cyclic automorphisms	15

10:45–11:45 Talk Invited by Section on Foundation and History of Mathematics

Kenta Tsukuura (Hosei Univ.) The quotients of Prikry-type forcings and Saturated ideals

12:00–12:15 Research Section Assembly**14:15–16:30**

18	Toshimichi Usuba (Waseda Univ.)	Loś's theorem without the axiom of choice	15
19	<u>Rihito Takase</u> (Kobe Univ.) Taishi Kurahashi (Kobe Univ.)	Modal logic of provability and forcing	15
20	<u>Yasushi Hirata</u> (Kanagawa Univ.) Nobuyuki Kemoto (Oita Univ.) Yukinobu Yajima (Kanagawa Univ.*)	Countable paracompactness and C^* -embeddings of closed discrete subsets in subspaces of products of ordinals	15
21	Tatsuya Goto (Kobe Univ.)	Game theoretic variations of cardinal invariants	15
22	Takashi Yamazoe (Kobe Univ.)	Evasion number and Cichoń's diagram	15
23	Yusuke Hayashi (Kobe Univ.)	Dominating number generalized to \aleph_ω	15
24	Toshimasa Tanno (Kobe Univ.)	Stationary tower forcings and universally Baire sets	15
25	Teruyuki Yorioka (Shizuoka Univ.)	Todorćević's fragments of Martin's Axiom and variations of uniformizations of ladder system colorings	15

Algebra

September 20th (Wed) Conference Room II

9:30–11:45

1	Kohichi Ohki (OK Lab. Co. Ltd.)	Proof of Riemann hypothesis	10
2	Daisuke Shiomi (Yamagata Univ.)	A polynomial analogue of Girstmair's formulas	10
3	<u>Manabu Yoshida</u> (Toyama Nat. Coll. of Tech.) Shun'ichi Yokoyama (Tokyo Metro. Univ.)	On the computation of all extensions of a p -adic field of characteristic p	15
4	Wataru Takeda (Tokyo Univ. of Sci.)	Existence of the solutions to the Brocard–Ramanujan problem for norm forms	15
5	Maozhou Huang (Tokyo Tech)	On the ramification of the torsion points of Drinfeld modules	15

- 6 Xuanzhong Dai (Kyoto Univ.) Chiral de Rham complex and the Rankin–Cohen brackets 15
 Bailin Song
 (Univ. of Sci. Tech. of China)
- 7 Masato Kobayashi (Kanagawa Univ.) Ramanujan differential equations, signed Eisenstein series, Hankel de-
 terminants 15
- 8 Tadaaki Igawa On averages of indexes of congruence subgroups in the modular group II
Makoto Minamide (Yamaguchi Univ.) 10
 Yoshio Tanigawa

14:15–15:15 Talk Invited by Algebra Section

- Masaya Yasuda (Rikkyo Univ.) Introduction to mathematical cryptography: Lattice-based and isogeny-
 based cryptography

15:30–18:00

- 9 Tomoyoshi Ibukiyama (Osaka Univ.*) Genus character L functions of quadratic orders in an adelic way 10
- 10 Yuta Katayama (Tokyo Univ. of Sci.) Hecke L -functions of certain subextensions in an extraspecial extension
 15
- 11 Shota Inoue (Tokyo Tech) Joint value distribution of Dirichlet L -functions in the strip $1/2 < \sigma < 1$
Junxian Li (Univ. Bonn) 15
- 12 Hirotaka Kobayashi (Nagoya Univ.) On discrete mean-values of the Riemann zeta function 10
- 13 Yoshiaki Okumura (Toyo Univ.) Chebyshev’s bias for Fermat curves of odd prime degree 10
- 14 Shin-ya Koyama (Toyo Univ.) Chebyshev’s bias for algebraic curves 10
 Hana Tanaka
 (Gunma Pref. Oze High School)
- 15 Yuichiro Toma (Nagoya Univ.) A relation between multiple L -functions and the confluent hypergeo-
 metric function 10
- 16 Yuta Kadono (Tohoku Univ.) Integral representation of Schur multiple zeta values and Kawashima
 function 15
- 17 Masaki Kato q - and elliptic analogues of inversion formulas for multiple polyloga-
 rithms 15
 (Toyama Nat. Coll. of Tech.)
- 18 Yuto Kawase (Kyoto Univ.) Birkhoff’s variety theorem for relative algebraic theories 15

September 21st (Thu) Conference Room II

9:15–10:45

- 19 Tomohiro Iwami (Kyushu Inst. of Tech.) Recovering conductor condition of (\mathbb{Q} -)conic bundles via three-dimensional
 Miyaoka–Yau type inequality with the associated third Chern classes
 15
- 20 Masatomo Sawahara (Saitama Univ.) Cylindrical ample divisors on Du Val del Pezzo surfaces 13
- 21 Ken Sato (Tokyo Tech)^b On higher Chow cycles on Kummer surfaces 15
- 22 Kazuki Utsumi (Ritsumeikan Univ.) Mordell–Weil lattices of Inose surfaces 15
- 23 Natsuo Saito (Hiroshima City Univ.) On the Mordell–Weil group of some quasi-elliptic K3 surfaces 15
 Yoshiki Ohtsu (Setouchi High School)
 Hiroyuki Ito (Tokyo Univ. of Sci.)

11:00–12:00 Talk Invited by Algebra Section

- Sho Tanimoto (Nagoya Univ.) Exceptional sets in Manin’s conjecture and their applications to algebraic geometry

13:00–14:15

- 24 Linghu Fan (Univ. of Tokyo)^b Crepant resolution of \mathbb{A}^4/A_4 and its Euler number in characteristic 2 15
- 25 Makoto Miura (Osaka Univ.) On the global connectedness of polytopes 15
- 26 Hiroshi Sato (Fukuoka Univ.) Anti-flips of the blow-ups of the projective spaces at torus invariant points 10
- 27 Hirotaka Onuki (Univ. of Tokyo) On Fujita’s freeness conjecture in mixed characteristic 15
- 28 Atsushi Noma (Yokohama Nat. Univ.) The number of the irreducible components of the locus of nonbirational projection centers 10

September 22nd (Fri) Conference Room II

9:15–11:30

- 29 Sin Yi Tsang (Ochanomizu Univ.) A generalization of Ito’s theorem to skew braces 15
- 30 Kiyoto Yoshino (Hiroshima Inst. of Tech.) The Lemmens–Seidel conjecture for base size 5 15
- 31 Hideya Watanabe (Osaka Metro. Univ.) On the stability of ι canonical bases of locally finite type 10
- 32 Hideya Watanabe (Osaka Metro. Univ.) A branching rule from $GL_{2n}(\mathbb{C})$ to $Sp_{2n}(\mathbb{C})$ arising from the representation theory of quantum symmetric pairs 10
- 33 Toshitaka Aoki (Kobe Univ.) On interval global dimension of posets: a characterization of case 0 15
Emerson Gaw Escolar (Kobe Univ.)
Shunsuke Tada (Kobe Univ.)
- 34 Yasuaki Gyoda (Univ. of Tokyo) Bijection between support τ -tilting modules of GLS path algebra and c -clusters in finite root system 15
- 35 Yuta Kozakai (Tokyo Univ. of Sci.) On the induction/restriction of support τ -tilting modules 10
Ryotaro Koshio (Tokyo Univ. of Sci.)
- 36 Ryuji Tanimoto (Shizuoka Univ.)^b Representations of the additive group into Heisenberg groups in positive characteristic 15

11:30–12:00 Research Section Assembly**14:15–16:15**

- 37 Ryota Wakao (Okayama Univ. of Sci.) On integrals in low-dimensional Hopf superalgebras 10
- 38 Wenda Fang (Kyoto Univ.) A new scheme of integrability via vertex algebra 15
- 39 Tomoyuki Arakawa (Kyoto Univ.) Quasi-lisse vertex algebras and chiral differential operators 15
Xuanzhong Dai (Kyoto Univ.)
- 40 Shun Furihata (Kyoto Univ.) On the Beem–Nair conjecture 15
- 41 Ana Kontrec (Kyoto Univ.) Zesting the minimal models 15

11 Algebra

- 42 Masahiko Miyamoto (Univ. of Tsukuba) Rationality of holomorphic vertex operator algebras 10
- 43 Masahiko Miyamoto (Univ. of Tsukuba) Borcherds' Lie algebra and C_2 -cofiniteness of moonshine VOAs 15

16:30–17:30 Talk Invited by Algebra Section

Taiki Shibata (Okayama Univ. of Sci.) Representations of algebraic supergroups

September 23rd (Sat) Conference Room II

9:15–10:45

- 44 Ayako Itaba (Tokyo Univ. of Sci.) Quantum projective planes and Beilinson algebras of 3-dimensional quantum polynomial algebras for Type S' 15
- 45 Masaki Matsumo (Tokyo Univ. of Sci.) Yu Saito (Shizuoka Univ.) Classification of 3-dimensional cubic Artin–Schelter regular algebras of Type S 15
- 46 Mayu Tsukamoto (Yamaguchi Univ.) Takahide Adachi (Yamaguchi Univ.) A construction of mixed stratified algebras 15
- 47 Yuya Otake (Nagoya Univ.) Ext modules related to syzygies of the residue field 15
- 48 Kaito Kimura (Nagoya Univ.) Vanishing of Ext modules and Auslander–Reiten conjecture over normal rings 15

11:00–12:00 Talk Invited by Algebra Section

Haruhisa Enomoto (Osaka Metro. Univ.) On some classes of subcategories of abelian categories

14:15–17:00

- 49 Maiko Ono (Okayama Univ. of Sci.) Saeed Nasseh (Georgia Southern Univ.) Yuji Yoshino (Okayama Univ.) On an obstruction class to naive liftability 15
- 50 Ken-ichi Yoshida (Nihon Univ.) Tomohiro Okuma (Yamagata Univ.) Kei-ichi Watanabe (Nihon Univ./Meiji Univ.) Gorenstein normal tangent cones 10
- 51 Naoki Endo (Meiji Univ.) Graded ideals whose quotient rings are Gorenstein 15
- 52 Kazuho Ozeki (Nihon Univ.) The first Euler characteristic and the depth of associated graded rings 15
- 53 Koji Matsushita (Osaka Univ.) Nearly Gorensteinness of Ehrhart rings 15
- 54 Sora Miyashita (Osaka Univ.) Nearly Gorenstein projective monomial curves of small codimension 15
- 55 Mitsuhiro Miyazaki (Kyoto Univ. of Edu.) The flaw of the h-vector of a standard graded Cohen–Macaulay domain may be arbitrarily deep 15
- 56 Kohji Yanagawa (Kansai Univ.) Xin Ren (Kansai Univ.) Gröbner bases of radical Li–Li type ideals associated with partitions 15

- 57 Yuta Kambe (Mitsubishi Electric Corp.) Analysis of the computation of Gröbner bases and Gröbner degenerations via theory of signatures 15

Geometry

September 20th (Wed) Conference Room I

9:30–11:45

- 1 Yusei Aoki (Nagoya Inst. of Tech.) Trajectories on nonflat complex space forms and those on their real
Toshiaki Adachi (Nagoya Inst. of Tech.) hypersurfaces of type (A) 15
- 2 Naotoshi Fujihara (Tokyo Univ. of Sci.) Graph-preserving property and long-time existence of mean curvature
flows on warped product manifolds 15
- 3 Hirotaka Kiyohara (Hokkaido Univ.) Construction of minimal null scrolls in the three-dimensional Heisenberg
group 15
- 4 Yuta Sasahara (Tokyo Metro. Univ.) Inhomogeneous isoparametric hypersurfaces of OT-FKM-type in the
pseudo-sphere 15
- 5 Jun Matsumoto (Tokyo Tech) The classification of complete improper affine fronts of low total curva-
ture in affine three space \mathbf{R}^3 and new examples 15
- 6 Masahiro Morimoto Non-existence of exceptional orbits under polar actions on Hilbert spaces
(Tokyo Metro. Univ.) 15
- 7 Shuhei Yonehara (Osaka Univ.) On submanifolds of generalized contact manifolds 15

14:15–16:15

- 8 Fumika Mizoguchi (Osaka Metro. Univ.) Nilpotent Lie algebras obtained by quivers and Ricci solitons 15
Hiroshi Tamaru (Osaka Metro. Univ.)
- 9 Ye Zhang The h -logconcavity breaking by the Dirichlet heat flow on the Heisen-
(Okinawa Inst. of Sci. and Tech. Grad. Univ.) berg group 15
- 10 Hiroyuki Tasaki Maximal antipodal sets of classical compact symmetric spaces III 15
(Tokyo Metro. Univ./Univ. of Tsukuba)
Makiko Sumi Tanaka
(Tokyo Univ. of Sci.)
- 11 Yoshihiro Ohnita Totally complex submanifolds and R -spaces 15
(Waseda Univ./Osaka Metro. Univ.)
Jong Taek Cho (Chonnam Nat. Univ.)
Kaname Hashimoto
(Yamato Univ./Osaka Metro. Univ.)
- 12 Isami Koga Equivariant harmonic maps of the complex projective spaces into the
(Math. Res. Inst. Calc for Industry/Hiroshima Univ.) quaternion projective space 15
Yasuyuki Nagatomo (Meiji Univ.)
- 13 Yusuke Shinoda (Okayama Univ.) Another proof of the Myers–Steenrod theorem for Finsler manifolds
Kei Kondo (Okayama Univ.) from geodesic theory 15

16:30–17:30 Talk Invited by Geometry Section

Boris Doubrov (Belarusian State Univ.) Extrinsic nilpotent differential geometry and linear PDEs of finite type

September 21st (Thu) Conference Room I

9:40–11:30

- 14 Hiroaki Izumi (Hiroshima Univ.) New micro-macro dynamical systems 15
- 15 Yoichi Maeda (Tokai Univ.) Circles centered at centroid and orthocenter 10
Koichi Okada
Sin Hitotumatu (Kyoto Univ.*)
- 16 Yoichi Maeda (Tokai Univ.) Locus of viewpoints from which a conic appears circular 10
Makoto Kishine
(St.Viator Rakusei Junior and Senior High School)
- 17 Naoyuki Kanomata Exact solutions and perturbative calculations of finite Φ^3 - Φ^4 hybrid-
(Tokyo Univ. of Sci.) matrix-model 15
Akifumi Sako (Tokyo Univ. of Sci.)
- 18 Dounnu Sasaki (Gakushuin Univ.) Counting subgroups and subset currents 15
- 19 Kenzi Satô (Tamagawa Univ.) Centroids of hyperbolic simplices and Minkowski theorem on Minkowski
spaces 15

11:40–12:00 Announcement of the 2023 MSJ Geometry Prize

September 22nd (Fri) Conference Room I

9:30–11:45

- 20 Masao Jinzenji (Okayama Univ.) Geometrical proof of generalized mirror transformation of projective
hypersurfaces 15
- 21 Hiroshi Sawai Non-Vaisman LCK structures on a solvmanifold constructed by a 2-step
(Numazu Nat. Coll. of Tech.) nilpotent Lie group 15
- 22 Satoshi Nakamura (Tokyo Tech) Calabi type functionals for coupled Kähler–Einstein metrics 15
- 23 Kazuyuki Hasegawa (Kanazawa Univ.) The H/Q-correspondence and a generalization of the supergravity c-map
Vicente Cortés (Univ. of Hamburg) 15
- 24 Rei Murakami (Tohoku Univ.) J -equations on fiber spaces 15
- 25 Natsuo Miyatake (Tohoku Univ.) Generalization of the Hermitian–Einstein equation for cyclic Higgs bun-
dles using subharmonic functions and a priori estimates of the solutions
to the equation 15
- 26 Takahiro Aoi A conical approximation of constant scalar curvature Kähler metrics of
(Nat. Inst. of Tech., Wakayama Coll.) Poincaré type and log K-semistability 15

14:15–16:15

- 27 Shota Hamanaka (Mitsubishi Electric Corp. Adv. Tech. R&D Center) Upper bound preservation of the total scalar curvature in a conformal class 15
- 28 Homare Tadano (Yamaguchi Univ.) Myers-type theorems via m -Bakry–Émery Ricci curvatures of quadratic decays 15
- 29 Homare Tadano (Yamaguchi Univ.) Myers-type theorems via m -Bakry–Émery Ricci curvatures of quartic decays 15
- 30 Junya Takahashi (Tohoku Univ.) Small eigenvalues of the Hodge–Laplacian with sectional curvature bounded below 15
Colette Anné (Univ. de Nantes)
- 31 Kaori Yamaguchi (Ritsumeikan Univ.) On statistics which are almost sufficient from the viewpoint of the Fisher metrics 15
Hiraku Nozawa (Ritsumeikan Univ.)
- 32 Yasuaki Fujitani (Osaka Univ.) Aronson–Bénilan gradient estimates for porous medium equations under lower bounds of N -weighted Ricci curvature with $N < 0$ 15

16:30–17:30 Talk Invited by Geometry Section

- Kotaro Kawai (BIMSA / Osaka City Univ.) Manifolds with exceptional holonomy and mirrors of their submanifolds

September 23rd (Sat) Conference Room I

9:30–10:45

- 33 Asuka Takatsu (Tokyo Metro. Univ.)^b Riemannian starshape and capacity problems 15
Kazuhiro Ishige (Univ. of Tokyo)
Paolo Salani (Univ. di Firenze)
- 34 Asuka Takatsu (Tokyo Metro. Univ.)^b On geometric properties of sliced Monge–Kantorovich metrics 15
Jun Kitagawa (Michigan State Univ.)
- 35 Tadashi Fujioka (Osaka Univ.) Quantitative Lipschitz homotopy convergence of Alexandrov spaces .. 15
Ayato Mitsuishi (Fukuoka Univ.)
Takao Yamaguchi (Univ. of Tsukuba*)
- 36 Tadashi Fujioka (Osaka Univ.) Euler characteristics of collapsing Alexandrov spaces 15

11:00–12:00 Talk Invited by Geometry Section

- Daisuke Kazukawa (Kyushu Univ.) Convergence theory of metric measure spaces based on the concentration of measure phenomenon

Complex Analysis

September 20th (Wed) Conference Room V

9:30–11:30

- 1 Rikio Yoneda (Kanazawa Univ.) Composition operators between the Hardy space H^p and the Bergman spaces L_a^q 15

2	<u>Katsunori Shimomura</u> (Ibaraki Univ.) Yôsuke Hishikawa (Gifu Univ.) Masaharu Nishio (Chubu Univ.) Masahiro Yamada (Gifu Univ.)	A remark on the dual spaces of bi-parabolic Bergman spaces	15
3	Yoshihiko Shinomiya (Shizuoka Univ.)	Period matrices of L -shapes	15
4	Gou Nakamura (Aichi Inst. of Tech.)	Weierstrass points of the complex double for non-orientable extremal surfaces of genus 3	15
5	Ryo Matsuda (Kyoto Univ.)	Maximal cusps are not dense	15
6	Hiroshige Shiga (Kyoto Sangyo Univ.)	Quasicircles and Dirichlet finite harmonic functions on Riemann surfaces	15
7	Hiroshige Shiga (Kyoto Sangyo Univ.)	Uniform domains and generalized Cantor sets	15
14:15–15:15			
8	Shunji Horiguchi	Generalized Mandelbrot sets by $z_{k+1} = (z_k^m + c)^n$	15
9	Takumi Yagi (Kyoto Univ.)	Connectedness and hyperbolicity of perturbations of semi-parabolic Hénon maps	15
10	Yûsuke Okuyama (Kyoto Inst. Tech.)	A local a priori bound for endomorphisms of the projective spaces	15
11	Takanori Ayano (Osaka Metro. Univ.)	Difference between the solutions for the inversion problem of the hyper-elliptic integrals of genus 2	15

15:35–16:35 Talk Invited by Complex Analysis Section

Michio Seto (Nat. Defense Acad. of Japan)	Holomorphic functions vs positive definite matrices
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September 21st (Thu) Conference Room V

9:30–11:30

12	Shun Sugiyama (Nat. Inst. of Tech., Kitakyushu Coll.)	An open set satisfying a local intermediate Cousin-I condition in a complex space	15
13	<u>Katsusuke Nabeshima</u> (Tokyo Univ. of Sci.) Shinichi Tajima (Niigata Univ.*)	A new look at Yano–Kato method for computing s -parametric annihilators	15
14	Shinichi Tajima (Niigata Univ.*) <u>Katsusuke Nabeshima</u> (Tokyo Univ. of Sci.)	Testing tameness of a complex polynomial map via comprehensive Gröbner systems	15
15	Junichiro Tanaka (Osaka Metro. Univ.)	Generalizations of the Bochner–Martinelli kernel to complex abelian Lie groups	15
16	Satoshi Ogawa (Osaka Metro. Univ.)	Full linearization along a compact complex curve and Brjuno like condition of unitary flat line bundles	15
17	<u>Masanori Adachi</u> (Shizuoka Univ.) Séverine Biard (Univ. Polytechnique Hauts-de-France) Judith Brinkschulte (Univ. Leipzig)	A residue formula for meromorphic connections and applications to stable sets of foliations	15
18	Takeo Ohsawa (Nagoya Univ.*) ^b	On the Levi problem under the negativity of canonical bundles on the boundary	15

13:00–14:00 Talk Invited by Complex Analysis Section

Taiji Marugame

(Univ. of Electro-Comm.)

Hyperkähler ambient metrics associated with twistor CR manifolds

Functional Equations

September 20th (Wed) Conference Room IX

9:00–12:00

- | | | |
|----|---|--|
| 1 | Haru Negami (Chiba Univ.) | Katz–Long–Moody construction of braid group representations and multiplicative middle convolution of KZ equation 10 |
| 2 | Kazuki Hiroe (Chiba Univ.)
Yasunori Okada (Chiba Univ.)
Ken Shibusawa (Chiba Univ.) | On an extension of contiguity relations for the solution spaces of the confluent hypergeometric system of Kummer type 10 |
| 3 | Takashi Aoki (Kindai Univ.*)
<u>Toshinori Takahashi</u>
(Kwansei Gakuin Univ.)
Mika Tanda (Kwansei Gakuin Univ.) | The relation between the hypergeometric function and WKB solutions 10 |
| 4 | Toshinori Takahashi
(Kwansei Gakuin Univ.)
<u>Mika Tanda</u> (Kwansei Gakuin Univ.) | Relation between the standard solutions of the hypergeometric differential equation and WKB solutions with a simple-pole-type turning point 10 |
| 5 | Sunao Ōuchi (Sophia Univ.*) | Remarks on Cauchy problem in function spaces with asymptotic expansions with respect to time variable t 10 |
| 6 | Kazuki Ishibashi
(Hiroshima Inst. of Tech.) | Nonoscillation of the Mathieu-type half-linear differential equation . . . 10 |
| 7 | <u>Hiroyuki Usami</u> (Gifu Univ.)
Manabu Naito (Ehime Univ.*) | On asymptotic behavior of solutions of half-linear ordinary differential equations 10 |
| 8 | Masafumi Yoshino (Hiroshima Univ.) | Summability of transseries solution of Hamiltonian system 10 |
| 9 | Masakazu Onitsuka
(Okayama Univ. of Sci.) | Stability regions for discrete diamond-alpha operator 10 |
| 10 | Yuki Hata
<u>Hideaki Matsunaga</u>
(Osaka Metro. Univ.) | Delay-dependent stability switches in a delay differential system 10 |
| 11 | Tetsutaro Shibata (Hiroshima Univ.) | Asymptotic behavior of solution curves of nonlocal one-dimensional elliptic equations 10 |
| 12 | Naoki Hamamoto (Osaka Metro. Univ.) | The Poincaré constant for solenoidal fields on the ball 10 |
| 13 | <u>Hiroshi Ando</u> (Ibaraki Univ.)
Toshio Horiuchi (Ibaraki Univ.*)
Eiichi Nakai (Ibaraki Univ.*) | On the critical Caffarelli–Kohn–Nirenberg type inequalities involving super-logarithms 10 |

- 14 Ryuji Kajikiya (Osaka Electro-Comm. Univ.) Radial eigenvalues for the p -Laplacian, I. Asymptotic behavior 10
Mieko Tanaka (Tokyo Univ. of Sci.)
Satoshi Tanaka (Tohoku Univ.)
- 15 Ryuji Kajikiya (Osaka Electro-Comm. Univ.) Radial eigenvalues for the p -Laplacian, II. Monotonicity 10
Mieko Tanaka (Tokyo Univ. of Sci.)
Satoshi Tanaka (Tohoku Univ.)
- 14:15–16:30**
- 16 Shuhei Kitano (Waseda Univ.) Harnack inequalities and Hölder estimates for fully nonlinear integral equations with weak scaling conditions 10
- 17 Mieko Tanaka (Tokyo Univ. of Sci.) Multiplicity of solutions for (p, q) -Laplace equations with two parameters 10
Vladimir Bobkov (Ufa Federal Research Cente)
- 18 Kenta Kumagai (Tokyo Tech) Classification of boundedness of extremal solutions to semilinear elliptic equations with weighted terms 10
- 19 Shinji Adachi (Shizuoka Univ.) Existence of ground state solutions for a class of semilinear elliptic equations involving Sobolev critical term 10
Tatsuya Watanabe (Kyoto Sangyo Univ.)
- 20 Kazuhiro Takimoto (Hiroshima Univ.) Higher order estimate near the boundary of a large solution to semilinear Poisson equation with double-power like nonlinearity 10
Yuxiao Zhang (Hiroshima Univ.)
- 21 Anna Dall’Acqua (Ulm Univ.) An obstacle problem for the p -elastic energy 10
Marius Müller (Leipzig Univ.)
Shinya Okabe (Tohoku Univ.)
Kensuke Yoshizawa (Kyushu Univ.)
- 22 Tatsuya Miura (Tokyo Tech) Optimal thresholds for preserving embeddedness of elastic flows 10
Marius Müller (Univ. Leipzig)
Fabian Rupp (Univ. Vienna)
- 23 Tatsuya Miura (Tokyo Tech) Migrating elastic flows 10
Tomoya Kemmochi (Nagoya Univ.)
- 24 Yoshihiro Tonegawa (Tokyo Tech) End-time regularity theorem for Brakke flows 10
Salvatore Stuard (Univ. Milan)
- 25 Shuntaro Tsubouchi (Univ. of Tokyo) Gradient continuity for anisotropic singular equations 10
- 16:45–17:45 Talk Invited by Functional Equations Section**
- Yoshihisa Miyanishi (Shinshu Univ.) Spectral theory of layer potential type operators and its applications

September 21st (Thu) Conference Room IX

9:00–12:00

- 26 Kiichi Tashiro (Tokyo Tech) On the area formula for the mean curvature flow with transport term via phase-field method 10

- 27 Kana Minami (Nara Women's Univ.)
Taku Yanagisawa (Nara Women's Univ.) Long-time asymptotic profile of the n -dimensional heat equation 10
- 28 Ryunosuke Kusaba (Waseda Univ.)
Tohru Ozawa (Waseda Univ.) Commutator estimates between the heat semigroup and monomial weights and its application 10
- 29 Taiki Takeuchi (Waseda Univ.) Breakdown of C^∞ -smoothing effects for the Fujita type equation 10
- 30 Mizuki Kojima (Tokyo Tech)
Kotaro Hisa (Tohoku Univ.) On solvability of a time-fractional semilinear heat equation, and its quantitative approach to the classical counterpart 10
- 31 Junichi Harada (Akita Univ.) Asymptotic behavior of blowup solutions to complex valued semilinear heat equations for complex time 10
- 32 Takashi Suzuki (Osaka Univ.)
Katsuyuki Ishii (Kobe Univ.) Formation of blowup and quenching patterns in parabolic equations 5
- 33 Kawai Satoshi (SOLIZE Corp.)
Masaki Ohnuma (Tokushima Univ.) A lemma for a strong comparison principle of a nonlinear parabolic equation 10
- 34 Mario Fuest (Leibniz Univ. Hannover)
Johannes Lankeit (Leibniz Univ. Hannover)
Masaaki Mizukami (Kyoto Univ. of Edu.) Possible points of blow-up in a fully parabolic chemotaxis system with environmental dependent logistic source 10
- 35 Mario Fuest (Leibniz Univ. Hannover)
Johannes Lankeit (Leibniz Univ. Hannover)
Yuya Tanaka (Tokyo Univ. of Sci.) Occurrence of a critical mass phenomenon in a higher dimensional quasilinear Keller–Segel system with indirect signal production 10
- 36 Takeshi Suguro (Osaka Metro. Univ.)
Well-posedness of the Cauchy problem of a drift-diffusion equation in amalgam spaces 10
- 37 Shohei Kohatsu (Tokyo Univ. of Sci.)
Johannes Lankeit (Leibniz Univ. Hannover) Transient growth phenomena in a two-species chemotaxis-competition model on domains without radial symmetry 10
- 38 Yuta Ishii (Ibaraki Nat. Coll. of Tech.) On the existence of spiky stationary solutions for the Schnakenberg model with advection term on the Y -shaped metric graph 10

13:00–14:00 Talk Invited by Functional Equations Section

- Yoshihito Kohsaka (Kobe Univ.) A threshold-type approximation algorithm for the Willmore flow

September 22nd (Fri) Conference Room IX

9:15–12:00

- 39 Yuki Tsukamoto (Meiji Univ.) Convergence of the fast reaction limit 10
- 40 Hiroko Sekisaka(Yamamoto) (RIKEN)
Ayuki Sekisaka (Meiji Univ.) Reaction-diffusion approximation of nonlocal reaction-diffusion equation 10
- 41 Ryu Fujiwara (Meiji Univ.) Steady state to the nonlocal Allen–Cahn equation with unbounded kernel 10

- 42 Masaharu Taniguchi (Okayama Univ.) A traveling front solution whose cross section has any given major axis and any given minor axis in balanced reaction-diffusion equations 10
- 43 Masahiko Shimojo (Tokyo Metro. Univ.) Forced waves for diffusive competition systems in shifting environments 10
 Jong-Sheng Guo (Tamkang Univ.)
 Karen Guo (Providence Univ.)
- 44 Tatsuki Mori (Musashino Univ.) Exact solutions of full stationary problems for a cell polarization model 10
 Kousuke Kuto (Waseda Univ.)
 Tohru Tsujikawa (Univ. of Miyazaki*/Meiji Univ.)
 Shoji Yotsutani (Ryukoku Univ.*)
- 45 Yohei Sato (Saitama Univ.) Even ground state for nonlinear Schrödinger systems with mixed couplings on \mathbb{R}^N 10
- 46 Mathieu Colin (Univ. of Bordeaux) Stable standing waves for a Schrödinger system with nonlinear χ^3 response 10
 Tatsuya Watanabe (Kyoto Sangyo Univ.)
- 47 Satoshi Masaki (Hokkaido Univ.) On the existence and the shape of the standing wave solutions to a class of systems of nonlinear Schrödinger equations 10
- 48 Ryusei Yamashita (Tokyo Metro. Univ.) A remark on the local uniqueness by the monotonicity based method for the magnetic Schrödinger equation 10
- 49 Keiichi Kato (Tokyo Univ. of Sci.)^b Estimates on modulation spaces for solutions to Schrödinger equations with spatially decaying magnetic fields 10
 Ryo Muramatsu (Tohoku Univ.)
- 50 Junpei Kawakami (Kyoto Univ.) Global approximation for the cubic NLS with strong magnetic confinement 10
- 51 Shun Tsuchihara (Tohoku Univ.)^b Well-posedness of nonlinear Schrödinger equation on the two dimensional half-plane with a nonlinear Neumann boundary condition 10
 Takayoshi Ogawa (Tohoku Univ.)
 Takuya Sato (Kumamoto Univ.)
- 14:15–16:30**
- 52 Kenta Tomioka (Waseda Univ.)^b The global well-posedness of the initial boundary value problem for nonlinear dispersive systems 10
 Tohru Ozawa (Waseda Univ.)
- 53 Takuya Sato (Kumamoto Univ.)^b Asymptotic behavior of large solutions to dissipative nonlinear Schrödinger equations in the analytic class 10
- 54 Masaru Hamano (Waseda Univ.) Scattering and blow-up solutions to energy critical NLS with an inverse square potential 10
 Masahiro Ikeda (RIKEN/Keio Univ.)
- 55 Koichi Komada (Chukyo Univ.) Scattering problem for fourth-order nonlinear Schrödinger equations in one dimension 10
 Satoshi Masaki (Hokkaido Univ.)
- 56 Ikki Fukuda (Shinshu Univ.) Large time behavior and optimal decay estimate for solutions to the generalized Zakharov–Kuznetsov–Burgers equation 10
 Hiroyuki Hirayama (Univ. of Miyazaki)
- 57 Kouichi Taira (Ritsumeikan Univ.) Strichartz estimates for (k, a) -generalized Laguerre operators 10
 Hiroyoshi Tamori (Shibaura Inst. of Tech.)
- 58 Makoto Ikoma (Nagoya Univ.) Optimal constants of smoothing estimates for the 2-dimensional Dirac equation 10
 Soichiro Suzuki (Chuo Univ.)

- 59 Kotaro Inami (Nagoya Univ.) The equivalence of an energy decay for damped Klein–Gordon type
Soichiro Suzuki (Chuo Univ.) equations and the geometric condition for damping coefficients 10
- 60 Mamoru Okamoto (Osaka Univ.) On the solution of the cubic nonlinear Klein–Gordon equation with
Tadahiro Oh (Univ. of Edinburgh) Gaussian random initial data 10
Nikolay Tzvetkov
(École Normale Supérieure de Lyon)
- 61 Yoshinori Nishii (Tokyo Univ. of Sci.) Upper and lower bounds for energy of small solutions to semilinear wave
Yuji Sagawa (Kumamoto Univ.) equations with weakly dissipative structure 10
Takuya Sato (Kumamoto Univ.)

16:45–17:45 Talk Invited by Functional Equations Section

- Takafumi Akahori (Shizuoka Univ.) Global dynamics above the ground state threshold for nonlinear Schrödinger
equations

September 23rd (Sat) Conference Room IX

9:30–12:00

- 62 Shunsuke Kitamura (Tohoku Univ.)^b Instant blow-up of solutions of one-dimensional semilinear wave equa-
tions with increasing spatial weights 10
- 63 Shu Takamatsu (Tohoku Univ.)^b The lifespan of classical solutions of one dimensional wave equation
Takiko Sasaki with semilinear terms of the spatial derivative 10
(Musashino Univ./Tohoku Univ.)
Hiroyuki Takamura (Tohoku Univ.)
- 64 Mishio Kawashita (Hiroshima Univ.) Asymptotic behavior of the indicator function in the inverse problem of
Wakako Kawashita (Hiroshima Univ.) the wave equation for media with multiple types of cavities 10
- 65 Tomoyuki Oka (Univ. of Tokyo) Space-time quasi-periodic homogenization for damped wave equations
. 10
- 66 Motohiro Sobajima On the lifespan of solutions to the critical semilinear damped wave
(Tokyo Univ. of Sci.) equation in an 2d-exterior domain 10
Masahiro Ikeda (RIKEN)
Koichi Taniguchi (Tohoku Univ.)
Yuta Wakasugi (Hiroshima Univ.)
- 67 Kagei Yoshiyuki (Tokyo Tech) Stability of time periodic solution of nonlinear elastic wave equations
Hiroshi Takeda (Fukuoka Inst. of Tech.) with viscoelastic terms 10
- 68 Yoshiyuki Kagei (Tokyo Tech) Eckhaus instability of compressible Taylor vortices 10
- 69 Hideo Kozono Liouville-type theorems for the Taylor–Couette flow of the stationary
(Waseda Univ./Tohoku Univ.) Navier–Stokes equations 10
Yutaka Terasawa (Nagoya Univ.)
Yuta Wakasugi (Hiroshima Univ.)
- 70 Kai Koike (Tokyo Tech) Asymptotic expansion of solutions to 1D compressible Navier–Stokes
equations with space-time pointwise estimates 10
- 71 Itsuko Hashimoto (Kanazawa Univ.) Inviscid limit problem of radially symmetric stationary solutions for
Akitaka Matsumura (Osaka Univ.*) compressible Navier–Stokes equation 10
- 72 Mikihiro Fujii (Kyushu Univ.) Ill-posedness of the two-dimensional stationary Navier–Stokes equations
on the whole plane 10

- 73 Kenta Oishi (Waseda Univ.) On the global well-posedness and decay of a free boundary problem of the Navier–Stokes equation in the two-dimensional half space 10

14:15–16:00

- 74 Naoto Deguchi (Tokyo Tech) Stability analysis for stationary solutions of the compressible Navier–Stokes equation 10
- 75 Ryosuke Nakasato (Shinshu Univ.)^b Long time behavior of solutions to the compressible Navier–Stokes–Korteweg equations in critical spaces 10
Takayuki Kobayashi (Osaka Univ.)
- 76 Masakazu Yamamoto (Niigata Univ.) Time evolution of the incompressible Navier–Stokes flow in far-field 10
- 77 Masatoshi Okita On the blow-up criterion for the Navier–Stokes equations with critical time order 10
(Kurume Nat. Coll. of Tech.)
- 78 Jou-chun Kuo (Waseda Univ.) Maximal L^1 regularity for the compressible Stokes equations 10
- 79 Yoshihiro Shibata Maximal L_1 -regularity of the Navier–Stokes equations with free boundary conditions: Local well-posedness 10
Keiichi Watanabe (Suwa Univ. of Sci.)
- 80 Yoshihiro Shibata Maximal L_1 -regularity of the Navier–Stokes equations with free boundary conditions: Global well-posedness 10
Keiichi Watanabe (Suwa Univ. of Sci.)
- 81 Keiichi Watanabe (Suwa Univ. of Sci.) Large time behavior of the Stokes semigroup in exterior Lipschitz domains 10

16:15–17:15 Talk Invited by Functional Equations Section

- Hirokazu Saito Asymptotic stability of the trivial steady state for the two-phase Navier–Stokes equations
(Univ. of Electro-Comm.)

Real Analysis

September 22nd (Fri) Conference Room V

9:00–12:00

- 1 Yukino Tomizawa Weak uniform convexity of complete Busemann spaces 15
(Niigata Inst. of Tech.)
- 2 Yasunori Kimura (Toho Univ.) Convex minimization problems and approximation to their solutions on complete geodesic spaces 15
- 3 Hiroko Manaka (Nihon Univ.) Convergence theorems with some projections in Banach spaces 15
- 4 Sachiko Atsushiba Attractive points, fixed points and convergence theorems for monotone Lipschitzian mappings 15
(Tokyo Woman’s Christian Univ.)
- 5 Shin-ya Matsushita (Akita Pref. Univ.) Primal-dual splitting algorithm and its applications 15
- 6 Satoshi Yamaguchi (Ibaraki Univ.) Bi-preduals of generalized Campanato spaces with variable growth condition 15
Eiichi Nakai (Ibaraki Univ.)
Katsunori Shimomura (Ibaraki Univ.)

- 7 Mathav Murugan (Univ. of British Columbia) Construction and regularity of first-order Sobolev spaces on the planar Sierpiński carpet 15
Ryosuke Shimizu (Waseda Univ.)
- 8 Naoya Hatano (Chuo Univ.) Fractional operators on weak Choquet spaces with Hausdorff capacities 15
Ryota Kawasumi
Hiroki Saito (Nihon Univ.)
Hitoshi Tanaka (Tsukuba Univ. of Tech.)
- 9 Toru Nogayama (Chuo Univ.) Littlewood–Paley characterization for mixed Morrey spaces 15

12:15–12:45 Presentation Ceremony for the 2023 MSJ Analysis Prize**14:15–15:25**

- 10 Ryota Kawasumi Boundedness of composition operators on Orlicz–Morrey spaces 15
Masahiro Ikeda (RIKEN)
Isao Ishikawa (Ehime Univ.)
- 11 Hiroki Saito (Nihon Univ.) Some embedding inequalities for fractional Sobolev spaces 15
- 12 Takeshi Iida Remarks on the fractional operators on Orlicz–Morrey spaces 15
(Fukushima Nat. Coll. of Tech.)
- 13 Jun Kawabe (Shinshu Univ.) Topological and linear topological properties of the Sugeno–Lorentz spaces 15

15:40–16:40 Award Lecture for the 2022 MSJ Analysis Prize

- Eiichi Nakai (Ibaraki Univ.) Generalized Campanato spaces with variable growth condition and related topics

17:00–18:00 Talk Invited by Real Analysis Section

- Toshiharu Kawasaki (Tamagawa Univ.) On some directions of extension of the integral

September 23rd (Sat) Conference Room V

9:30–12:00

- 14 Goro Akagi (Tohoku Univ.) Global solutions for evolution equations involving fractional time-derivatives and their decay rates 15
Yoshihito Nakajima (Tohoku Univ.)
- 15 Akiko Morimura Weak solutions for nonlinear parabolic equations with non-monotone boundary conditions 15
(Japan Women’s Univ.)
Toyohiko Aiki (Japan Women’s Univ.)
- 16 Daiki Mizuno (Chiba Univ.) Well-posedness result for a pseudo-parabolic dissipation system of KWC energy 15
Ken Shirakawa (Chiba Univ.)
- 17 Noboru Isobe (Univ. of Tokyo) On a gradient flow modeling a learning process of deep neural networks in a metric space and its convergence 15
- 18 Takanori Ebata (Niigata Univ.) Continuous dependence on the initial and flux functions for solutions of balance laws 15
Hiroki Ohwa (Niigata Univ.)
- 19 Yutaro Chiyo (Tokyo Univ. of Sci.) Global existence of classical solutions to an indirect chemotaxis-consumption model with signal-dependent sensitivity 15
Kazuma Sugawara (Tokyo Univ. of Sci.)
Tomomi Yokota (Tokyo Univ. of Sci.)

- 20 Chiharu Kosugi (Yamaguchi Univ.) Existence and uniqueness weak solutions for the energy conservation system representing motions of elastic curve on the plane 15
- 21 Makoto Okumura (Konan Univ.) Structure-preserving numerical schemes for the Cahn–Hilliard equation
Takeshi Fukao (Ryukoku Univ.) with dynamic boundary conditions in two spatial dimensions 15
- 14:15–16:25**
- 22 Yoshiho Akagawa Continuous dependence of a perfect plasticity model 15
(Gifu Nat. Coll. of Tech.)
Risei Kano (Kochi Univ.)
Takeshi Fukao (Ryukoku Univ.)
- 23 Kosuke Kita (Waseda Univ.) On global and blow-up solutions to nonlinear heat equations with
Ôtani Mitsuharu (Waseda Univ.) nonlinear boundary conditions 15
- 24 Shun Uchida (Oita Univ.) Sufficient condition of maximality of sum of monotone operators 15
Mitsuharu Ôtani (Waseda Univ.)
- 25 Hiroshi Watanabe (Oita Univ.) Asymptotic behavior of solutions to a 3D-model associated with grain
Ken Shirakawa (Chiba Univ.) boundary motion 15
J. Salvador Moll (Univ. València)
- 26 Kota Kumazaki (Kyoto Univ. of Edu.) Global solutions to a multiscale model describing swelling phenomenon
Adrian Muntean (Karlstad Univ.) in porous materials 15
- 27 Takeshi Fukao (Ryukoku Univ.) Vanishing viscosity for the Cahn–Hilliard equation on the boundary
Pierluigi Colli (Univ. of Pavia) 15
- 28 Masahiro Kubo (Wakayama Univ.) Elliptic-parabolic quasi-variational evolution equations 15
Noriaki Yamazaki (Kanagawa Univ.)

16:45–17:45 Talk Invited by Real Analysis Section

- Yasuhito Miyamoto (Univ. of Tokyo) Structure of positive radial solutions for supercritical elliptic problems

Functional Analysis

September 20th (Wed) Conference Room IV

10:00–12:00

- 1 Yuto Miyadera (Saitama Univ.) Remark on the formula for L^p norm characterized by weak L^p norm 15
- 2 Shosuke Omori On the spectral decomposition of quasi-Hermitian operator based on
(Gunma Nat. Coll. of Tech./Waseda Univ.) rigged Hilbert space 15
Junichi Takahashi (Waseda Univ.)
- 3 Masaki Kawamoto (Ehime Univ.) Nonexistence of wave operators for sub-quadratic repulsive potential
Atsuhide Ishida (Tokyo Univ. of Sci.) 15
- 4 Hisashi Morioka (Ehime Univ.) A study of shape resonances for quantum walks via the complex trans-
Kenta Higuchi (Ehime Univ.) lation method 15

- 5 Itaru Sasaki (Shinshu Univ.)^b On the scattering theory of the pair interaction model 15
 Yasumichi Matsuzawa (Shinshu Univ.)
 Shinnosuke Izumi (Shinshu Univ.)
 Kouta Imura
 (Nagano Pref. Fujimi High School)
- 6 Vincent Louatron (Ritsumeikan Univ.) Semiclassical resonances for matrix Schrödinger operators with vanishing interactions at crossings of classical trajectories 15
- 7 Kenta Higuchi (Ehime Univ.) Local scattering matrix for a degenerate avoided-crossing in the non-coupled regime 15

14:15–15:15 Talk Invited by Functional Analysis Section

- Michiyuki Watanabe Inverse N-body scattering with the time-dependent Hartree–Fock approximation
 (Okayama Univ. of Sci.)

September 21st (Thu) Conference Room IV

9:30–11:15

- 8 Yoritaka Iwata Cumulant generating function in infinite-dimensional abstract spaces based on the logarithmic representation of unbounded operators 15
 (Osaka Univ. of Economics Law)
- 9 Ryo Tabata (Ariake Nat. Coll. of Tech.) Matrix Identities Corresponding to Plethysm 15
- 10 Akifumi Nakada (Hiroshima Univ.) The Delsarte theory for probability measures on homogeneous spaces from compact Gelfand pairs 15
- 11 Ryosuke Nakahama Symmetry breaking operators of holomorphic discrete series representations for $(SU(3, 3), SO^*(6))$ 15
 (NTT Inst. for Funda. Math.)
- 12 Takahiro Nagaoka The strong Lefschetz property of Gorenstein algebras generated by relative invariants 15
Akihito Wachi (Hokkaido Univ. of Edu.)
- 13 Akihito Hora (Hokkaido Univ.) Application of spin Jucys–Murphy elements of symmetric groups to dynamical spin limit shapes 15

13:15–14:15 Talk Invited by Functional Analysis Section

- Koichi Tojo (RIKEN) Classification of irreducible symmetric spaces which admit standard compact Clifford–Klein forms

September 22nd (Fri) Conference Room IV

9:30–11:00

- 14 Hiroshi Ando (Chiba Univ.) Common transversals for coset spaces of compact groups 15
 Andreas Thom (TU Dresden)
- 15 Kan Kitamura (Univ. of Tokyo) Discrete quantum subgroups of complex semisimple quantum groups 15
- 16 Masato Tanaka (Nagoya Univ.) Cocycles on quantum groups 15
- 17 Toshihiko Masuda (Kyushu Univ.) Actions of discrete amenable groups into the normalizers of full groups of ergodic transformations 15
- 18 Masaru Nagisa (Ritsumeikan Univ.) Non-linear Choquet traces on compact algebras —dual norms, quasi norms— 15
 Yasuo Watatani (Kyushu Univ.*)

14:15–16:00

- 19 Shigeru Furuichi (Nihon Univ.) Operator inequalities between geometric mean and spectral geometric mean 15
- 20 Yuki Seo (Osaka Kyoiku Univ.) The Hadamard product of positive invertible operators and Karcher geometric mean 15
- 21 Hiroaki Tohyama
(Maebashi Inst. of Tech.)
Eizaburo Kamei
Masayuki Watanabe
(Maebashi Inst. of Tech.) Operator valued inequalities based on Young's inequality 15
- 22 Michiya Mori (Univ. of Tokyo/RIKEN)
Peter Šemrl (Univ. of Ljubljana) Nonexpansive and noncontractive mappings on the set of quantum pure states 15
- 23 Takeshi Miura (Niigata Univ.)
Yuta Enami (Niigata Univ.) Tingley's problem for Banach spaces with deferential structures 15
- 24 Osamu Hatori (Niigata Univ.*) The Mazur–Ulam property for spaces of harmonic functions 15

16:15–17:15 Talk Invited by Functional Analysis Section

- Shiho Oi (Niigata Univ.) The relationship between norm, algebraic, and order structure of Banach algebras

Statistics and Probability

September 20th (Wed) Conference Room VII

9:30–11:30

- 1 Yuto Nakagawa (Tohoku Univ.) Consideration of eigenvalues and multiplicity of stochastic matrix using left regular band 15
- 2 Yuichi Shiozawa (Osaka Univ.)
Jian Wang (Fujian Normal Univ.) Hausdorff dimensions of inverse images and collision time sets for symmetric Markov processes 15
- 3 Yuji Hamana (Univ. of Tsukuba) Hitting times of hyperbolic Bessel processes 10
- 4 Yuji Hamana (Univ. of Tsukuba) Brownian hitting to spheres 15
Hiroyuki Matsumoto
(Aoyama Gakuin Univ.)
- 5 Tomohiro Aya (Kyoto Univ.) Quantitative stochastic homogenization of elliptic equations with unbounded coefficients 15
- 6 Yushi Hamaguchi (Osaka Univ.) Markovian lifting and asymptotic log-Harnack inequality for stochastic Volterra integral equations 15
- 7 Masahisa Ebina (Kyoto Univ.) Central limit theorems for stochastic wave equations in high dimensions 15
- 8 Makiko Sasada (Univ. of Tokyo)
Ryosuke Uozumi (Univ. of Tokyo) Yang–Baxter maps and independence preserving property 15

14:15–15:15 Talk Invited by Statistics and Probability Section

- Kouhei Matsuura (Univ. of Tsukuba) Discrete approximation of reflected Brownian motions by Markov chains on partitions of domains

15:30–16:30 Talk Invited by Statistics and Probability Section

- Ryuya Namba (Kyoto Sangyo Univ.) Limit theorems for random walks on nilpotent covering graphs

September 21st (Thu) Conference Room VII

9:30–11:30

- 9 Atsushi Komaba (Univ. of Yamanashi) An application of the method of images in calculations on the range of
Hisashi Johno (Univ. of Yamanashi) a one-dimensional simple random walk 15
Kazunori Nakamoto
(Univ. of Yamanashi)
- 10 Noe Kawamoto (Hokkaido Univ.) Rate of convergence of the critical point of the memory- τ self-avoiding
walk in dimensions $d > 4$ 15
- 11 Naoki Kubota (Nihon Univ.) Comparison of limit shapes for Bernoulli first-passage percolation 10
Masato Takei (Yokohama Nat. Univ.)
- 12 Shigeyoshi Ogawa (Ritsumeikan Univ.) Noncausal calculus approach to Wong–Zakai’s theorem on the approxi-
mation of SDE 15
- 13 Toru Sera (Osaka Univ.) Large deviations related to arcsine laws for intermittent maps 15
- 14 Yuto Nakajima (Keio Univ.) Mandelbrot set for fractal n -gons and zeros of power series 15
- 15 Yuki Ueda (Hokkaido Univ. of Edu.) Limit theorems and new combinatorial identities in finite free probabil-
Octavio Arizmendi (CIMAT) ity theory 15
Katsunori Fujie (Hokkaido Univ.)
- 16 Tomoyuki Terada Return probabilities for random walks and quantum walks on the path
(Kanazawa Inst. of Tech.) graph 15
Yusuke Ide (Nihon Univ.)
Norio Konno
(Ritsumeikan Univ./Yokohama Nat. Univ.*)

11:30–12:00 Research Section Assembly

September 22nd (Fri) Conference Room VII

9:30–11:30

- 17 Hirofumi Wakaki (Hiroshima Univ.) On model selection criteria for mixed linear models for longitudinal
data. 15
- 18 Hiroki Masuda (Univ. of Tokyo) Asymptotic inference for a non-Gaussian location-scale mixed-effects
Yuki Fujinaga (Kyushu Univ.) model 15
- 19 Takuma Yoshida (Kagoshima Univ.) Asymptotic properties of generalized additive models in extreme value
theory 15
- 20 Eri Kurita (Tokyo Univ. of Sci.) Multivariate kurtosis test for multivariate normality with monotone
Takashi Seo (Tokyo Univ. of Sci.) missing data 15
- 21 Shogo Nakakita (Univ. of Tokyo) Langevin-type Monte Carlo algorithm for non-log-concave non-smooth
distributions 15

- 22 Shogo Nakakita (Univ. of Tokyo) Uniform estimates for the ergodicity of a class of stochastic differential equations with jumps 15
- 23 Teruo Tanaka (Hiroshima City Univ.) On some fractional optimal stopping problems 10
- 24 Toshiharu Fujita (Kyushu Inst. of Tech.) Stochastic decision process model with feedforward loop system — Uncertain state occurrence order— 15

14:15–15:15 Talk Invited by Statistics and Probability Section

- Daisuke Kurisu (Univ. of Tokyo) Modeling and statistical inference for nonstationary spatial data

15:30–16:30 Talk Invited by Statistics and Probability Section

- Ayaka Sakata (Inst. of Stat. Math.) Probabilistic inference with graphical models for regression problems

September 23rd (Sat) Conference Room VII

9:30–11:30

- 25 Keita Nakamura (Yokohama City Univ.) Quasi-symmetry and geometric marginal homogeneity in square contingency tables using Aitchison geometry 15
Tomoyuki Nakagawa (Meisei Univ.)
Kouji Tahata (Tokyo Univ. of Sci.)
- 26 Hisaya Okahara (Tokyo Univ. of Sci.) An asymmetry model based on f -divergence for multi-way contingency tables with ordered categories 15
Kengo Fujisawa (Tokyo Univ. of Sci., Yamaguchi)
Kouji Tahata (Tokyo Univ. of Sci.)
- 27 Kazuki Matsubara (Saitama Univ.) A new method for constructing additive BIB designs 15
- 28 Shoko Chisaki (Osaka Inst. of Tech.) A construction of regular spanning bipartite block designs 10
Ryoh Fuji-Hara (Univ. of Tsukuba*)
Nobuko Miyamoto (Tokyo Univ. of Sci.)
- 29 Xiao-Nan Lu (Gifu Univ.) An algebraic sufficient condition for a circulant almost orthogonal array to be D-optimal 15
Miwako Mishima (Gifu Univ.)
Nobuko Miyamoto (Tokyo Univ. of Sci.)
Masakazu Jimbo (Inst. of Stat. Math.)
- 30 Kento Egashira (Tokyo Univ. of Sci.) High-dimensional asymptotic properties of k-means and hierarchical clustering 15
Kazuyoshi Yata (Univ. of Tsukuba)
Makoto Aoshima (Univ. of Tsukuba)
- 31 Yumu Iwana (Univ. of Tsukuba) Correlation test for high-dimensional correlation matrix under the strongly spiked eigenvalue model 15
Kazuyoshi Yata (Univ. of Tsukuba)
Aki Ishii (Tokyo Univ. of Sci.)
Makoto Aoshima (Univ. of Tsukuba)
- 32 Koji Tsukuda (Kyushu Univ.) On testing the hypothesis of the allometric extension model in high-dimensional settings 15
Shun Matsuura (Keio Univ.)

14:15–16:20

- 33 Shuhei Mano (Inst. of Stat. Math.) On a quasi-linear partial differential equation of the first order appears
Masayo Y. Hirose (Kyushu Univ.) in estimation and the solution with differential geometry 15
- 34 Kou Fujimori (Shinshu Univ.) The Dantzig selector for semiparametric models of stochastic processes
Koji Tsukuda (Kyushu Univ.) 15
- 35 Noboru Nomura (Kochi Univ.) Integral calculation for orthant probability with polar coordinates 15
- 36 Shogo Nakakita (Univ. of Tokyo) Dimension-free concentration inequalities for sums of weakly dependent
Pierre Alquier (ESSEC Business School) random matrices 15
Masaaki Imaizumi (Univ. of Tokyo)
- 37 Xiaoqiang Zeng (Hokkaido Univ.) On two-step CLS estimation in stationary ADCINAR(1) process, revis-
Yoshihide Kakizawa (Hokkaido Univ.) ited 15
- 38 Yuichi Goto (Kyushu Univ.) Test for the existence of the residual spectrum 15
Xuze Zhang (Maryland Univ.)
Benjamin Kedem (Maryland Univ.)
Shuo Chen (Maryland Univ.)
- 39 Yan Liu (Waseda Univ.) Semiparametric empirical likelihood for circular distributions 15
U Lan (Waseda Univ.)
Masanobu Taniguchi (Waseda Univ.)
- 40 Fumiya Akashi (Univ. of Tokyo) Multivariate median based estimation methods for low-rank VAR mod-
els 15

Applied Mathematics

September 20th (Wed) Conference Room VIII

9:30–11:50

- 1 Naoki Matsumoto (Univ. of Ryukyus) Game connectivity of graphs 15
Tomoki Nakamigawa
(Shonan Inst. of Tech.)
- 2 Kiyoshi Yoshimoto (Nihon Univ.) On connectivities of edge-colored graphs 15
- 3 Kiyoshi Ando (Nat. Inst. of Informatics) A constructive characterization of 4-connected 4-regular graphs 15
- 4 Daiki Takahashi (Yokohama Nat. Univ.) 2-Connected spanning subgraphs of 3-connected planar graph 15
- 5 Sho Kubota (Osaka Inst. of Tech.) Mixed strongly regular graphs to induce periodic quantum walks 15
- 6 Yusuke Yoshie Periodicity of the Grover walk and graph structure 15
(Ishikawa Nat. Coll. of Tech.)
- 7 Hiroto Sekido (Yokohama Nat. Univ.) Regular graphs to induce Grover walks with even period 15
Sho Kubota (Osaka Inst. of Tech.)
Kiyoto Yoshino
(Hiroshima Inst. of Tech.)

- 8 Takako Endo(Watanabe) (Tohoku Univ.) Bipartite walks on bipartite graphs 15
Takashi Komatsu (Univ. of Yamanashi)
Norio Konno (Ritsumeikan Univ./Yokohama Nat. Univ.*)
Iwao Sato (Oyama Nat. Coll. of Tech.)
- 14:15–16:10**
- 9 Taisuke Hosaka (Yokohama Nat. Univ.) Parrondo’s game of quantum search based on quantum walk 10
Norio Konno (Ritsumeikan Univ./Yokohama Nat. Univ.*)
- 10 Akihiro Narimatsu (Univ. of Fukuchiyama) A spectral analysis of the Correlated Random Walk 15
Yusuke Ide (Nihon Univ.)
- 11 Takako Endo (Tohoku Univ.) Spectra of non-unitary one-dimensional quantum walks with a perturbation at the origin. 15
Yohei Matsumoto (Shinshu Univ.)
Akito Suzuki (Shinshu Univ.)
- 12 Tomohiro Kamiyoshi (Matsue Coll. of Tech.) On some equations of unified Stirling numbers obtained from exponential recursive matrices 15
Makoto Nagura (Osaka Electro-Comm. Univ.)
Otani Shin-ich (Kanto Gakuin Univ.)
- 13 Yuuya Yoshida (Nagoya Inst. of Tech.) On the number of linearly independent product vectors in subspaces over finite fields 15
- 14 Eiichi Bannai (Kyushu Univ.*) Multivariate P - and/or Q -polynomial association schemes 15
Hirotake Kurihara (Yamaguchi Univ.)
Da Zhao (Kyoto Univ.)
Yan Zhu (Univ. of Shanghai for Sci. Tech.)
- 15 Shuhei Tsujie (Hokkaido Univ. of Edu.) On correspondence between MAT partitions of free graphic hyperplane arrangements and local regular vines 15
Hung Manh Tran (National Univ. of Singapore)
Tan Nhat Tran (Leibniz Univ. Hannover)

16:30–17:30 Talk Invited by Applied Mathematics Section

Shoichi Tsuchiya (Senshu Univ.) HISTs and Halin graphs

September 21st (Thu) Conference Room VIII

9:30–11:30

- 16 Shinya Fujita (Yokohama City Univ.) Orientations for properly ordered coloring on vertex weighted trees ... 10
Remiko Iida (Yokohama City Univ.)
Shun-ichi Maezawa (Tokyo Univ. of Sci.)
- 17 Kuniharu Yokomura (Tokai Univ.) On degree conditions of semi-balanced 3-partite Hamiltonian graphs 15

18	<u>Takafumi Saikawa</u> (Nagoya Univ.) <u>Yosuke Tsuji</u> (Kitami Inst. of Tech.) Kazunori Matsuda (Kitami Inst. of Tech.)	Formalization of matching theory in Coq	15
19	<u>Iwao Sato</u> (Oyama Nat. Coll. of Tech.) Takashi Kmatsu (Univ. of Yamanashi) Norio Konno (Ritsumeikan Univ./Yokohama Nat. Univ.*)	CTM/Zeta correspondence	15
20	<u>Kohei Sato</u> (Oyama Nat. Coll. of Tech.) Takashi Komatsu (Univ. of Yamanashi) Norio Konno (Ritsumeikan Univ./Yokohama Nat. Univ.*) Iwao Sato (Oyama Nat. Coll. of Tech.)	Ronkin/Zeta correspondence	15
21	<u>Takashi Komatsu</u> (Univ. of Yamanashi) Norio Konno (Ritsumeikan Univ./Yokohama Nat. Univ.*) Iwao Sato (Oyama Nat. Coll. of Tech.) Shunya Tamura (Yokohama Nat. Univ.)	Mahler/Zeta correspondence	15
22	<u>Hikari Sakamoto</u> (Kanagawa Univ.) Norio Konno (Ritsumeikan Univ./Yokohama Nat. Univ.*) Kei Saito (Kanagawa Univ.)	A property of the summation of random variables determined by the Konno distribution	15
13:00–14:15			
23	<u>Madoka Awada</u> (Waseda Univ.)	A note on t -designs in isodual codes	15
24	<u>Masatake Hirao</u> (Aichi Pref. Univ.) Hiroshi Nozaki (Aichi Univ. of Edu.) Koji Tasaka (Aichi Pref. Univ.)	Spherical designs and modular forms of the D_4 lattice	15
25	<u>Kenji Tanino</u> (Kobe Univ.) Masanori Sawa (Kobe Univ.) Masatake Hirao (Aichi Pref. Univ.)	An upper bound for the degree of a certain type of B_d -invariant weighted spherical designs	15
26	<u>Teruyuki Mishima</u> (Kobe Univ.) Masanori Sawa (Kobe Univ.) Yukihiro Uchida (Tokyo Metro. Univ.)	The problem of the existence of centrally symmetric rational designs	15

September 22nd (Fri) Conference Room VIII

9:30–12:00

27	<u>Noboru Ito</u> (Ibaraki Nat. Coll. of Tech.)	Integrating curvature and quantizing Arnold strangeness invariant	15
28	<u>Kamolphet Intawong</u> (Ibaraki Nat. Coll. of Tech.)	Application of linking number theory to authentication technology . . .	15
29	<u>Takuya Nakagawa</u> (Ritsumeikan Univ.)	Existence of density functions for the running maximum of SDEs by non-truncated pure-jump Lévy processes.	15
30	<u>Itsuki Watanabe</u> (Waseda Univ.)	Markov chain approximation for Hamilton–Jacobi–Bellman equation with absorbing boundary	15

- 31 Emerson Gaw Escolar (Kobe Univ.) A topological analysis of the space of recipes 15
Masahiro Yuasa (Kobe Univ.)
- 32 Shoya Motonaga (Ritsumeikan Univ.) Nonintegrability of nearly integrable dynamical systems near regular
Kazuyuki Yagasaki (Kyoto Univ.) level sets 15
- 33 Koya Sakakibara Regularization by Bregman divergence of optimal transport on finite
(Kanazawa Univ./RIKEN) sets 15
Asuka Takatsu
(Tokyo Metro. Univ./RIKEN)
Keiichi Morikuni (Univ. of Tsukuba)
- 34 Baige Xu (Kobe Univ.) Classification of variables using Groebner basis for analysis of peripheral
Takaharu Yaguchi (Kobe Univ.) blood hematopoietic stem cell mobilization data 15
Yoshio Katayama (Kobe Univ.)
- 35 Tetsuya Ishiwata Discrete holomorphicity and a discrete version of Cauchy's integral
(Shibaura Inst. of Tech.) formula 15
Koya Sakakibara (Kanazawa Univ.)
- 14:15–16:30**
- 36 Kota Ohno (Chuo Univ.) The characteristic of the limit cycle and the growth of the chimera state
Toshiyuki Ogawa (Meiji Univ.) in coupled oscillator system 15
- 37 Mamoru Aizawa (Meiji Univ.) Mathematical model to describe the material properties of paste-like
Yu Ichida (Meiji Univ.) artificial bone 15
Yuki Kamaya (Meiji Univ.)
Shiori Kato (Meiji Univ.)
Minami Kosuge (Meiji Univ.)
Takashi Sakamoto (Meiji Univ.)
Rika Yamada (Meiji Univ.)
Shigetoshi Yazaki (Meiji Univ.)
- 38 Yu Ichida (Meiji Univ.) Classification of traveling wave solutions for certain degenerate parabolic
Takashi Sakamoto (Meiji Univ.) equations and the bifurcation at infinity 15
- 39 Koichi Anada A Remark on traveling wave solutions for a quasi-linear parabolic partial
(Waseda Univ. Senior High School) differential equation 15
Tetsuya Ishiwata
(Shibaura Inst. of Tech.)
Takeo Ushijima (Tokyo Univ. of Sci.)
- 40 Junyong Eom (Hokkaido Univ.) Local analysis for locating a single point target in time-domain fluores-
Nakamura Gen (Hokkaido Univ.) cence diffuse optical tomography 15
Goro Nishimura (Hokkaido Univ.)
Chunlong Sun
(Nanjing Univ. of Aeronautics and Astronautics)
- 41 Yoshitaro Tanaka Keller–Segel type approximation for nonlocal Fokker–Planck equations
(Future Univ.-Hakodate) in one-dimensional bounded domain 15
Hideki Murakawa (Ryukoku Univ.)
- 42 Kota Ikeda (Meiji Univ.) Existence of traveling wave solutions in continuous OV models 15
Toshiyuki Ogawa (Meiji Univ.)
Toru Kan (Osaka Metro. Univ.)

- 43 Yoshihisa Morita (Ryukoku Univ.*) Time backward profile of entire solutions to the bistable reaction-diffusion equation on unbounded metric graphs 15

16:45–17:45 Award Lecture for the 2022 Applied Mathematics Prize

- Shin-ichiro Ei (Hokkaido Univ.) On pattern formation problem and its contraction

September 23rd (Sat) Conference Room VIII

9:30–12:00

- 44 Masaki Imagawa (Kyoto Univ.) Convergence rates of an elliptic regularization applied to a stationary
Daisuke Kawagoe (Kyoto Univ.) advection equation 15
- 45 Sohei Tasaki (Hokkaido Univ.) Eigenpairs of the linear elasticity operator on the disk 15
- 46 Takashi Sakajo (Kyoto Univ.) Statistical laws of a one-dimensional turbulence model as a random
Yuta Tsuji PDE 15
- 47 Takashi Sakajo (Kyoto Univ.) The hydrodynamic Green's function and point vortex dynamics in a
Vikas Krishnamurthy doubly periodic domain 15
(Indian Inst. of Tech. Hyderabad)
- 48 Takaaki Nishida (Kyoto Univ.*) Thermohaline convections in the horizontal layer with non-uniform heat
Hiroshi Fujiwara (Kyoto Univ.) supply 15
Chun-Hsiung Hsia
(National Taiwan Univ.)
- 49 Hidenori Ogata The usage of the IMT-type variable transformation in numerical com-
(Univ. of Electro-Comm.) putations 15
- 50 Kazuki Koga (Tokyo Tech) On weak comparisons between the sphere and its approximations 15
- 51 Fuminori Sakaguchi (Univ. of Fukui) Direct evaluation of the mean squares errors of an integer-type algorithm
for ODEs 15
- 52 Tokuhiro Eto (Univ. of Tokyo) On a minimizing movement scheme for mean curvature flow with pre-
Yoshikazu Giga (Univ. of Tokyo) scribed contact angle in a curved domain and its computation 15

14:15–16:00

- 53 Haruki Takemura (Univ. of Tokyo) Convergence analysis of CIP method for the one-dimensional advection
Takahito Kashiwabara (Univ. of Tokyo) equation 15
- 54 Ryoki Endo (Niigata Univ.) Verified computation for shape derivative of the Laplacian eigenvalues
Xuefeng Liu (Niigata Univ.) 15
- 55 Yuki Chiba (Univ. of Tokyo) Nitsche's method for a Robin boundary value problem in a smooth
Norikazu Saito (Univ. of Tokyo) domain 15
- 56 Makoto Mizuguchi (Chuo Univ.) The quantitative error estimates for a full-discrete approximate solution
Mitsuhiro T. Nakao (Waseda Univ.) 15
Kouji Hashimoto
(Nakamura Gakuen Univ.)
Kouta Sekine (Chiba Inst. of Tech.)
Shin'ichi Oishi (Waseda Univ.)
- 57 Gabriel W. Duchesne (McGill Univ.) Computer-assisted proofs for global existence of solutions to semilinear
Jean-Philippe Lessard (McGill Univ.) parabolic equations 15
Akitoshi Takayasu (Univ. of Tsukuba)

- 58 Yoshitaka Watanabe (Kyushu Univ.) Computer-assisted proofs of unimodality of solutions for Proudman–Tomoyuki Miyaji (Kyoto Univ.) Johnson equation 15

16:15–17:15 Talk Invited by Applied Mathematics Section

- Kenta Ishimoto (Kyoto Univ.) Jeffery’s orbits and hydrodynamic shape of life

Topology

September 20th (Wed) Conference Room III

9:30–12:00

- 1 Masaaki Suzuki (Meiji Univ.) On the minimal order of knots 10
Takayuki Morifuji (Keio Univ.)
- 2 Yasutaka Nakanishi (Kobe Univ.*) Colors of virtual tangles 15
 Shin Satoh (Kobe Univ.)
- 3 Takuji Nakamura (Univ. of Yamanashi) Virtualized Δ -moves for virtual knots and links 10
Yasutaka Nakanishi (Kobe Univ.)
 Shin Satoh (Kobe Univ.)
Kodai Wada (Kobe Univ.)
- 4 Atsuhiko Mizusawa (Waseda Univ.) A classification of the component-homotopy classes of spatial graphs 15
Yuka Kotorii
 (Hiroshima Univ./RIKEN)
- 5 Koki Yanagida (Tokyo Tech) Parabolic Dijkgraaf–Witten invariants of links 15
- 6 Jun Murakami (Waseda Univ.) From bottom tangle to A_q polynomial 15
- 7 Hajime Kubota (Kyoto Univ.) A combinatorial proof of the connected sum formula for knot Floer homology 15
- 8 Yasuharu Nakae (Akita Univ.) A construction of epimorphisms between groups of fibered knots that preserve a meridian but the image of its longitude is killed 15
Teruaki Kitano (Soka Univ.)

14:20–15:20 Talk Invited by Topology Section

- Teruaki Kitano (Soka Univ.)^b Epimorphisms between knot groups and relations to geometric structures and invariants of a knot

15:40–17:30

- 9 Michihiko Fujii (Univ. of Ryukyus) The spherical growth series of amalgamated free products of infinite cyclic groups 15
Takuya Sakasai (Univ. of Tokyo)
- 10 Chihaya Jibiki (Tokyo Tech) Left-orderings on inductive limits of amalgamated free products 15
- 11 Akihiro Takano (Univ. of Tokyo) The p -colorable subgroup of Thompson’s group F 15
Yuya Kodama (Tokyo Metro. Univ.)
- 12 Yuya Kodama (Tokyo Metro. Univ.) Alexander’s theorem for stabilizer subgroups of Thompson’s group ... 15
Akihiro Takano (Univ. of Tokyo)

September 21st (Thu) Conference Room III

9:30–11:30

- 13 Ryo Kato (Kochi Univ. of Tech.) The first cohomology of the monochromatic comodule M_{n-1}^1 at any
 Katsumi Shimomura (Kochi Univ.) prime 10
 Maonosuke Shimomura (Kochi Univ.)
- 14 Hiroki Okajima W -originated elements in the stable homotopy groups of spheres 10
Ryo Kato (Kochi Univ. of Tech.)
 Katsumi Shimomura (Kochi Univ.)
- 15 Ryo Kato (Kochi Univ. of Tech.) Deformed cohomological Bousfield classes 10
- 16 Ryo Kato (Kochi Univ. of Tech.) A relation between Picard groups of some local categories 10
- 17 Kenshi Ishiguro (Fukuoka Univ.) Genus problem of the classifying spaces 10
 Makoto Yamagata (Fukuoka Univ.)
- 18 Hitoshi Moriyoshi (Nagoya Univ.) Corona index theorem for Cantor sets 15
 Toshikazu Natsume
 (Nagoya Inst. of Tech.)
- 19 Naotsugu Chinen On equivariant asymptotic dimension of actions of discrete groups on
 (Nat. Defense Acad. of Japan) non-compact Hausdorff spaces 15
 Takamitsu Yamauchi (Ehime Univ.)

September 21st (Thu) Conference Room I

11:40–12:00 Announcement of the 2023 MSJ Geometry Prize

September 21st (Thu) Conference Room III

13:00–14:00

- 20 Masahiro Takeda (Kyoto Univ.) Torsion in the space of commuting elements in a Lie group 15
 Daisuke Kishimoto (Kyushu Univ.)
- 21 Toshiyuki Akita (Hokkaido Univ.) Embeddings of Alexander quandles into conjugation quandles 10
- 22 Shunsuke Kano (Tohoku Univ.) Train track combinatorics and cluster algebras 15

September 22nd (Fri) Conference Room III

9:30–12:00

- 23 Tatsumasa Suzuki (Tokyo Tech) The d -invariants of the Brieskorn homology spheres with almost simple
 linear graphs 15
- 24 Tatsumasa Suzuki (Tokyo Tech) The d -invariant of any Brieskorn homology sphere 15
 Motoo Tange (Univ. of Tsukuba)
- 25 Tatsumasa Suzuki (Tokyo Tech) Pochette surgery along any ribbon 2-knot 15
 Motoo Tange (Univ. of Tsukuba)
- 26 Sakumi Sugawara (Hokkaido Univ.) Handle decompositions and Kirby diagrams for the complements of
 plane algebraic curves 15

27	Minami Taniguchi (Tokyo Tech)	Kirby–Thompson invariants for knotted surfaces	15
28	Mizuki Fukuda (AIST–Tohoku Univ.) Masaharu Ishikawa (Keio Univ.)	Distinguishing branched twist spins by fundamental groups	15
29	Tsukasa Isoshima (Tokyo Tech)	Infinitely many standard trisection diagrams for Gluck twisting	15
30	Natsuya Takahashi (Osaka Univ.)	Trisection genera for an exotic pair of 4-manifolds with boundary	15

14:20–15:20 Talk Invited by Topology Section

Kouichi Yasui (Osaka Univ.)	Smooth structures on 4-manifolds and genus functions
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15:40–17:00

31	Genki Omori (Tokyo Univ. of Sci.)	A minimal generating set for the quasitoric braid group	10
32	Ryoma Kobayashi (Ishikawa Nat. Coll. of Tech.) Nao Imoto	The level d principal congruence subgroup of $SL(n; \mathbb{Z})$	10
33	Ryoma Kobayashi (Ishikawa Nat. Coll. of Tech.)	The level d mapping class group of a non-orientable closed surface	10

Infinite Analysis

September 20th (Wed) Conference Room VI

9:30–12:00

1	Wenda Fang (Kyoto Univ.)	Generalized AKS scheme of integrability via vertex algebra	15
2	Yousuke Ohyama (Tokushima Univ.)	Global theory on q -Painlevé equations and special solutions	15
3	Kouichi Takemura (Ochanomizu Univ.)	Kernel function, q -integral transformation and q -Heun equations	15
4	Tetsu Masuda (Aoyama Gakuin Univ.) Teruhisa Tsuda (Aoyama Gakuin Univ.)	Rational solutions to the q -Painlevé system of type $E_7^{(1)}$	15
5	Hidehito Nagao (Akashi Coll. of Tech.)	Multivariable generalization of the additive difference Painlevé equation with the affine Weyl group symmetry of type $D_4^{(1)}$	15
6	Takahiko Nobukawa (Kobe Univ.) Taikei Fujii (Kobe Univ.)	Integral solutions and series solutions for the variant of the q -hypergeometric equation of degree three	15
7	Genki Shibukawa (Kobe Univ.) Satoshi Tsuchimi (Kobe Univ.)	The generalized Zwegers' μ -function and transformation formulas for the bilateral basic hypergeometric series	15
8	Hidetoshi Awata (Nagoya Univ.) Koji Hasegawa (Tohoku Univ.) Hiroaki Kanno (Nagoya Univ.) Ryo Okawa (Osaka Metro. Univ./Kyoto Univ.) Shamil Shakirov (Univ. of Geneva) Jun'ichi Shiraishi (Univ. of Tokyo) Yasuhiko Yamada (Kobe Univ.)	Non-stationary difference equation, affine Laumon space and quantization of discrete Painlevé equation 1	15

- 9 Hidetoshi Awata (Nagoya Univ.) Non-stationary difference equation, affine Laumon space and quantization of discrete Painlevé equation 2 15
 Koji Hasegawa (Tohoku Univ.)
 Hiroaki Kanno (Nagoya Univ.)
Ryo Okawa
 (Osaka Metro. Univ./Kyoto Univ.)
 Shamil Shakirov (Univ. of Geneva)
 Jun'ichi Shiraishi (Univ. of Tokyo)
 Yasuhiko Yamada (Kobe Univ.)

14:15–15:15 Talk Invited by Infinite Analysis Special Session

- Saiei-Jaeyeong Matsubara-Heo Algebraic equations and hypergeometric equations
 (Kumamoto Univ./Kumamoto Univ.)

September 21st (Thu) Conference Room VI

9:30–10:45

- 10 Yas-Hiro Quano Causal inference in statistics and probability formulae for counterfact
 (Suzuka Univ. of Med. Sci.) 15
 11 Allan John Gerrard Fundamentals of the nested algebraic Bethe ansatz 15
 (Ochanomizu Univ.)
 12 Masato Tanaka (Nagoya Univ.) A cocycle on the quantum deformation of the special linear group 15
 13 Hiroyuki Yamane (Univ. of Toyama) Hamiltonian cycles of Cayley graphs of Weyl groupoids 15
 Takato Inoue (Univ. of Toyama)
 14 Masato Okado (Osaka Metro. Univ.) Oscillator representations of quantum affine orthosymplectic superalgebras 15
 Jae-Hoon Kwon (Seoul National Univ.)
 Sin-Myung Lee (Seoul National Univ.)

11:00–12:00 Talk Invited by Infinite Analysis Special Session

- Makiko Sasada (Univ. of Tokyo) Discrete integrable systems from probabilistic perspectives
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Information for Speakers

The Organizing Committee apologizes that it had to cut the duration of contributed talks because of technical reasons. Since the schedule is very tight, we ask the speakers to strictly keep time. A bell will be rung when $2/3$ of the assigned time has passed. A second bell will be rung as soon as the time is up, and the speaker has to leave the stage.

Collaborative works are presented by the underlined authors. The talks with b marks denote presentations on blackboard. The speakers with \star marks are professors emeriti. If you find anything wrong in the program, do not hesitate to inform the Chair of Organizing Committee by sending e-mail to the address `program23sept@mathsoc.jp`.

Each conference room is equipped with a blackboard and a projector with HDMI and VGA interface for PC presentation. You are asked to use your own PC and to bring suitable accessories (for example, USB type C-HDMI adapter) for your presentation. The time for connecting your PC to the projector is a part of the assigned duration of your talk. You are strongly recommended to check beforehand if your slides can be properly displayed in the conference room. We also advise you to bring the PDF file of your presentation on a USB flash drive, just in case the PC connection does not work.

Information for Participants

Smoking is prohibited in the venue.

There is no parking area for participants. Please use public transportation.

Tohoku University is an eduroam participant.

You can check the website of Tohoku University CO-OP

<https://www.tohoku.u-coop.or.jp/en/>

for its business hours.
