Final: 2022/3/4

2022 The Mathematical Society of Japan
ANNUAL MEETING

Dates: March 28th (Mon)–31st (Thu), 2022

Supported by: Saitama University

Venue: Saitama University
Shimo-Okubo 255, Sakura-ku, Saitama-shi

Contact to: Faculty of Science, Department of Mathematics,
Saitama University
Shimo-Okubo 255, Sakura-ku, Saitama-shi
mail `saitama22mar@mathsoc.jp`

The Mathematical Society of Japan

	I 1-205, 1st Lecture Hall	II 1-206, 1st Lecture Hall	III 1-207, 1st Lecture Hall	IV 1-301, 1st Lecture Hall	V 1-304, 1st Lecture Hall	VI 1-401, 1st Lecture Hall	VII 1-402, 1st Lecture Hall	VIII 1-403, 1st Lecture Hall	IX 3-101, 3rd Lecture Hall
28th (Mon)	Functional Analysis 10:00–11:30	Functional Equations 9:00–12:00 14:15–16:15	Statistics and Probability 9:00–11:50 14:15–15:05	Algebra 9:30–11:45 15:30–17:40	Applied Mathematics 10:00–12:00 14:15–16:00	Geometry 9:20–12:00 14:15–16:00	Topology 9:30–12:00 14:15–15:05	Complex Analysis 9:30–11:50	Found. of Math. & Hist. of Math. 9:50–11:20 15:45–17:15
	Featured Invited Talks 13:00–14:00								
	Invited Talk 14:15–15:15	Invited Talk 16:30–17:30	Invited Talks 15:15–16:15 16:30–17:30	Invited Talk 14:15–15:15	Invited Talk 16:15–17:15	Invited Talk 16:15–17:15	Invited Talk 15:20–16:20	Invited Talk 14:15–15:15	Invited Talk 14:30–15:30
29th (Tue)	Functional Analysis 10:00–12:00	Functional Equations 9:00–12:00	Statistics and Probability 9:00–11:30	Algebra 9:00–12:00 13:00–14:00	Applied Mathematics 10:00–11:45 13:15–14:15	Geometry 9:45–11:45	Topology 9:30–11:50	Complex Analysis 9:30–11:30	Found. of Math. & Hist. of Math. 9:45–11:25
	Invited Talk 13:00–14:00	Invited Talk 13:00–14:00				Invited Talk 13:15–14:15	Invited Talk 13:15–14:15	Invited Talk 13:15–14:15	Invited Talk 13:00–14:00
	MSJ Prizes Presentation (1-301, 1st Lecture Hall) ····· (14:45–15:15) Plenary Talks (1-301, 1st Lecture Hall) Spring Prize Winner ····· (15:30–16:30) Yoshiko Ogata (Univ. of Tokyo) ····· (16:45–17:45)								
30th (Wed)	Functional Analysis 10:00–11:30	Functional Equations 9:00–12:00 14:15–16:15	Statistics and Probability 9:50–11:40	Algebra 9:30–10:30	Applied Mathematics 9:00–10:45 14:15–17:00	Geometry 9:10–11:45	Topology 9:30–12:00 14:15–15:15	Real Analysis 9:30–11:45 14:30–16:00	Infinite Analysis 10:00–12:00 14:15–14:50
	Featured Invited Talks 13:00–14:00								
	Invited Talk 14:15–15:15	Invited Talk 16:30–17:30	Invited Talks 14:25–15:25 15:45–16:45	Invited Talks 14:15–15:15 15:25–16:25 16:35–17:35	Invited Talk 11:00–12:00	Invited Talks 14:15–15:15 15:30–16:30	Invited Talk 15:30–16:30	Invited Talk 16:15–17:15	Invited Talk 15:00–16:00
31st (Thu)		Functional Equations 9:00–12:00 14:15–16:15	Statistics and Probability 9:50–11:40 14:20–16:25	Algebra 9:30–12:00 14:15–16:00	Applied Mathematics 9:00–10:45	Geometry 9:15–12:00		Real Analysis 9:30–12:00 14:15–15:15	Infinite Analysis 10:00–12:00
	Featured Invited Talks 13:00–14:00								
		Invited Talk 16:30–17:30			Invited Talk 11:00–12:00			Invited Talk 15:30–16:30	Invited Talk 14:15–15:15

Plenary Talks

March 29th (Tue) 1-301, 3F, 1st Lecture Hall

Award Lecture for the 2022 MSJ Spring Prize

Spring Prize Winner ..... (15:30–16:30)

Yoshiko Ogata (Univ. of Tokyo) Classification of gapped ground state phases in quantum spin systems ..... (16:45–17:45)

Featured Invited Talks

March 28th (Mon)

Conference Room II

Yuichi Yoshida (Nat. Inst. of Informatics) Spectral theory for directed graphs and hypergraphs ..... (13:00–14:00)

Conference Room III

Guest Talk from the Japan Society for Industrial and Applied Mathematics

Taiji Suzuki (Univ. of Tokyo) Mathematical theories of deep learning ..... (13:00–14:00)

Conference Room IV

Kenji Ueno (Yokkaichi Univ. / Kyoto Univ.*) Yang Hui suanfa and Seki Takakzu ..... (13:00–14:00)

March 30th (Wed)

Conference Room II

Masahiro Kubo (Wakayama Univ.) Time-dependent subdifferential evolution equations and quasi-variational evolution equations ..... (13:00–14:00)

Conference Room IV

Kimihiko Motegi (Nihon Univ.) Twisting knots and twisting Dehn surgeries ..... (13:00–14:00)

March 31st (Thu)

Conference Room III

Akihiro Higashitani (Osaka Univ.) Various commutative rings arising from combinatorial objects ..... (13:00–14:00)

Conference Room IV

Hiraku Nakajima (Univ. of Tokyo) Towards geometric Satake correspondence for Kac–Moody Lie algebras ..... (13:00–14:00)

Talks Invited by Research Sections and Special Session

March 28th (Mon)

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

Naoki Osada (Tokyo Woman's Christian Univ.*) — The works of Seki Takakazu and their propagation ····· (14:30–15:30)

Algebra (Conference Room IV)

Tatsuyuki Hikita (Kyoto Univ.) — K-theoretic canonical bases and their elliptic analogues ··· (14:15–15:15)

Geometry (Conference Room VI)

Yoshinori Hashimoto (Tokyo Tech) ♭ — Recent progress on constant scalar curvature Kähler metrics with cone singularities along a divisor ····· (16:15–17:15)

Complex Analysis (Conference Room VIII)

Kazuya Tohge (Kanazawa Univ.) — Revisiting the Stothers–Mason theorem with Nevanlinna ·· (14:15–15:15)

Functional Equations (Conference Room II)

Award Lecture for the 2021 MSJ Analysis Prize

Futoshi Takahashi (Osaka City Univ.) ♭ — Mathematical analysis related with Hardy inequalities ···· (16:30–17:30)

Functional Analysis (Conference Room I)

Megumi Sano (Hiroshima Univ.) — Harmonic transplantation and its application to functional inequalities ····· (14:15–15:15)

Statistics and Probability (Conference Room III)

Award Lecture for the 2021 MSJ Analysis Prize

Makoto Katori (Chuo Univ.) — Multiple Schramm–Loewner evolution and Dyson's Brownian motion model ····· (15:15–16:15)

Takahiro Hasebe (Hokkaido Univ.) — Loewner chains, Markov processes and non-commutative stochastic processes ····· (16:30–17:30)

Applied Mathematics (Conference Room V)

Tetsuji Taniguchi (Hiroshima Inst. of Tech.) — A smallest eigenvalues of graphs and a generalization of line graphs ····· (16:15–17:15)

Topology (Conference Room VII)

Yuya Koda (Hiroshima Univ.) — Mapping class groups of Heegaard splittings ····· (15:20–16:20)

March 29th (Tue)

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

Ryoma Sin'ya (Akita Univ.) — Separation and measurability problems on an infinite hierarchy of regular languages ····· (13:00–14:00)

Geometry (Conference Room VI)

Daisuke Tarama (Ritsumeikan Univ.) — On integrable geodesic flows of a semi-simple Lie group ··· (13:15–14:15)

Complex Analysis (Conference Room VIII)

Shinichi Tajima (Niigata Univ.*) — Complex analysis, algebraic analysis and algorithms in singularity thoery ····· (13:15–14:15)

Functional Equations (Conference Room II)

Hiroshi Matsuzawa (Kanagawa Univ.) A free boundary problem of reaction-diffusion equation with a multi-stable type nonlinearity in high space dimensions · (13:00–14:00)

Functional Analysis (Conference Room I)

Takeshi Ikeda (Waseda Univ.) K-theoretic Schubert calculus · (13:00–14:00)

Topology (Conference Room VII)

Takefumi Nosaka (Tokyo Tech) Nilpotent knot-invariants and Johnson homomorphisms of the mapping class group · (13:15–14:15)

March 30th (Wed)

Algebra (Conference Room IV)

Award Lecture for the 2022 MSJ Algebra Prize

Osamu Fujino (Kyoto Univ.) Generalization of the Kodaira vanishing theorem and its application to birational geometry · (14:15–15:15)

Award Lecture for the 2022 MSJ Algebra Prize

Masaaki Furusawa (Osaka City Univ.) On the Gross–Prasad conjecture with its refinement for $(\mathrm{SO}(5), \mathrm{SO}(2))$ and the generalized Boecherer conjecture · (15:25–16:25)

Award Lecture for the 2022 MSJ Algebra Prize

Izuru Mori (Shizuoka Univ.) Classification of noncommutative projective surfaces (focusing on AS-regular algebras) · (16:35–17:35)

Geometry (Conference Room VI)

Takefumi Kondo (Kagoshima Univ.) Nonlinear spectral gaps of Coxeter groups with respect to CAT(0) spaces · (14:15–15:15)

Masatoshi Kokubu (Tokyo Denki Univ.) Flat fronts in hyperbolic three-space and related topics · (15:30–16:30)

Functional Equations (Conference Room II)

Motohiro Sobajima (Tokyo Univ. of Sci.) Weighted energy estimates for wave equations with space-dependent damping · (16:30–17:30)

Real Analysis (Conference Room VIII)

Yasunori Kimura (Toho Univ.) Resolvent operators on complete geodesic spaces · (16:15–17:15)

Functional Analysis (Conference Room I)

Shûichi Ohno Weighted composition operators and their differences · (14:15–15:15)

Statistics and Probability (Conference Room III)

Masayo Hirose (Kyushu Univ.) Small area inference under area level model and its application · (14:25–15:25)

Takeshi Emura (Kurume Univ.) Estimating the difference of survival distributions; a copula-based approach to dependent censoring · (15:45–16:45)

Applied Mathematics (Conference Room V)

Yusuke Imoto (Kyoto Univ.) Invitation to single-cell data science · (11:00–12:00)

Topology (Conference Room VII)

Takahiro Matsushita (Univ. of Ryukyus) Invariant quasimorphisms and mixed commutator lengths · (15:30–16:30)

Infinite Analysis (Conference Room IX)

Takeo Kojima (Yamagata Univ.) Quadratic relations of the deformed W-algebra $\mathcal{W}_{q,t}(\mathfrak{g})$ ··· (15:00–16:00)

March 31st (Thu)

Functional Equations (Conference Room II)

Yoshihiro Ueda (Kobe Univ.) Mathematical analysis of the dissipative structure for the symmetric hyperbolic system with relaxation ····· (16:30–17:30)

Real Analysis (Conference Room VIII)

Shuji Yoshikawa (Oita Univ.) Mathematical analysis for the problems related to dynamic deformation of CRFP ····· (15:30–16:30)

Applied Mathematics (Conference Room V)

Keita Iida (Osaka Univ.) Single-cell gene expression data analysis ····· (11:00–12:00)

Infinite Analysis (Conference Room IX)

Tomohiro Sasamoto (Tokyo Tech) Skew RSK, affine crystal and KPZ ····· (14:15–15:15)

Open Lectures for Citizens

Date: March 27th (Sun) 14:00–16:30
Venue: 1-301, 3F, 1st Lecture Hall
Sponsored by: The Mathematical Society of Japan
Supported by: Saitama University
Program: Opening Speech ..... (14:00–14:10)
Senjou Shimizu (President of MSJ / Kyoto Univ.)

Lecture 1: "The Mathematics for Population and Epidemics" ..... (14:10–15:10)
Hisashi Inaba (Univ. of Tokyo)

Lecture 2: "Needle Rotation Arising in Mathematics" ..... (15:30–16:30)
Neal Bez (Saitama Univ.)

Web Page: `https://www.mathsoc.jp/en/meeting/saitama22mar/`

Foundation of Mathematics and History of Mathematics

March 28th (Mon) Conference Room IX

9:50–11:20

1 Noriko Tanaka (Aichi Prefectural Asahigaoka High School) — The Experimental Class for Science Education in Kyoto in the near end of the World War II ····· 15

2 Makoto Tamura (Osaka Sangyo Univ.) — On the solution of cubic equations in China ····· 15

3 Tsukane Ogawa (Yokkaichi Univ.) — Mathemacical thought of Oka Yukitada (1791–?) ····· 15

4 Hideyuki Majima (Ochanomizu Univ.*) — The year 2022, the memorial 314th year of Seki Takakazu and the 300th anniversary of Tetsujjutsu-Sankei ····· 15

5 Mitsuo Morimoto (Yokkaichi Univ. / Sophia Univ.*) — On the *Sekisan Shidensho* ····· 15

11:30–11:45 Mathematics History Team Meeting

14:30–15:30 Talk Invited by Section on Foundation and History of Mathematics

Naoki Osada (Tokyo Woman's Christian Univ.*) — The works of Seki Takakazu and their propagation

15:45–17:15

6 Takahiro Seki (Niigata Univ.) — Commutativity of non-associative substructural logics with restricted weakening and contraction ····· 15

7 Toshihiko Kurata (Hosei Univ.), Ken-etsu Fujita (Gunma Univ.) — Spectral spaces for models of intuitionistic logic ····· 15

8 Hisashi Aratake (Kyoto Univ.) — Limits, colimits, and spectra of modelled spaces ····· 15

9 Kenshi Miyabe (Meiji Univ.) — The rate of convergence of computable inductions ····· 15

10 Kohtaro Tadaki (Chubu Univ.) — A refinement of quantum information theory by algorithmic randomness VI ····· 15

March 29th (Tue) Conference Room IX

9:45–11:25

11 Kenta Tsukuura (Univ. of Tsukuba) — The extent of saturation of induced ideals ····· 15

12 Daisuke Ikegami (Shibaura Inst. of Tech.) — I-regularity, determinacy, and Solovay models ····· 15

13 Teruyuki Yorioka (Shizuoka Univ.) — σ-uniformizations of ladder system colorings and Todorcevic's fragments of Martin's Axiom ····· 15

14 Koichiro Ikeda (Hosei Univ.) — Imaginaries in generic structures ····· 15

15 Hirotaka Kikyo (Kobe Univ.) — On model completeness of certain generic structures ····· 15

16 Akito Tsuboi (Univ. of Tsukuba*) — Instability, CH and Keisler's isomorphism theorem ····· 10

11:30–11:45 Research Section Assembly

13:00–14:00 Talk Invited by Section on Foundation and History of Mathematics

Ryoma Sin'ya (Akita Univ.) Separation and measurability problems on an infinite hierarchy of regular languages

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Algebra

March 28th (Mon) Conference Room IV

9:30–11:45

1 Kana Ito (Tokyo Tech) The relation between level 2 standard modules of type $A^{(2)}_{\mathrm{odd}}$ and Z-operators ····· 15

2 Yutaka Yoshii (Ibaraki Univ.) Structure of certain modules for the hyperalgebra $\mathrm{Dist}((\mathrm{SL}_2)_r)$ ····· 10

3 Ryotaro Kawago (Waseda Univ.), Takeshi Ikeda (Waseda Univ.) Multiplicities of Schubert varieties in the flag varieties of classical types ····· 15

4 Tomohiro Itagaki (Takasaki City Univ. of Econ.), Takeshi Torii (Okayama Univ.), Kazunori Nakamoto (Univ. of Yamanashi) Hochschild cohomology of N_m ····· 15

5 Yuichiro Goto (Osaka Univ.)♭ Generalizations of the relationship between quasi-hereditary algebras and directed bocses ····· 10

6 Yasuaki Gyoda (Nagoya Univ.) Generalization of Gabriel's theorem in τ-tilting theory and its cluster algebraic approach ····· 15

7 Toshiya Yurikusa (Tohoku Univ.), Yasuaki Gyoda (Nagoya Univ.) Bongartz completion via c-vectors ····· 10

8 Ryotaro Koshio (Tokyo Univ. of Sci.), Yuta Kozakai (Tokyo Univ. of Sci.) Support τ-tilting modules and semibricks over blocks under vanising conditions of Schur multipliers of factor groups ····· 10

9 Fumihito Oda (Kinki Univ.), Yugen Takegahara (Muroran Inst. of Tech.) Crossed Burnside rings and cohomological Mackey 2-motives ····· 10

10 Hirotake Kurihara (Yamaguchi Univ.), Akihiro Higashitani (Osaka Univ.) Homogeneous quandles arising from finite groups ····· 15

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

Tatsuyuki Hikita (Kyoto Univ.) K-theoretic canonical bases and their elliptic analogues

15:30–17:40

11 Kohsuke Shibata (Nihon Univ.) — F-rationality of two-dimensional graded rings with a rational singularity ····· 15

12 Shinnosuke Ishiro (Nihon Univ.), Kazuma Shimomoto (Nihon Univ.), Mohsen Asgharzadeh — Surjectivity of some scalar maps on local cohomology modules and an application to the second vanishing thorem ····· 15

13 Shinnosuke Ishiro (Nihon Univ.), Kazuma Shimomoto (Nihon Univ.), Kei Nakazato (Nagoya Univ.) — Perfectoid towers and its small tilts ····· 15

14 Jun Horiuchi (Nippon Inst. of Tech.), Kazuma Shimomoto (Nihon Univ.), Kazufumi Eto (Nippon Inst. of Tech.) — On integrality of rings and the monoidal map ····· 15

15 Mitsuhiro Miyazaki (Kyoto Univ. of Edu.) — On the non-Gorenstein locus of the Ehrhart ring of the stable set polytope of an odd cycle graph ····· 15

16 Yuki Ishihara (Tokyo Univ. of Sci.) — On double ideal quotient and primary decomposition ····· 15

17 Shinya Kumashiro (Oyama Nat. Coll. of Tech.) — Graded filtrations and ideals of reduction number two ····· 15

18 Kazuho Ozeki (Yamaguchi Univ.) — The first Hilbert coefficient of stretched ideals ····· 15

March 29th (Tue) Conference Room IV

9:00–12:00

19 Makoto Sakurai (Kaichi Gakuen) — Topological chiral algebras and characteristic classes ····· 15

20 Akio Nakagawa (Chiba Univ.) — Appell–Lauricella hypergeometric functions over finite fields ····· 15

21 So Yamagata (Hokkaido Univ.), Simona Settepanella — On the non very generic of hyperplane arrangements. ····· 15

22 Norihiro Nakashima (Nagoya Inst. of Tech.), Shuhei Tsujie (Hokkaido Univ. of Edu.) — The conditions for the extended Shi and Catalan arrangements of type A to be hereditarily free ····· 15

23 Tetsuya Ando (Chiba Univ.) — Extremal positive semidefinite forms of cubic homogeneous polynomials of three variables ····· 15

24 Tomohiro Iwami (Kyushu Inst. of Tech.) — Intermediate Jacobian of an extended three-dimensional extremal neighborhood. Part I ····· 15

25 Makoto Miura (Kyoto Univ.) — Geometric transitions for Calabi–Yau hypersurfaces ····· 15

26 Takeshi Usa (Univ. of Hyogo) — The adjacent concurrence on infinitesimally unstable Betti syzygy classes ····· 15

27 Ryo Ohashi (Yokohama Nat. Univ.), Momonari Kudo (Univ. of Tokyo), Shushi Harashita (Yokohama Nat. Univ.) — The a-numbers of non-hyperelliptic curves of genus three with large cyclic automorphism group ····· 15

28 Ryo Ohashi (Yokohama Nat. Univ.) — On the maximality or minimality of Howe curves of genus 3 ····· 15

13:00–14:00

29 Kohei Sato (Oyama Nat. Coll. of Tech.)
Yusuke Sato (Univ. of Tokyo)
Hilb-desingularizations for three-dimensional canonical cyclic quotient singularities ····· 15

30 Yuki Mizuno (Waseda Univ.)
An explicit construction of derived moduli stacks of Harder–Narasimhan filtrations ····· 15

31 Norihiko Minami (Nagoya Inst. of Tech.)
Two applications of the birational motive to the retract $(-i)$-rationality ····· 15

March 30th (Wed) Conference Room IV

9:30–10:30

32 Hiroki Matsui (Tokushima Univ.)
Olgur Celikbas (West Virginia Univ.)
Uyen Le (West Virginia Univ.)
Paraphrasing Huneke–Wiegand conjecture ····· 10

33 Kaito Kimura (Nagoya Univ.)
Yuya Otake (Nagoya Univ.)
Ryo Takahashi (Nagoya Univ.)
Auslander–Reiten conjecture over Cohen–Macaulay rings ····· 15

34 Masahisa Sato (Aichi Univ. / Univ. of Yamanashi*)
On generalized Nakayama(Azumaya)'s lemma ····· 10

35 Masaki Matsuno (Shizuoka Univ.)
Haigang Hu (Shizuoka Univ.)
Izuru Mori (Shizuoka Univ.)
Noncommutative smooth conics in Calabi–Yau quantum projective planes ····· 15

11:00–12:00 Presentation Ceremony for the 2021 & 2022 MSJ Algebra Prize

14:15–15:15 Award Lecture for the 2022 MSJ Algebra Prize

Osamu Fujino (Kyoto Univ.)
Generalization of the Kodaira vanishing theorem and its application to birational geometry

15:25–16:25 Award Lecture for the 2022 MSJ Algebra Prize

Masaaki Furusawa (Osaka City Univ.)
On the Gross–Prasad conjecture with its refinement for $(\mathrm{SO}(5), \mathrm{SO}(2))$ and the generalized Boecherer conjecture

16:35–17:35 Award Lecture for the 2022 MSJ Algebra Prize

Izuru Mori (Shizuoka Univ.)
Classification of noncommutative projective surfaces (focusing on AS-regular algebras)

March 31st (Thu) Conference Room IV

9:30–12:00

36 Shigeru Iitaka (Gakushuin Univ.*)
Ultra 2 perfect numbers of Mersenne type ····· 10

37 Shigeru Iitaka (Gakushuin Univ.*)
Hikaru Kajita (Crimson Global Academy)
Ultra perfect numbers of twin primes type ····· 10

38 Daniel Tsai (Nagoya Univ.) ♭
The fundamental period of a periodic phenomenon pertaining to v-palindromes ····· 15

14:15–16:00

Geometry

March 28th (Mon) Conference Room VI

9:20–12:00

3 Daisuke Kazukawa (Osaka Univ.), Takumi Yokota (Tohoku Univ.) — Boundedness of precompact sets of metric measure spaces ····· 15

4 Kenshiro Tashiro (Tohoku Univ.) — On the systolic inequality on compact quotients of Carnot groups ···· 15

5 Hiroki Nakajima (Tohoku Univ.), Takashi Shioya (Tohoku Univ.) — A natural compactification of the Gromov–Hausdorff space ····· 15

6 Homare Tadano (Yamaguchi Univ.) — Radial m-Bakry–Émery Ricci curvatures, Riccati inequalities, and Myers-type theorems ····· 10

7 Homare Tadano (Yamaguchi Univ.) — Ambrose and Calabi type theorems via m-Bakry–Émery Ricci curvature ····· 15

8 Homare Tadano (Yamaguchi Univ.) — New compactness criteria via m-Bakry–Émery Ricci curvature of exponential decay ····· 10

9 Homare Tadano (Yamaguchi Univ.) — Integral radial m-Bakry–Émery Ricci curvatures and Myers–Ambrose type theorems ····· 10

10 Homare Tadano (Yamaguchi Univ.) — Cheeger–Gromov–Taylor type compactness theorems via integral radial m-Bakry–Émery Ricci curvatures ····· 10

14:15–16:00

11 Masaya Kawamura (Kagawa Nat. Coll. of Tech.) — On estimates for a function on almost Hermitian manifolds and its application to the Monge–Ampère equation ····· 15

12 Satoshi Nakamura (Numazu Nat. Coll. of Tech.) — Calabi type functionals for coupled Kähler–Einstein metrics ····· 15

13 Naoto Yotsutani (Kagawa Univ.) — Diffeomorphism classes of the doubling Calabi–Yau threefolds ····· 15

14 Yuta Watanabe (Univ. of Tokyo) — Cohomology on neighborhoods of non-pluriharmonic loci in pseudoconvex Kähler manifolds ····· 15

15 Takayuki Moriyama (Mie Univ.), Takashi Nitta (Mie Univ.) — Graded algebra structure on the space of quaternionic k-vector fields ····· 15

16 Isami Koga (Meiji Univ.), Yasuyuki Nagatomo (Meiji Univ.) — Equivariant harmonic immersions of complex projective line into the complex Grassmannian manifolds of rank two ····· 15

16:15–17:15 Talk Invited by Geometry Section

Yoshinori Hashimoto (Tokyo Tech) ♭ — Recent progress on constant scalar curvature Kähler metrics with cone singularities along a divisor

March 29th (Tue) Conference Room VI

9:45–11:45

17 Noriaki Ikeda (Ritsumeikan Univ.), Yuji Hirota (Azabu Univ.) — Homotopy momentum sections on pre-multisymplectic manifold ····· 15

18 Taika Okuda (Tokyo Univ. of Sci.), Akifumi Sako (Tokyo Univ. of Sci.) — Deformation quantization with separation of variables for 2-complex dimensional locally symmetric Kähler manifold ····· 15

19 Yuya Takahashi (Nagoya Univ.) — The moduli space of spatial polygons and geometric quantization ···· 15

20 Yuji Hirota (Azabu Univ.), Tosiaki Kori (Waseda Univ.) — On the existence of (twisted) Dirac structures over the space of connections on 3 and 4 dimensional manifolds ····· 15

21 Takeru Asaka (Univ. of Tokyo) ♭
Tsukasa Ishibashi (Kyoto Univ.)
Shunsuke Kano (Tohoku Univ.)
Earthquake maps and cluster algebras ····· 15

22 Takashi Otofuji (Nihon Univ.)
Martin Guest (Waseda Univ.)
Stokes matrices of tt^*-Toda equations and positive energy representations of affine Lie algebras ····· 10

23 Masahiro Futaki (Chiba Univ.)
Fumihiko Sanda (Kyoto Univ.)
Equivariant homological mirror symmetry for CP1 ····· 15

13:15–14:15 Talk Invited by Geometry Section

Daisuke Tarama (Ritsumeikan Univ.) On integrable geodesic flows of a semi-simple Lie group

March 30th (Wed) Conference Room VI

9:10–11:45

24 Yuuki Sasaki (Tokyo Nat. Coll. of Tech.)
Maximal antipodal sets of E_6 and some compact symmetric spaces ··· 15

25 Shoichi Fujimori (Hiroshima Univ.)
Shin Kaneda (Hiroshima Univ.)
Higher genus nonorientable maximal surfaces ····· 15

26 Hiroshi Sawai
(Numazu Nat. Coll. of Tech.)
On the inverse of the structure theorem for Vaisman solvmanifolds ··· 15

27 Kazuhiko Takano (Shinshu Univ.)
On trajectory of mass points inertially moving in the Minkowski space ····· 10

28 Rika Akiyama (Tokyo Metro. Univ.)
Takashi Sakai (Tokyo Metro. Univ.)
Yuichiro Sato
(Kogakuin Univ./Tokyo Metro. Univ.)
The first variational formulae for integral invariants of the second fundamental form of a map between Riemannian manifolds ····· 15

29 Yuya Kodama (Tokyo Metro. Univ.)
Generalizations of the Lodha–Moore group ····· 15

30 Taro Kimura
(Nat. Inst. of Tech., Tsuruoka Coll.)
Katsuya Mashimo (Hosei Univ.)
Biharmonic Cartan embeddings defined by inner automorphism ····· 15

31 Nobutaka Boumuki (Oita Univ.)
On the dimensions of linear spaces concerning holomorphic vector bundles over elliptic orbits ····· 15

32 Kazuhiro Okumura
(Asahikawa Nat. Coll. of Tech.)
Real hypersurfaces in a nonflat complex space form whose star-Ricci tensor is $\mathbb{D}$-parallel ····· 10

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

Takefumi Kondo (Kagoshima Univ.) Nonlinear spectral gaps of Coxeter groups with respect to CAT(0) spaces

15:30–16:30 Talk Invited by Geometry Section

Masatoshi Kokubu (Tokyo Denki Univ.) Flat fronts in hyperbolic three-space and related topics

March 31st (Thu) Conference Room VI

9:15–12:00

33 Natsuo Miyatake (Osaka Univ.)♭ Generalized Kazdan–Warner equations on foliated manifolds ····· 15

34 Keita Kunikawa (Utsunomiya Univ.), Yohei Sakurai (Saitama Univ.) Liouville type theorem for harmonic maps of controlled growth ····· 15

35 Junya Takahashi (Tohoku Univ.), Colette Anné (Univ. de Nantes) Small eigenvalues of the rough and Hodge Laplacians under fixed volume ····· 15

36 Tomoya Nakamura (Kogakuin Univ.), Naoki Kimura (Waseda Univ.) The compatibility of Jacobi structures and pseudo-Riemannian cometrics ····· 15

37 Asuka Takatsu (Tokyo Metro. Univ.)♭, Kazuhiro Ishige (Univ. of Tokyo), Paolo Salani (Univ. Firenze) Concavity preserved by heat flow ····· 15

38 Shin Nayatani (Nagoya Univ.) Laplacian first-eigenvalue maximization and embedding optimization ····· 15

39 Takumi Gomyou (Nagoya Univ.), Shin Nayatani (Nagoya Univ.) Maximization of the first eigenvalue and embedding of a finite graph ····· 15

40 Norihiko Minami (Nagoya Inst. of Tech.) Cohomological characterization of the hierarchical structures interpolating the uniruledness and the rationally connectedness ····· 15

41 Masayuki Aino (RIKEN)♭ Convergence of the Laplacian Eigenmaps and its rate for submanifolds that are not necessarily smooth ····· 15

Complex Analysis

March 28th (Mon) Conference Room VIII

9:30–11:50

1 Shun Kumagai (Tohoku Univ.) Family of flat surfaces with a parallelogram decomposition ····· 15

2 Yûsuke Okuyama (Kyoto Inst. Tech.) Uniform perfectness in non-archimedean dynamics ····· 15

3 Katsuhiko Matsuzaki (Waseda Univ.), Huaying Wei (Waseda Univ.) BMO embeddings, chord-arc curves, and Riemann mapping parametrization ····· 15

4 Katsunori Shimomura (Ibaraki Univ.) Real rational function and time transformation of caloric morphism on semi-euclidean spaces ····· 15

5 Ryoya Fukasaku (Kyushu Univ.), Shinichi Tajima (Niigata Univ.*) Efficient algorithms for computing univariate residues ····· 10

6 Yoshihiko Shinomiya (Shizuoka Univ.) Period matrices of some hyperelliptic Riemann surfaces ····· 15

7 Sachiko Hamano (Osaka City Univ.), Masakazu Shiba (Hiroshima Univ.*) The period matrices of an open Riemann surface and its closings in the Siegel upper half space ····· 15

8 Joe Kamimoto (Kyushu Univ.) Resolution of singularities for C^∞ functions and meromorphy of local zeta functions ····· 15

9 Rikio Yoneda (Kanazawa Univ.) Weighted composition operators between H^p and L^q_a ····· 10

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

Kazuya Tohge (Kanazawa Univ.) Revisiting the Stothers–Mason theorem with Nevanlinna

March 29th (Tue) Conference Room VIII

9:30–11:30

10 Satoshi Ogawa (Osaka City Univ.) Linearization of transition functions along some Levi-flat hypersurfaces with the structure of S^1-bundle ····· 15

11 Shota Kikuchi (Nagoya Univ.) On sharper estimates of Ohsawa–Takegoshi L^2-extension theorem in higher dimensional case ····· 15

12 Takeo Ohsawa (Nagoya Univ.*) ♭ On the cohomology vanishing with polynomial growth on complex manifolds with pseudoconvex boundary ····· 15

13 Takanori Ayano (Osaka City Univ.)
Victor M. Buchstaber (Steklov Inst. of Math.)
Reduction of hyperelliptic functions of genus 2 to elliptic functions ··· 15

14 Takayuki Koike (Osaka City Univ.) Holomorphic foliation associated with a semi-positive class of numerical dimension one ····· 15

15 Yoshihiko Matsumoto (Osaka Univ.) The CR Killing operator and the Bernstein–Gelfand–Gelfand construction ····· 15

16 Yusaku Tiba (Ochanomizu Univ.) Asymptotic estimates of holomorphic sections on Bohr–Sommerfeld Lagrangian submanifolds ····· 15

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

Shinichi Tajima (Niigata Univ.*) Complex analysis, algebraic analysis and algorithms in singularity thoery

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Functional Equations

March 28th (Mon) Conference Room II

9:00–12:00

1 Daichi Komori (Hokkaido Univ.) The equivalence of the sheaf of pseudodifferential operator and its symbol class ····· 12

2 Shunya Adachi (Kumamoto Univ.) Monodromy invariant Hermitian forms for second order Fuchsian differential equations with four singularities ····· 12

3 Genki Shibukawa (Kobe Univ.) Artin-style characterizations for multiple gamma and sine functions ·· 10

4 Hiroshi Ogawara (Kumamoto Univ.) Differential transcendence of solutions for q-difference equation of Ramanujan function ····· 12

5 Takashi Aoki (Kinki Univ.*)
Takao Suzuki (Kinki Univ.)
Shofu Uchida (Kinki Univ.)
Exact WKB analysis for the Pearcey system with a large parameter ····· 12

6 Kazuki Ishibashi (Hiroshima Nat. Coll. of Maritime Tech.) — Nonoscillation theorems for half-linear dynamic equations with mixed derivatives on a time scale ····· 12

7 Hiroyuki Usami (Gifu Univ.), Manabu Naito (Ehime Univ.⋆) — On the existence and asymptotic behavior of solutions of perturbed half-linear ordinary differential equations ····· 12

8 Tetsutaro Shibata (Hiroshima Univ.) — Asymptotic behavior of solution to semilinear eigenvalue problem ···· 12

9 Marius Ghergu (Univ. College Dublin), Yasuhito Miyamoto (Univ. of Tokyo), Vitaly Moroz (Swansea Univ.) — Polyharmonic inequalities with nonlocal terms ····· 10

10 Takeyuki Nagasawa (Saitama Univ.), Aya Ishizeki (Saitama Univ.) — The Möbius energies of knots and links: Decomposition, the cosine formula, and their Möbius invariance ····· 10

11 Takeyuki Nagasawa (Saitama Univ.), Aya Ishizeki (Saitama Univ.) — The Möbius energy of knots as a limit of the Möbius energy of links ····· 10

14:15–16:15

12 Toshio Horiuchi (Ibaraki Univ.) — The CKN type inequalities involving non-doubling weights ····· 12

13 Hiroshi Ando (Ibaraki Univ.), Toshio Horiuchi (Ibaraki Univ.⋆) — Variational problems relating the generalized weighted Hardy's inequalities with compact perturbations ····· 12

14 Naoki Hamamoto (Osaka Pref. Univ.) — Sharp Rellich–Hardy inequality for constrained vector fields ····· 10

15 Yoshinori Kametaka (Osaka Univ.⋆), Kohtaro Watanabe (Nat. Defense Acad. of Japan), Atsushi Nagai (Tsuda Coll.), Kazuo Takemura (Nihon Univ.), Hiroyuki Yamagishi (Tokyo Metropolitan Coll. of Indus. Tech.) — Positivity and hierarchical structure of Green functions and the best constant of Sobolev inequality corresponding to a bending problem of a beam on a half line ····· 10

16 Tatsuki Mori (Musashino Univ.), Sohei Tasaki (Hokkaido Univ.), Tohru Tsujikawa (Univ. of Miyazaki⋆), Shoji Yotsutani (Ryukoku Univ.⋆) — Global structure of stationary solutions for the 1-dimension Fix–Caginalp equation ····· 12

17 Kengo Terai (Univ. of Tokyo), Hiroyoshi Mitake (Univ. of Tokyo) — On weak solutions to first-order discount mean field games ····· 10

18 Ryunosuke Mori (Meiji Univ.), Eita Tomimatsu (Tokyo Tech), Yoshihiro Tonegawa (Tokyo Tech) — On a strong solution to a generalized mean curvature flow with a transport term in the sense of Brakke's formulation ····· 12

16:30–17:30 Award Lecture for the 2021 MSJ Analysis Prize

Futoshi Takahashi (Osaka City Univ.) ♭ — Mathematical analysis related with Hardy inequalities

March 29th (Tue) Conference Room II

9:00–12:00

19 Tomoyuki Oka (Tohoku Univ.), Goro Akagi (Tohoku Univ.) — Space-time periodic homogenization for the porous medium equation with nonnegative initial data ····· 12

20 Ryuichi Sato (Fukuoka Univ.)
Takahiro Kosugi (Tottori Univ. of Environ. Stud.)
On existence of solutions to a system of fully nonlinear parabolic equations · · · · · 12

21 Yu Yoshimi (Kyoto Univ.)
Takayoshi Ogawa (Tohoku Univ.)
Senjo Shimizu (Kyoto Univ.)
Maximal L^1-regularity of the heat equation under the oblique boundary condition · · · · · 10

22 Hiroshi Wakui (Tokyo Univ. of Sci.)
Szymon Cygan (Univ. of Wrocław)
Grzegorz Karch (Univ. of Wrocław)
Krzysztof Krawczyk (Univ. of Wrocław)
Stability of constant steady states of a drift-diffusion equation · · · · · 12

23 Yekaterina Epshteyn (Univ. of Utah)
Chun Liu (Illinois Inst. of Tech.)
Masashi Mizuno (Nihon Univ.)
Long-time asymptotic behavior for solutions to the Fokker–Planck equation related to the evolution of grain boundaries · · · · · 12

24 Yuki Tsukamoto (Meiji Univ.)
Convergence of the Allen–Cahn equation with transport term in a bounded domain · · · · · 10

25 Tsukasa Iwabuchi (Tohoku Univ.)
A spectral localization applied to the critical surface quasi-geostrophic equation on a ball · · · · · 12

26 Dáithí Ó hAodha (Tohoku Univ.)
Tsukasa Iwabuchi (Tohoku Univ.)
The optimal decay estimate of solutions to the surface quasi-geostrophic equation · · · · · 12

27 Masahiko Shimojo (Tokyo Metro. Univ.)
Jong-Shenq Guo (Tamkang Univ.)
A Liouville type theorem of reaction diffusion system and its application to spreading problem · · · · · 12

28 Masahiko Shimojo (Tokyo Metro. Univ.)
Jong-Shenq Guo (Tamkang Univ.)
Yu-Shuo Chen (Tamkang Univ.)
Spreading problem and traveling wave of a singular predator-prey system · · · · · 10

29 Kousuke Kuto (Waseda Univ.)
Global bifurcation structure of segregated steady-states for a cross-diffusion limit in the Shigesada–Kawasaki–Teramoto model · · · · · 12

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

Hiroshi Matsuzawa (Kanagawa Univ.)
A free boundary problem of reaction-diffusion equation with a multi-stable type nonlinearity in high space dimensions

March 30th (Wed) Conference Room II

9:00–12:00

30 Takeshi Suguro (Tohoku Univ.) ♭
Well-posedness of the Cauchy problem of the parabolic-elliptic Keller–Segel system in uniformly local spaces · · · · · 12

31 Tatsuya Hosono (Tohoku Univ.) ♭
Finite time blow-up of solutions to an attraction–repulsion chemotaxis system in four dimensional case · · · · · 12

32 Yuya Tanaka (Tokyo Univ. of Sci.)
Tomomi Yokota (Tokyo Univ. of Sci.)
Blow-up in a degenerate parabolic-elliptic chemotaxis system with logistic source and nonlinear production · · · · · 12

33 Yutaka Kamimura ♭ (Tokyo Univ. of Marine Sci. and Tech.)
Soliton solutions of the Boussinesq system · · · · · 12

34 Masafumi Yoneda (Chiba Univ.) — Asymptotic stability of soliton for discrete nonlinear Schrödinger equation on one-dimensional lattice ····· 10

35 Masafumi Yoshino (Hiroshima Univ.) — Movable singular point of non autonomous Hamiltonian system of degree of freedom one ····· 12

36 Noriyoshi Fukaya (Tokyo Univ. of Sci.), Vladimir Georgiev (Pisa Univ.), Masahiro Ikeda (RIKEN/Keio Univ.) — On stability and instability of standing waves for 2d-nonlinear Schrödinger equations with point interaction ····· 12

37 Yuki Osada (Tokyo Metro. Univ.) — Existence of a minimizer for a nonlinear Schrödinger system with three wave interaction under non-symmetric potentials ····· 12

38 Masaru Hamano (Saitama Univ.), Masahiro Ikeda (RIKEN/Keio Univ.), Shuji Machihara (Saitama Univ.) — Blow-up solutions to nonlinear Schrödinger equation with an inverse power potential ····· 10

39 Takuya Sato (Tohoku Univ.) ♭ — Lower bound estimates of solutions to the dissipative nonlinear Schrödinger equation ····· 12

40 Sonae Hadama (Kyoto Univ.) — Well-posedness of the Hartree equation for infinitely many particles with the Riesz potential ····· 12

14:15–16:15

41 Shunya Hashimoto (Saitama Univ.), Isamu Dôku (Saitama Univ.*), Shuji Machihara (Saitama Univ.) — The local well-posedness of the stochastic nonlinear Schrödinger equations in H^2 ····· 10

42 Isao Kato (Kyoto Univ.) — Ill-posedness for the half wave Schrödinger equation ····· 10

43 Satoshi Masaki (Osaka Univ.), Jun-ichi Segata (Kyushu Univ.), Kota Uriya (Okayama Univ. of Sci.) — On classification of cubic nonlinear systems ····· 12

44 Satoshi Masaki (Osaka Univ.), Jun-ichi Segata (Kyushu Univ.), Kota Uriya (Okayama Univ. of Sci.) — On asymptotic behavior of solutions to a nonlinear Klein–Gordon system ····· 10

45 Shunsuke Kitamura (Tohoku Univ.) ♭, Hiroyuki Takamura (Tohoku Univ.), Kyouhei Wakasa (Kushiro Nat. Coll. of Tech.) — The lifespan estimates of classical solutions of one dimensional semilinear wave equations with characteristic weights ····· 12

46 Hiroyuki Takamura (Tohoku Univ.) ♭, Shunsuke Kitamura (Tohoku Univ.), Katsuaki Morisawa (Tohoku Univ.) — Semilinear wave equations of derivative type with spatial weights in one space dimension ····· 12

47 Hiroyuki Takamura (Tohoku Univ.) ♭, Takiko Sasaki (Musashino Univ./Tohoku Univ.), Katsuaki Morisawa (Tohoku Univ.) — The combined effect in one space dimension beyond the general theory for nonlinear wave equations ····· 12

16:30–17:30 Talk Invited by Functional Equations Section

Motohiro Sobajima (Tokyo Univ. of Sci.) — Weighted energy estimates for wave equations with space-dependent damping

March 31st (Thu) Conference Room II

9:00–12:00

48 Takahito Kashiwabara (Univ. of Tokyo)
Hiromichi Itou (Tokyo Univ. of Sci.)
Unique solvability of a crack problem with Signorini-type and Tresca friction conditions in a linearized elastodynamic body ····· 12

49 Ikki Fukuda (Shinshu Univ.)
Kenta Itasaka
Higher-order asymptotic profiles of the solutions to the viscous Fornberg–Whitham equation ····· 10

50 Souhei Sugizaki (Tokyo Tech)
Shinya Nishibata (Tokyo Tech)
Itsuko Hashimoto (Kanazawa Univ.)
Asymptotic stability of a radially symmetric stationary solution for the compressible Navier–Stokes equation with an inflow boundary condition ····· 12

51 Motofumi Aoki (Tohoku Univ.)
Tsukasa Iwabuchi (Tohoku Univ.)
On the energy conservation law for the full system of compressible Navier–Stokes equations ····· 12

52 Masashi Ohnawa
(Tokyo Univ. of Marine Sci. and Tech.)
Masahiro Suzuki (Nagoya Inst. of Tech.)
Asymptotic stability of air flow over mountains with wave breaking ····· 12

53 Kota Ikeda (Meiji Univ.)
Stability analysis of a uniform flow in a mathematical model of camphor boats ····· 12

54 Ken Furukawa (RIKEN)
Takahito Kashiwabara (Univ. of Tokyo)
Singular limit problems on the primitive equations and Navier–Stokes equations in anisotropic spaces ····· 10

55 Takeshi Gotoda (Tokyo Tech)
Energy conservation in 2D incompressible inviscid flows ····· 10

56 Hiroyuki Tsurumi (Kyoto Univ.)
Yasunori Maekawa (Kyoto Univ.)
Existence of the 2D stationary Navier–Stokes flow on the whole plane around a radial flow ····· 12

14:15–16:15

57 Hideo Kozono
(Waseda Univ. / Tohoku Univ.)
Yutaka Terasawa (Nagoya Univ.)
Yuta Wakasugi (Hiroshima Univ.)
Asymptotic behavior and Liouville-type theorems for axisymmetric stationary Navier–Stokes equations outside of an infinite cylinder with a periodic boundary condition ····· 10

58 Lorenzo Brandolese (Univ. Lyon 1)
Takahiro Okabe (Osaka Univ.)
Control of weak solutions of the Navier–Stokes equation by external forcing ····· 10

59 Keiichi Watanabe (Waseda Univ.)
Stability of stationary solutions to a free boundary problem of the Navier–Stokes equations ····· 12

60 Miho Murata (Shizuoka Univ.)
Yoshihiro Shibata (Waseda Univ.)
Global well posedness for a Q-tensor model of nematic liquid crystals ····· 10

61 Mikihiro Fujii (Kyushu Univ.)
Large time behavior of solutions to the 3D anisotropic Navier–Stokes equation ····· 12

62 Yoshihiro Shibata (Waseda Univ.)
Global solution of the 3D compressible Navier–Stokes equations with free surface in the maximal regularity class ····· 10

63 Yoshihiro Shibata (Waseda Univ.)
The L_p-L_q decay estimate for the multidimensional compressible flow with free surface in the exterior domain ····· 10

16:30–17:30 Talk Invited by Functional Equations Section

Yoshihiro Ueda (Kobe Univ.)
Mathematical analysis of the dissipative structure for the symmetric hyperbolic system with relaxation

Real Analysis

March 30th (Wed) Conference Room VIII

9:30–11:45

1 Yukino Tomizawa (Niigata Inst. of Tech.) — Geometric properties of complete geodesic space ····· 15

2 Shin-ya Matsushita (Akita Pref. Univ.) — On the Douglas–Rachford algorithm ····· 15

3 Sachiko Atsushiba (Tokyo Woman's Christian Univ.) — Convergence theorems for monotone nonexpansive mappings ····· 15

4 Koji Aoyama (Chiba Univ.) — A quasinonexpansive extension of a mapping with an attractive point ····· 15

5 Ryotaro Tanaka (Tokyo Univ. of Sci.) — Nonlinear classification of Banach spaces based on Birkhoff–James orthogonality ····· 15

6 Kenichi Mitani (Okayama Pref. Univ.), Kichi-Suke Saito (Niigata Univ.*) — Some recent results on skewness of Banach spaces ····· 15

7 Toshiharu Kawasaki (Tamagawa Univ.) — Notes on the extended indefinite integral ····· 15

14:30–16:00

8 Jun Kawabe (Shinshu Univ.) — A topology on the space of measurable functions on a nonadditive measure space ····· 15

9 Ryoji Fukuda (Oita Univ.), Aoi Honda (Kyushu Inst. of Tech.), Yoshiaki Okazaki (Fuzzy Logic Systems Inst.) — Completion of a monotone measure space and completeness of a measure algebra and L_0 space ····· 15

10 Satoshi Yamaguchi (Ibaraki Univ.), Eiichi Nakai (Ibaraki Univ.) — Generalized fractional integral operators on Campanato spaces and their bi-preduals ····· 15

11 Ryota Kawasumi — Pointwise multipliers on weak Orlicz–Morrey spaces ····· 15

12 Naoya Hatano (Chuo Univ.) — Weak-type boundedness of commutators with respect to singular integral operators on Orlicz–Morrey spaces ····· 15

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

Yasunori Kimura (Toho Univ.) — Resolvent operators on complete geodesic spaces

March 31st (Thu) Conference Room VIII

9:30–12:00

13 Shodai Kubota (Chiba Univ.), Ken Shirakawa (Chiba Univ.) — Optimal controls in 1D-time-discrete Warren–Kobayashi–Lobkovsky–Carter system ····· 15

14 Yutaro Chiyo (Tokyo Univ. of Sci.), Tomomi Yokota (Tokyo Univ. of Sci.) — A simplified quasilinear attraction-repulsion chemotaxis system: boundedness ····· 15

15 Yutaro Chiyo (Tokyo Univ. of Sci.) — A simplified quasilinear attraction-repulsion chemotaxis system: stabilization ····· 15

16 Chiharu Kosugi (Japan Women's Univ.), Toyohiko Aiki (Japan Women's Univ.) — Existence of strong solutions for the model representing motions of compressible elastic materials on the plane ····· 15

17 Kota Kumazaki (Nagasaki Univ.), Toyohiko Aiki (Japan Women's Univ.), Adrian Muntean (Karlstad Univ.) — A one-dimensional free boundary problem describing migration into rubber with a non-monotone boundary condition ····· 15

18 Takeshi Fukao (Kyoto Univ. of Edu.) — A quasi ill-posed problem on the boundary ····· 15

19 Noriaki Yamazaki (Kanagawa Univ.), Nobuyuki Kenmochi (Chiba Univ.*), Ken Shirakawa (Chiba Univ.) — Singular optimal control problems for doubly nonlinear evolution inclusions with quasi-variational structure ····· 15

14:15–15:15

20 Shunsuke Kurima (Tokyo Univ. of Sci.) — A nonlocal Penrose–Fife type phase field system with inertial term ··· 15

21 Hiroshi Watanabe (Oita Univ.) — Oleinik type estimates for entropy solutions to scalar parabolic-hyperbolic conservation laws and their applications ····· 15

22 Goro Akagi (Tohoku Univ.), Naoki Tanaka (Shizuoka Univ.) — Gradient flow theory for time-dependent energies and applications to nonlinear PDEs ····· 15

15:30–16:30 Talk Invited by Real Analysis Section

Shuji Yoshikawa (Oita Univ.) — Mathematical analysis for the problems related to dynamic deformation of CRFP

Functional Analysis

March 28th (Mon) Conference Room I

10:00–11:30

1 Shunji Sasaki (Kamiaoki Junior High School) — Homage of Riemann zeta function "Zeta one function" ····· 15

2 Michio Seto (Nat. Defense Acad. of Japan), Shuhei Kuwahara (Sapporoseishu High School) — On construction of strictly positive definite kernels ····· 10

3 Kazuki Kannaka (RIKEN) ♭ — Multiplicities of stable eigenvalues on compact anti-de Sitter 3-manifolds ····· 15

4 Toshimitsu Takaesu (Gunma Univ.) — On the first order expansion of a ground state energy of the ϕ^4 model with cutoffs ····· 15

5 Yoritaka Iwata (Kansai Univ.) — Generation of nolinear semigroup by the logarithm of operators ····· 15

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

Megumi Sano (Hiroshima Univ.) — Harmonic transplantation and its application to functional inequalities

March 29th (Tue) Conference Room I

10:00–12:00

6 Nobukazu Shimeno (Kwansei Gakuin Univ.)
Yamato Taniguchi (Kwansei Gakuin Univ.)
Mugiho Nakamura (Kwansei Gakuin Univ.)
Zonal spherical function on a real symplectic group · · · · · 15

7 Junko Inoue (Tottori Univ.)
Ali Baklouti (Univ. of Sfax)
The norm of the L^p-Fourier transform on compact extensions of locally compact groups · · · · · 15

8 Víctor Pérez Valdés (Univ. of Tokyo)
Construction of vector-valued differential symmetry breaking operators for the group $SO(4,1)$ · · · · · 15

9 Ryosuke Nakahama (Kyushu Univ.)
Computation of weighted Bergman norms on block diagonal matrices in bounded symmetric domains for $Sp(r,\mathbb{R})$ · · · · · 15

10 Hideyuki Ishi (Osaka City Univ.)
Kazuhide Oshiro (HOSEI Inc.)
Continuous wavelet transforms for vector-valued functions · · · · · 15

11 Atsumu Sasaki (Tokai Univ.)
A realization of the restriction of quasi-regular representations of the Heisenberg group · · · · · 15

12 Koichi Arashi (Nagoya Univ.)
Coherent state representation and multiplicity-free representation of a generalized Heisenberg group · · · · · 15

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

Takeshi Ikeda (Waseda Univ.)♭ K-theoretic Schubert calculus

March 30th (Wed) Conference Room I

10:00–11:30

13 Yuki Seo (Osaka Kyoiku Univ.)
Matrix trace inequalities related to the Tsallis relative entropies of real order · · · · · 15

14 Mitsuru Uchiyama (Shimane Univ.*/Ritsumeikan Univ.)
Operator means and matrix quadratic equations · · · · · 15

15 Masaru Nagisa (Chiba Univ./Ritsumeikan Univ.)
Yasuo Watatani (Kyushu Univ.)
Non-linear positive maps on C*-algebras · · · · · 15

16 Hiroyuki Osaka (Ritsumeikan Univ.)
Masaru Nagisa (Chiba Univ.*)
Raisei Tomita (Atsugi-Commercial Senior High School)
Stable rank for inclusions of Banach algebras · · · · · 15

17 Takuya Hosokawa (Ibaraki Univ.)
Weighted composition operators from the Lipschitz space to the space of bounded functions on a tree · · · · · 15

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

Shûichi Ohno Weighted composition operators and their differences

Statistics and Probability

March 28th (Mon) Conference Room Ⅲ

9:00–11:50

1 Takaaki Toyoshima (Tokyo Tech) — Fractional stochastic Navier–Stokes equation driven by space-time white noise · · · · · 15

2 Yu Ito (Kyoto Sangyo Univ.) — Backward representation of rough integral: an approach via fractional calculus · · · · · 15

3 Ryoji Takano (Osaka Univ.), Masaaki Fukasawa (Osaka Univ.) — A partial rough path space for rough volatility · · · · · 15

4 Takuto Ugai (Osaka Univ.), Masaaki Fukasawa (Osaka Univ.) — Limit distributions for the discretization error of stochastic Volterra equations · · · · · 15

5 Yushi Hamaguchi (Osaka Univ.) — On general solutions of linear stochastic Volterra integral equations · · 15

6 Yuji Shinozaki (Bank of Japan / Tokyo Tech), Syoiti Ninomiya (Tokyo Tech) — Application of high-order recombination to weak approximations of stochastic differential equations · · · · · 15

7 Isamu Dôku (Saitama Univ.) — On a solution for random equations with Lévy noise · · · · · 10

8 Shigeyoshi Ogawa (Ritsumeikan Univ.) — Noncausal integrals and mean value theorems · · · · · 10

9 Kensuke Ishitani (Tokyo Metro. Univ.) — On the construction of Brownian house-moving and its properties · · · · 15

10 Shun Yanashima (Tokyo Metro. Univ.), Kensuke Ishitani (Tokyo Metro. Univ.) — On the construction of Bessel house-moving and its properties · · · · · · · 15

14:15–15:05

11 Tetsuo Kurosawa (Tokyo Metro. Univ.), Shunsuke Nishijima (Tokyo Metro. Univ.), Kumiko Hattori (Tokyo Metro. Univ.) — Loop erased random walk on a random branched Koch curve · · · · · · · 15

12 Kohei Sasaya (Kyoto Univ.) — Some relation between spectral dimension and Ahlfors regular conformal dimension of resistance metrics · · · · · 15

13 Naotaka Kajino (Kyoto Univ.) — On singularity of energy measures for symmetric diffusions with full off-diagonal heat kernel estimates II: Some borderline examples · · · · · · 15

15:15–16:15 Award Lecture for the 2021 MSJ Analysis Prize

Makoto Katori (Chuo Univ.) — Multiple Schramm–Loewner evolution and Dyson's Brownian motion model

16:30–17:30 Talk Invited by Statistics and Probability Section

Takahiro Hasebe (Hokkaido Univ.) — Loewner chains, Markov processes and non-commutative stochastic processes

March 29th (Tue) Conference Room III

9:00–11:30

14 Katsunori Fujie (Hokkaido Univ.)
Takahiro Hasebe (Hokkaido Univ.)
The spectra of principal submatrices in unitarily invariant random matrices ····· 15

15 Makoto Maejima (Keio Univ.*)
Noriyoshi Sakuma (Nagoya City Univ.)
On free selfsimilar additive processes and free selfdecomposable distributions ····· 10

16 Kei Noba (Inst. of Stat. Math.)
Noriyoshi Sakuma (Nagoya City Univ.)
Yuki Ueda (Hokkaido Univ. of Edu.)
On Boolean selfdecomposability ····· 10

17 Ryoichi Suzuki (Keio Univ.)
Noriyoshi Sakuma (Nagoya City Univ.)
A modified Φ-Sobolev inequality for canonical Lévy processes and its applications ····· 10

18 Kei Noba (Inst. of Stat. Math.)
On the optimality of the refraction–reflection strategies for Lévy processes ····· 10

19 Toshihiro Uemura (Kansai Univ.)
Masayoshi Takeda (Kansai Univ.)
On symmetric stable-type processes with singular Lévy densities ····· 15

20 Nobuaki Naganuma (Kumamoto Univ.)
On generalization of the fourth moment theorem ····· 15

21 Masafumi Hayashi (Univ. of Ryukyus)
So Oshiro (Univ. of Ryukyus)
Masato Takei (Yokohama Nat. Univ.)
Rate of moment convergence in the central limit theorem for elephant random walks ····· 15

22 Hiroki Takahashi (Keio Univ.)
Shintaro Suzuki (Keio Univ.)
Almost-sure weighted equidistibution of cycles for the random Gauss map ····· 15

23 Johannes Jaerisch (Nagoya Univ.)
Hiroki Takahasi (Keio Univ.)
Multifractal analysis of homological growth rates for hyperbolic surfaces ····· 15

11:30–12:00 Research Section Assembly

March 30th (Wed) Conference Room III

9:50–11:40

24 Teruo Tanaka (Hiroshima City Univ.)
Markov decision processes with fractional rewards ····· 10

25 Toshiharu Fujita (Kyushu Inst. of Tech.)
Decision process model with feedforward loop system ····· 15

26 Shoko Chisaki (Osaka Inst. of Tech.)
Shinji Kuriki (Osaka Pref. Univ.*)
Ryoh Fuji-Hara (Univ. of Tsukuba*)
Nobuko Miyamoto (Tokyo Univ. of Sci.)
Optimality of spanning bipartite block designs ····· 10

27 Satoru Kadowaki (Matsue Coll. of Tech.)
Sanpei Kageyama (Hiroshima Univ.*)
Two existence results between an affine resolvable SRGD design and a difference scheme ····· 15

28 Masatake Hirao (Aichi Pref. Univ.)
On p-frame potential of the Beltrán and Etayo point processes on the sphere ····· 15

29 Hayato Takahashi (Random Data Lab.)
Posterior distributions weakly converge to Martin-Löf random parameters ····· 15

30 Kengo Fujisawa (Tokyo Univ. of Sci.), Kouji Tahata (Tokyo Univ. of Sci.) — Asymmetry plus association model for square contingency tables with ordinal categories 15

12:15–12:45 Presentation Ceremony for the 2021 MSJ Analysis Prize

14:25–15:25 Talk Invited by Statistics and Probability Section

Masayo Hirose (Kyushu Univ.) — Small area inference under area level model and its application

15:45–16:45 Talk Invited by Statistics and Probability Section

Takeshi Emura (Kurume Univ.) — Estimating the difference of survival distributions; a copula-based approach to dependent censoring

March 31st (Thu) Conference Room III

9:50–11:40

31 Kou Fujimori (Shinshu Univ.), Yuichi Goto (Waseda Univ.), Yan Liu (Waseda Univ.), Masanobu Taniguchi (Waseda Univ.) — Sparse principal component analysis for high-dimensional stationary time series 15

32 Yujie Xue (Waseda Univ.), Masanobu Taniguchi (Waseda Univ.) — Hellinger distance estimation for non-regular spectra 15

33 Xiaofei Xu (Waseda Univ.), Zhengze Li (Waseda Univ.), Masanobu Taniguchi (Waseda Univ.) — Comparison between the exact likelihood and Whittle likelihood for moving average processes 10

34 Yan Liu (Waseda Univ.) — On the model selection of symmetric α-stable processes 15

35 Yuichi Goto (Waseda Univ.), Kotone Suzuki (Waseda Univ.), Xiaofei Xu (Waseda Univ.), Masanobu Taniguchi (Waseda Univ.) — Tests for the existence of group effects and interactions for two-way models with dependent error 15

36 Jin Hatomoto (Tokyo Nat. Coll. of Tech.) — Poisson limit distributions for diffeomorphisms with weak hyperbolic product structure 12

37 Takao Namiki (Hokkaido Univ.), Satoru Tadokoro (Hokkaido Univ.), Shunsuke Kajikawa (Kyoto Univ.), Masao Matsuhashi (Kyoto Univ.), Akio Ikeda (Kyoto Univ.), Ichiro Tsuda (Chubu Univ./Chubu Univ.) — Evaluation of permutation entropy by time-series transition graph analysis and its application to epilepsy 10

14:20–16:25

38 Eri Kurita (Tokyo Univ. of Sci.), Takashi Seo (Tokyo Univ. of Sci.) — A sample measure of Mardia's multivariate kurtosis with three-step monotone missing data 15

39 Nobuhiro Taneichi (Hokkaido Univ. of Edu.), Yuri Sekiya (Hokkaido Univ. of Edu.), Jun Toyama (Inst. for Pract. Appl. of Math.) — On an approximation of the distribution of test statistics for conditional independence of 3-way contingency tables. 15

40 Takuma Bando (Univ. of Tokyo)
Tomonari Sei (Univ. of Tokyo)
Kazuyoshi Yata (Univ. of Tsukuba)
Consistency of the objective general index in high-dimensional settings 15

41 Yoshihiko Maesono (Chuo Univ.)
Spiridon Penev (Univ. of New South Wales)
Improved confidence intervals for expectiles in risk management 15

42 Hiroki Masuda (Kyushu Univ.)
Shoichi Eguchi (Osaka Inst. of Tech.)
On model selection of Lévy driven SDE models 15

43 Yuta Koike (Univ. of Tokyo)
Asymptotic mixed normality of realized covariance in high-dimensions 15

44 Yugo Nakayama (Kyoto Univ.)
Kazuyoshi Yata (Univ. of Tsukuba)
Makoto Aoshima (Univ. of Tsukuba)
Outlier detection based on high-dimensional principal component scores 15

Applied Mathematics

March 28th (Mon) Conference Room V

10:00–12:00

1 Xiao-Nan Lu (Univ. of Yamanashi)
Shota Kawaguchi (Nippon-Engineer Co. Ltd.)
Miwako Mishima (Gifu Univ.)
Almost external difference families via cyclotomy 15

2 Norifumi Ojiro (Toyota Tech. Inst.)
Hajime Matsui (Toyota Tech. Inst.)
Reversible error-correcting codes over rational integer residue rings ... 15

3 Tomohiro Kamiyoshi (Matsue Coll. of Tech.)
Makoto Nagura (Osaka Electro-Comm. Univ.)
Shinichi Otani (Kanto Gakuin Univ.)
On exponential extended Riordan array and unified Stirling numbers 10

4 Kazuhide Hirohata (Ibaraki Nat. Coll. of Tech.)
Bradley Elliott (Univ. of Kentucky)
Ronald J. Gould (Emory Univ.)
Degree sum conditions for the existence of vertex-disjoint chorded cycles in a graph 15

5 Kiyoshi Ando (Nat. Inst. of Informatics)
Properly 3-contractible edges in a minimally 3-connected graph 15

6 Shinya Fujita (Yokohama City Univ.)
Extremal problems on rainbow connectivity in edge-colored graphs ... 10

7 Naoki Matsumoto (Keio Univ.)
Chromatic number of triangle-free and broom-free graphs in terms of their order 15

14:15–16:00

8 Kazuki Matsubara (Saitama Univ.), Chie Nara (Meiji Univ.) — Continuous flattening of multi-layered pyramids with rigid radial edges · · · 15

9 Masashi Shinohara (Shiga Univ.), Sho Suda (Nat. Defense Acad. of Japan), Hiroshi Nozaki (Aichi Univ. of Edu.) — Uniqueness of optimal two-distance sets in $\mathbb{R}^8$ · · · 15

10 Sho Kubota (Yokohama Nat. Univ.), Etsuo Segawa (Yokohama Nat. Univ.) — Perfect state transfer in Grover walks between states associated to vertices of a graph · · · 15

11 Hiromichi Ohno (Shinshu Univ.), Akihiro Narimatsu (Yokohama Nat. Univ.), Md Sams Afif Nirjhor (Tokyo Tech), Kazuyuki Wada (Nat. Inst. of Tech., Hachinohe Coll.) — Unitary equivalence classes of quantum walks on cycles and split-step quantum walks · · · 15

12 Chusei Kiumi (Yokohama Nat. Univ.) — Eigenvalues of multi-state quantum walks · · · 10

13 Ken'ichi Yoshida (Saitama Univ.), Hiroki Kodama (Tohoku Univ.) — A mathematical model of network elastoplasticity · · · 15

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

Tetsuji Taniguchi (Hiroshima Inst. of Tech.) — A smallest eigenvalues of graphs and a generalization of line graphs

March 29th (Tue) Conference Room V

10:00–11:45

14 Norio Konno (Yokohama Nat. Univ.), Yuki Oshima (Yokohama Nat. Univ.) — IPS/Zeta Correspondence for the Domany–Kinzel model · · · 10

15 Norio Konno (Yokohama Nat. Univ.), Shunya Tamura (Yokohama Nat. Univ.) — Walk/Zeta Correspondence for quantum and correlated random walks · · · 10

16 Iwao Sato (Oyama Nat. Coll. of Tech.), Norio Konno (Yokohama Nat. Univ.), Takashi Komatsu (Math. Res. Inst. Calc for Industry/Hiroshima Univ.) — Vertex-face/Zeta correspondence · · · 15

17 Ayaka Ishikawa (Yokohama Nat. Univ.) — A family of quantum walks on a finite graph corresponding to the generalized weighted zeta function · · · 15

18 Hideaki Morita (Muroran Inst. of Tech.) — On an alternating graph zeta function · · · 15

19 Osamu Kada (Hosei Univ.) — Characteristic polynomials and zeta functions of equitably partitioned graphs · · · 15

20 Seiken Saito (Kogakuin Univ.) — The distribution of the error terms of the number of non-backtracking cycles for a regular graph · · · 15

11:50–12:10 Presentation Ceremony for the 2021 MSJ Prize for Excellent Young Applied Mathematicians

13:15–14:15

21 Tomoya Machide (Nat. Inst. of Informatics) — An application of systems of Boolean polynomial equations to list color problems ········ 10

22 Yumiko Ohno (Yokohama Nat. Univ.), Naoki Matsumoto (Keio Univ.) — The achromatic number and the pseudoachromatic number of caterpillars ········ 15

23 Kengo Enami (Seikei Univ.), Kenta Ozeki (Yokohama Nat. Univ.), Tomoki Yamaguchi — Proper colorings of plane quadrangulations without rainbow faces ········ 15

24 Atsuhiro Nakamoto (Yokohama Nat. Univ.), Kenta Ozeki (Yokohama Nat. Univ.) — Chromatic number of quadrangulations of the projective space ········ 15

March 30th (Wed) Conference Room V

9:00–10:45

25 Yoshiki Jikumaru (Kyushu Univ.), Yohei Yokosuka (Kagoshima Univ.) — On the differential geometric formulation of hanging membranes ········ 15

26 Tomoharu Suda (Keio Univ.) — Equivalence of topological dynamics without well-posedness ········ 15

27 Itsuki Watanabe (Waseda Univ.) — Deterministic limit of the stochastic model of nonlocal cross-diffusion ········ 15

28 Satoru Iwasaki (Osaka Univ.), Shuichi Jimbo (Hokkaido Univ.), Yoshihisa Morita (Ryukoku Univ.) — Standing unimodal waves of reaction-diffusion equations on an unbounded graph with two vertices ········ 15

29 Satoru Iwasaki (Osaka Univ.), Yutaro Yamaguchi (Osaka Univ.) — Number of stationary solutions of the Allen–Cahn equation in compact metric graphs ········ 15

30 Toshikazu Kuniya (Kobe Univ.), Tarik Mohammed Touaoula (Univ. Aboubekr Belkaïd) — Global dynamics of a class of bistable reaction-diffusion equations with time delay ········ 15

11:00–12:00 Talk Invited by Applied Mathematics Section

Yusuke Imoto (Kyoto Univ.) — Invitation to single-cell data science

14:15–17:00

31 Jumpei Nagase (Shibaura Inst. of Tech.), Aoi Honda (Kyushu Inst. of Tech.), Tetsuya Ishiwata (Shibaura Inst. of Tech.) — Representation of the Choquet integral by deep neural networks ········ 15

32 Kengo Nakai (Tokyo Univ. of Marine Sci. and Tech.), Miki U. Kobayashi (Rissho Univ.), Yoshitaka Saiki (Hitotsubashi Univ.), Natsuki Tsutsumi (Hitotsubashi Univ.) — Reconstruction of invariant sets of dynamical systems by machine learning models ········ 15

33 Qiwen Sun (Nagoya Univ./RIKEN)
Takemasa Miyoshi (RIKEN)
Serge Richard (Nagoya Univ./RIKEN)
Control simulation experiments of extreme events with the Lorenz-96 model · · · · · 15

34 Naoto Yamaoka (Osaka Pref. Univ.)
Asymptotic behavior of solutions of discrete replicator equations with the core-periphery model · · · · · 15

35 Kaname Matsue (Kyushu Univ./Kyushu Univ.)
Hiroyuki Ochiai (Kyushu Univ.)
Hisatoshi Kodani (Tohoku Univ.)
Takiko Sasaki (Musashino Univ./Tohoku Univ.)
Taisei Asai (Waseda Univ.)
Multiple-order asymptotic expansion of blow-up solutions for ODEs · · 15

36 Takaaki Nishida (Kyoto Univ.*)
An example of heat convection in the horizontal layer with non-uniform heat source · · · · · 15

37 Koya Sakakibara (Okayama Univ. of Sci.)
Masaharu Nagayama (Hokkaido Univ.)
Harunori Monobe (Okayama Univ.)
Numerical computation of an interface model for deformable self-propelled systems · · · · · 15

38 Kei Nishi (Kyoto Sangyo Univ.)
Yasumasa Nishiura (Hokkaido Univ.)
Transient behaviors of traveling multiple-pulse solutions in a three-component FitzHugh–Nagumo system · · · · · 15

39 Masaharu Nagayama (Hokkaido Univ.)
Yusuke Yasugahira (Hokkaido Univ.)
On a numerical bifurcation analysis of a particle reaction-diffusion model for a motion of two self-propelled disks · · · · · 15

March 31st (Thu) Conference Room V

9:00–10:45

40 Fuminori Sakaguchi (Univ. of Fukui)
A reverse application of 'ill-posedness' —an advantage of multiple precision in a integer-type algorithm for solving ODEs— · · · · · 15

41 Takuya Tsuchiya (Hachinohe Inst. of Tech.)
Ryosuke Urakawa
Gen Yoneda (Waseda Univ.)
Numerical integration of Einstein equations in gravitational collapse spacetime considering mass conservation · · · · · 15

42 Hirotada Honda (Toyo Univ.)
Revisiting the stability of GAN · · · · · 10

43 Shinya Uchiumi (Gakushuin Univ.)
A pressure error estimate for a projection Lagrange–Galerkin scheme of Guermond–Minev type for the Oseen problem · · · · · 15

44 Yoshitaka Watanabe (Kyushu Univ.)
Kaori Nagatou (Karlsruhe Inst. of Tech.)
Michael Plum (Karlsruhe Inst. of Tech.)
Takehiko Kinoshita (Saga Univ.)
Mitsuhiro T. Nakao (Waseda Univ.)
A computer-assisted proof of critical Reynolds number for Orr–Sommerfeld equation · · · · · 15

45 Makoto Okumura (Hokkaido Univ.)
Yasuaki Kobayashi (Hokkaido Univ.)
Masaharu Nagayama (Hokkaido Univ.)
Hironobu Fujiwara (RIKEN)
Yasugahira Yusuke (Hokkaido Univ.)
A mathematical study of the mechanism of hair follicle formation using a mathematical model for large deformation of basement membrane · · · · · 15

11:00–12:00 Talk Invited by Applied Mathematics Section

Keita Iida (Osaka Univ.) Single-cell gene expression data analysis

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Topology

March 28th (Mon) Conference Room VII

9:30–12:00

1 Shunsuke Kano (Tohoku Univ.)
Tsukasa Ishibashi (Kyoto Univ.)
A characterization of pseudo-Anosov mapping classes by tropical cluster transformations ····· 15

2 Ramón Barral Lijó (Ritsumeikan Univ.)
Jesús Antonio Álvarez López (Univ. of Santiago de Compostela)
Realization of manifolds as leaves of foliated spaces ····· 15

3 Hiroki Kodama (Tohoku Univ. / RIKEN)
Naohiko Kasuya (Hokkaido Univ.)
Yoshihiko Mitsumatsu (Chuo Univ.)
Atsuhide Mori (Osaka Dent. Univ.)
Torus fibrations from S^5 to S^3 found from Milnor fibrations of certain complex surface singularities ····· 15

4 Yoshihiko Mitsumatsu (Chuo Univ.)
Naohiko Kasuya (Hokkaido Univ.)
Hiroki Kodama (Tohoku Univ. / RIKEN)
Atsuhide Mori (Osaka Dent. Univ.)
Lefschetz fibration on Milnor fibers of cusp singularities and topological decomposition of K3 surfaces ····· 15

5 Yasushi Hirata (Kanagawa Univ.)
Yukinobu Yajima (Kanagawa Univ.*/Math Art Laboratory)
Undecidability for the extent of products of monotonically normal spaces ····· 10

6 Hirokazu Nishinobu (Nagano Nat. Coll. of Tech.)
Toshihiro Yamaguchi (Kochi Univ.)
An example of non-coformal classifying space with rational $H(2)$-structure ····· 10

7 Kaori Yamazaki (Takasaki City Univ. of Econ.)
Exchange economy from viewpoints of general topology ····· 15

8 Sachiko Saito (Hokkaido Univ. of Edu.)
Kosei Takashimizu (Seiryo Junior High School)
Newton non-degeneracy and strongly Newton non-degeneracy of mixed weighted homogeneous polynomials ····· 10

9 Yusuke Mizota (Kyushu Sangyo Univ.)
Shunsuke Ichiki (Tokyo Tech)
Naoki Hamada (KLab Inc.)
All unconstrained strongly convex problems are weakly simplicial ···· 15

14:15–15:05

10 Kazuhiro Ichihara (Nihon Univ.), In Dae Jong (Kinki Univ.) — Purely cosmetic surgeries on alternating Montesinos knots ····· 10

11 Masaki Ogawa (Saitama Univ.) — A characterization of a 3-manifold with a multibranched handlebody decompsition ····· 15

12 Teruaki Kitano (Soka Univ.), Yuta Nozaki (Hiroshima Univ.) — Algebraic integrality of Reidemeister torsion ····· 10

15:20–16:20 Talk Invited by Topology Section

Yuya Koda (Hiroshima Univ.) — Mapping class groups of Heegaard splittings

March 29th (Tue) Conference Room VII

9:30–11:50

13 Akihito Mori (Tohoku Univ.), Yuya Murakami (Tohoku Univ.) — The Witten–Reshetikhin–Turaev invariant for plumbed manifolds ···· 15

14 Yuta Taniguchi (Osaka Univ.) — A knot invariant obtained from an f-twisted Alexander matrix ····· 15

15 Akihiro Takano (Univ. of Tokyo) — The Long–Moody construction and twisted Alexander invariants ····· 15

16 Shuichi Harako (Univ. of Tokyo) — Computational results for the symplectic derivation Lie algebras ····· 15

17 Atsuhiko Mizusawa (Waseda Univ.), Yuka Kotorii (Hiroshima Univ./RIKEN) — A classification of 5-component link-homotopy classes through the clasper theory ····· 15

18 Takefumi Nosaka (Tokyo Tech) — Fox pairings of Poincaré duality groups ····· 10

19 Kentaro Yonemura (Kyushu Univ.) — Quandles over a one-sheet hyperboloid and longitudinal map ····· 15

20 Tsukasa Ishibashi (Kyoto Univ.), Wataru Yuasa (Kyoto Univ.) — Stated and marked skein algebras ····· 10

12:15–12:25 Presentation Ceremony for the 2021 MSJ Geometry Prize

13:15–14:15 Talk Invited by Topology Section

Takefumi Nosaka (Tokyo Tech) — Nilpotent knot-invariants and Johnson homomorphisms of the mapping class group

March 30th (Wed) Conference Room VII

9:30–12:00

21 Erika Kuno (Osaka Univ.) — Uniform hyperbolicity of nonseparating curve graphs of nonorientable surfaces ····· 10

22 Erika Kuno (Osaka Univ.), Mitsuaki Kimura (Kyoto Univ.) — Uniform hyperbolicity of fine curve graphs of nonorientable surfaces ····· 10

23 Hirotaka Akiyoshi (Osaka City Univ.) — Dirichlet domains for some one-cone torus bundles ····· 10

24 Naoki Kimura (Waseda Univ.) — Bi-Legendrian rack coloring numbers of Legendrian knots ····· 10

25 Jumpei Yasuda (Osaka Univ.) — A plat form presentation for surface-links ····· 15

26 Takahiro Oba (Osaka Univ.) — A four-dimensional mapping class relation · · · 15

27 Tatsumasa Suzuki (Tokyo Tech), Motoo Tange (Univ. of Tsukuba) — Pochette surgery on S^4 · · · 15

28 Sakumi Sugawara (Hokkaido Univ.) — Link diagrams of divides with cusps · · · 15

29 Yu Tajima (Hokkaido Univ.), Masahiko Yoshinaga (Hokkaido Univ.) — Magnitude homology of graphs and discrete Morse theory on Asao–Izumihara complexes · · · 15

14:15–15:15

30 Koji Yamazaki (Tokyo Tech) — Sheaf theoretic characterization of étale groupoids · · · 15

31 Shuhei Maruyama (Nagoya Univ.) — The Dixmier–Douady class, the action homomorphism, and cocycles on the group of symplectomorphisms · · · 15

32 Hitoshi Moriyoshi (Nagoya Univ.), Toshikazu Natsume (Nagoya Inst. of Tech.) — Quantum walk on the integer lattice and the Nöther index theorem · · · 15

15:30–16:30 Talk Invited by Topology Section

Takahiro Matsushita (Univ. of Ryukyus) — Invariant quasimorphisms and mixed commutator lengths

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Infinite Analysis

March 30th (Wed) Conference Room IX

10:00–12:00

1 Kohei Motegi (Tokyo Univ. of Marine Sci. and Tech.) — An extension of an identity for Grothendieck polynomials to skew version using Yang–Baxter algebra · · · 15

2 Yusuke Ohkubo (Daiichi Univ. of Pharm.), Ayumu Hoshino (Hiroshima Inst. of Tech.), Jun'ichi Shiraishi (Univ. of Tokyo) — Deformed Koornwinder operators and Macdonald polynomials of type C I · · · 15

3 Ayumu Hoshino (Hiroshima Inst. of Tech.), Yusuke Ohkubo (Daiichi Univ. of Pharm.), Jun'ichi Shiraishi (Univ. of Tokyo) — Deformed Koornwinder operators and Macdonald polynomials of type C II · · · 15

4 Toshiki Nakashima (Sophia Univ.), Manal I. Alshuqayr (Sophia Univ.) — Decomposition theorem for product of fundamental crystals in monomial realization of type C_n · · · 15

5 Yuki Kanakubo (Univ. of Tsukuba), Gleb Koshevoy (IITP RAS), Toshiki Nakashima (Sophia Univ.) — An algorithm for Berenstein–Kazhdan decoration functions for minuscule representations · · · 15

6 Travis Scrimshaw (Osaka City Univ.) — Quasi-solvable colored lattice models for types B and C · · · 15

14:15–14:50

7 Ryo Takenaka (Osaka City Univ.), Masato Okado (Osaka City Univ.) — Vertex operator algebras and fermionic character formulas of affine Lie algebras ····· 15

8 Hiromu Nakano (Tohoku Univ.) — On logarithmic modules of the $N = 1$ triplet vertex operator superalgebras ····· 15

15:00–16:00 Talk Invited by Infinite Analysis Special Session

Takeo Kojima (Yamagata Univ.) — Quadratic relations of the deformed W-algebra $\mathcal{W}_{q,t}(\mathfrak{g})$

March 31st (Thu) Conference Room IX

10:00–12:00

9 Kazuhiko Aomoto (Nagoya Univ.), Masahiko Ito (Univ. of Ryukyus) — Product of Hessians on critical points of level function F attached to hypergeometric integral associated with sphere arrangement ····· 15

10 Taichiro Takagi (Nat. Defense Acad. of Japan) — Lax equations using the loop elementary symmetric functions ····· 15

11 Shota Shigetomi (Kyushu Univ.), Kenji Kajiwara (Kyushu Univ.) — Explicit formula of isoperimetric deformation of discrete space curve with constant torsion angle in terms of elliptic theta function ····· 15

12 Tomoki Nakanishi (Nagoya Univ.) — Cluster scattering diagrams, dilogarithm elements, and pentagon relation ····· 15

13 Kodai Matsushita (Nagoya Univ.) — Consistency relation of rank 2 cluster scattering diagrams of affine type and pentagon relation ····· 15

14 Yuma Mizuno (Chiba Univ.) — Mutations of blowups of toric surfaces and q-Painlevé systems ····· 15

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

Tomohiro Sasamoto (Tokyo Tech) — Skew RSK, affine crystal and KPZ

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 ♭ marks denote presentations on whiteboard. The speakers with ⋆ 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 `program22mar@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 on campus except in designated smoking areas.
There is no parking area for participants. Please use public transportation.
Saitama University is an eduroam participant.

During MSJ Spring Meeting, two cafeterias on campus will be open from 11 am to 2 pm. The Lawson convenience store will be open from 7 am to 8 pm.

The following web page is available for emergency notifications immediately before and during the meeting, and can also be accessed from cell phones.
https://www.mathsoc.jp/i/

Directions

2022 MSJ ANNUAL MEETING

Dates : March 28th (Mon)–31st (Thu), 2022

Supported by : Saitama University

Venue : Saitama University
Shimo-Okubo 255, Sakura-ku, Saitama-shi
Saitama 338-8570 Japan

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Saitama University
Shimo-Okubo 255, Sakura-ku, Saitama-shi
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Web Site : https://www.mathsoc.jp/en/meeting/saitama22mar/

Conference Rooms

	Place	Research Sections
Conference Room I	1-205, 2F, 1st Lecture Hall	Functional Analysis
Conference Room II	1-206, 2F, 1st Lecture Hall	Functional Equations, Featured Invited Talks
Conference Room III	1-207, 2F, 1st Lecture Hall	Statistics and Probability, Featured Invited Talks
Conference Room IV	1-301, 3F, 1st Lecture Hall	Algebra, Featured Invited Talks
Conference Room V	1-304, 3F, 1st Lecture Hall	Applied Mathematics
Conference Room VI	1-401, 4F, 1st Lecture Hall	Geometry
Conference Room VII	1-402, 4F, 1st Lecture Hall	Topology
Conference Room VIII	1-403, 4F, 1st Lecture Hall	Complex Analysis, Real Analysis
Conference Room IX	3-101, 1F, 3rd Lecture Hall	Foundation of Mathematics and History of Mathematics, Infinite Analysis
Plenary Talks	1-301, 3F, 1st Lecture Hall	
Open Lectures for Citizens	1-301, 3F, 1st Lecture Hall	

Other Rooms

Membership Fee & Extended Abstracts	1-303, 3F, 1st Lecture Hall
Discussion Rooms	1-203, 1-302, 1-305, 1st Lecture Hall, 2-101, 2-102, 2-103, 2-201, 2-202, 2-203, 2nd Lecture Hall
Book Display and Sale	1-201, 1-202, 1-204, 2F, 1st Lecture Hall
Executive Committee, MSJ President	3-201, 2F, 3rd Lecture Hall