

2019 The Mathematical Society of Japan

ANNUAL MEETING

Dates: March 17th (Sun)–20th (Wed), 2019

Venue: Ookayama Campus, Tokyo Institute of Technology
2–11–1 Ookayama, Meguro-ku,
Tokyo 152-8551 Japan

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The Mathematical Society of Japan

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	I West Bldg. 2 W241	II West Bldg. 3 W351	III West Lec. 1 W521	IV West Lec. 1 W531	V West Lec. 1 W541	VI West Lec. 2 W611	VII West Lec. 2 W621	VIII West Lec. 2 W631	IX West Lec. 2 W641
17th (Sun)	Applied Mathematics 9:00–12:10 14:15–16:55	Complex Analysis 9:45–11:50 14:15–15:20	Functional Equations 9:15–12:00 14:15–16:15	Algebra 9:15–11:45	Geometry 9:40–11:40 14:20–16:25	Found. of Math. & Hist. of Math. 9:00–10:55 14:15–17:40	Topology 9:45–12:00 14:15–15:05	Statistics and Probability 9:30–12:00 14:15–15:05	Functional Analysis 10:30–12:00 14:15–16:00
	Featured Invited Talks					13:00–14:00			
	Invited Talk 17:00–18:00	Invited Talk 15:35–16:35	Invited Talk 16:30–17:30	Invited Talks 14:15–15:15 15:30–16:30	Invited Talk 16:40–17:40	Invited Talk 11:00–12:00	Invited Talk 15:20–16:20	Invited Talks 15:20–16:20 16:40–17:40	Invited Talk 16:15–17:15
18th (Mon)	Applied Mathematics 9:10–12:10	Complex Analysis 9:45–11:45	Functional Equations 9:15–12:00	Algebra 9:40–12:00 13:15–14:15	Geometry 9:50–11:40 Geometry & Topology Invited Talk 13:15–14:15	Found. of Math. & Hist. of Math. 9:00–11:50	Topology 9:30–11:50	Statistics and Probability 10:00–11:20	Functional Analysis 9:00–12:00 Invited Talk 13:15–14:15
	Invited Talk 13:15–14:15	Invited Talk 13:15–14:15	Invited Talk 13:15–14:15		Invited Talk 13:15–14:15	Invited Talk 13:15–14:15			
	MSJ Prizes & Seki Takakazu Prize Presentation (70th Anniversary Auditorium) (14:45–15:20)								
	Plenary Talks (70th Anniversary Auditorium) Spring Prize Winner (15:30–16:30) Shyuichi Izumiya (Hokkaido Univ.*) (16:45–17:45) Official Party (Tokyo Tech Front) (18:00–20:00)								
19th (Tue)	Applied Mathematics 9:20–11:45 14:20–16:30	Real Analysis 9:00–12:00 15:30–16:50	Functional Equations 9:00–12:00 14:15–16:15	Algebra 9:20–12:00 14:15–15:05	Geometry 9:40–11:40 14:20–16:25	Infinite Analysis 10:00–11:45	Topology 9:00–11:50 14:15–15:05	Statistics and Probability 9:45–12:00 14:15–15:00	Functional Analysis 9:00–12:00 14:15–15:45
	Featured Invited Talks					13:00–14:00			
	Invited Talk 16:40–17:40	Invited Talks 14:15–15:15 17:00–18:00	Invited Talk 16:30–17:30	Invited Talks 15:35–16:35 16:45–17:45	Invited Talk 16:40–17:40	Invited Talks 14:15–15:15 15:30–16:30	Invited Talk 15:20–16:20	Invited Talks 15:20–16:20 16:40–17:40	Invited Talk 16:00–17:00
20th (Wed)	Applied Mathematics 9:20–11:50	Real Analysis 9:00–11:50 14:15–15:05	Functional Equations 9:00–12:00 14:15–16:15	Algebra 9:10–12:00 14:15–15:40		Infinite Analysis 10:00–11:45		Statistics and Probability 9:30–12:00 14:15–16:00	
	Featured Invited Talks					13:00–14:00			
		Invited Talk 15:20–16:20	Invited Talk 16:30–17:30						

Plenary Talks

March 18th (Mon) 70th Anniversary Auditorium

Spring Prize Winner		(15:30–16:30)
Shyuichi Izumiya (Hokkaido Univ.*)	Geometric equivalence among smooth section germs —an homage to the Thom–Mather theory—	(16:45–17:45)

Featured Invited Talks

March 17th (Sun)

Conference Room I

Takashi Suzuki (Osaka Univ.)	Methods for Mathematical Oncology	(13:00–14:00)
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Conference Room IV

Hiroakira Ono (JAIST*)	Many faces of logical reasonings and their analysis	(13:00–14:00)
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March 19th (Tue)

Conference Room I

Guest Talk from the Japan Society for Industrial and Applied Mathematics		
Takahito Tanabe (NTT DATA Mathematical Systems Inc.)	Mathematical Science for Business	(13:00–14:00)

Conference Room IV

Aoi Honda (Kyushu Inst. of Tech.)	Non-linear integrals with respect to non-additive monotone measures: game theory, big data analysis, machine learning and so on	(13:00–14:00)
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Conference Room V

Koya Shimokawa (Saitama Univ.)	Topology and polymer science	(13:00–14:00)
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March 20th (Wed)

Conference Room IV

Kazuhiko Yamaki (Kyoto Univ./Kyoto Univ.)	The geometric Bogomolov conjecture and nonarchimedean geometry	(13:00–14:00)
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Conference Room V

Michio Jimbo (Rikkyo Univ.)	Quantum toroidal algebras and integrable systems	(13:00–14:00)
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Talks Invited by Research Sections and Special Session

March 17th (Sun)

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

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|-------------------------------|---|---------------|
| Taro Mimura (Hiroshima Univ.) | Arabic translation technique of Greek mathematical texts in the Abbasid period with a focus on Arabic version of Apollonius' Conics | (11:00–12:00) |
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Algebra (Conference Room IV)

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|--|---|---------------|
| Hironori Oya (Shibaura Inst. of Tech.) | Similarities in finite-dimensional representation theory of quantum affine algebras of several different Dynkin types | (14:15–15:15) |
| Laurent Demonet (Nagoya Univ.) | Combinatorics of mutations and torsion classes | (15:30–16:30) |

Geometry (Conference Room V)

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|------------------------------|------------------------------------|---------------|
| Yasushi Homma (Waseda Univ.) | Toward spin 3/2 geometry | (16:40–17:40) |
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Complex Analysis (Conference Room II)

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|-------------------------------|--|---------------|
| Ikkei Hotta (Yamaguchi Univ.) | Construction of quasiconformal extensions by means of Loewner's equation | (15:35–16:35) |
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Functional Equations (Conference Room III)

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|-----------------------------------|--|---------------|
| Shingo Kamimoto (Hiroshima Univ.) | Resurgent functions and convolution products | (16:30–17:30) |
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Functional Analysis (Conference Room IX)

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|----------------------------------|---|---------------|
| Hisashi Morioka (Doshisha Univ.) | Weyl-type lower bound for non-scattering energies of time-harmonic acoustic equations | (16:15–17:15) |
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Statistics and Probability (Conference Room VIII)

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|---|--|---------------|
| Award Lecture for the 2018 MSJ Analysis Prize | | |
| Norio Konno (Yokohama Nat. Univ.) | From interacting particle systems to quantum walks | (15:20–16:20) |
| Khanh Duy Trinh (Tohoku Univ.) | Gaussian beta ensembles in global regime | (16:40–17:40) |

Applied Mathematics (Conference Room I)

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| Xuefeng Liu (Niigata Univ.) | Progress about computer-assisted proof for the stationary solution of Navier–Stokes equation | (17:00–18:00) |
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Topology (Conference Room VII)

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|-------------------------------|--|---------------|
| Kiyonori Gomi (Shinshu Univ.) | Introduction to topological insulators for topologists | (15:20–16:20) |
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March 18th (Mon)

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

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|------------------------------|---|---------------|
| Koji Nakazawa (Nagoya Univ.) | Proving program correctness: Introduction to separation logic | (13:15–14:15) |
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Geometry and Topology (Conference Room V)

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|---|--|---------------|
| Award Lecture for the 2018 MSJ Geometry Prize | | |
| Yuji Odaka (Kyoto Univ.)* | Collapsing Kähler–Einstein metrics and moduli compactification | (13:15–14:15) |

Complex Analysis (Conference Room II)

Takato Uehara (Okayama Univ.) Dynamical systems on complex surfaces (13:15–14:15)

Functional Equations (Conference Room III)

Nicola Fusco (Univ. di Napoli) Asymptotic stability of the gradient flow of some nonlocal energies (13:15–14:15)

Functional Analysis (Conference Room IX)

Masatoshi Kitagawa
(Nara Women's Univ.) Invariant differential operators and uniformly bounded multiplicities (13:15–14:15)

Applied Mathematics (Conference Room I)

Shingo Iwami (Kyushu Univ.) Collaboration between mathematical sciences and virology (13:15–14:15)

March 19th (Tue)

Algebra (Conference Room IV)

Award Lecture for the 2019 MSJ Algebra Prize

Shunsuke Takagi (Univ. of Tokyo) Singularities of algebraic varieties and characteristic p methods (15:35–16:35)

Award Lecture for the 2019 MSJ Algebra Prize

Shinichi Kobayashi (Kyushu Univ.) Iwasawa theory —Past and present— (16:45–17:45)

Geometry (Conference Room V)

Hiroaki Ishida (Kagoshima Univ.) Complex manifolds with maximal torus actions and their foliations (16:40–17:40)

Functional Equations (Conference Room III)

Yohei Fujishima (Shizuoka Univ.) Solvability for a semilinear heat equation without the self-similar structure (16:30–17:30)

Real Analysis (Conference Room II)

Award Lecture for the 2018 MSJ Analysis Prize

Akihiko Miyachi
(Tokyo Woman's Christian Univ.) Estimates for multilinear pseudo-differential operators (14:15–15:15)

Takeshi Kawazoe (Keio Univ.) Singular integrals for Jacobi analysis (17:00–18:00)

Functional Analysis (Conference Room IX)

Yuki Arano (Kyoto Univ.)^b Actions of tensor categories (16:00–17:00)

Statistics and Probability (Conference Room VIII)

Aki Ishii (Tokyo Univ. of Sci.) High-dimensional statistical inference under the strongly spiked eigenvalue model (15:20–16:20)

Kiyotaka Iki (Nihon Univ.) Symmetry models based on an underlying bivariate distribution for square contingency tables (16:40–17:40)

Applied Mathematics (Conference Room I)

Michitaka Furuya (Kitasato Univ.)^b Comparison and characterization of graph classes generated by forbidden subgraph conditions (16:40–17:40)

Topology (Conference Room VII)

Takahiro Oba (Kyoto Univ.)	Fiber structures and the topology of contact and symplectic manifolds	(15:20–16:20)
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Infinite Analysis (Conference Room VI)

Hajime Nagoya (Kanazawa Univ.)	Conformal field theory and Painlevé equations	(14:15–15:15)
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Ryosuke Kodera (Kobe Univ.)	Affine Yangians and integrable systems	(15:30–16:30)
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March 20th (Wed)

Functional Equations (Conference Room III)

Award Lecture for the 2018 MSJ Analysis Prize

Shuichi Kawashima (Waseda Univ.)	Dissipative structure and stability analysis for symmetric hyperbolic systems	(16:30–17:30)
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Real Analysis (Conference Room II)

Yoshikazu Giga (Univ. of Tokyo)	On total variation flow type equations	(15:20–16:20)
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Foundation of Mathematics and History of Mathematics

March 17th (Sun) Conference Room VI

9:00–10:55

- 1 Shigeru Masuda The modeling and calculation of capillary action by Poisson 15
(Res. Workshop of Classical Fluid Dynamics)
- 2 Shigeru Masuda “The study of elliptic functions . . . ” by Legendre 15
(Res. Workshop of Classical Fluid Dynamics)
- 3 Shigeru Masuda The Legendre’s applications of elliptic functions and Poisson’s usages
(Res. Workshop of Classical Fluid Dynamics) owing to Legendre 15
- 4 Michiyo Nakane One aspect of formation of analytical mechanics found in Hilbert’s
lectures 15
- 5 Ken Saito * Diagrams of solid geometry in Euclid’s *Elements* 15
(Osaka Pref. Univ.*/Yokkaichi Univ.)
- 6 Tsukane Ogawa (Yokkaichi Univ.) On Seki Takakazu’s “bun jutsu” 15
- 7 Mitsuo Morimoto On numbering manuscripts of the *Taisei Sankei* 15
(Yokkaichi Univ./Sophia Univ.*)

11:00–12:00 Talk Invited by Section on Foundation and History of Mathematics

- Taro Mimura (Hiroshima Univ.) Arabic translation technique of Greek mathematical texts in the Abbasid period with a focus on Arabic version of Apollonius’ Conics

12:05–12:35 Mathematics History Team Meeting

14:15–17:40

- 8 Shotaro Tanaka * Answers to the questions at meeting of 2018 Okayama University 15
- 9 Makoto Tamura (Osaka Sangyo Univ.) On Pythagorean theorem in ancient Chinese mathematics 15
- 10 Toshio Harikae (Osaka Sangyo Univ.) On calculation of the area of circles 15
- 11 Kento Takagi (Tokyo Tech) Completeness of strictly monadic second-order logic 15
Ryo Kashima (Tokyo Tech)
- 12 Ken-etsu Fujita (Gunma Univ.) A formal system of reduction paths for parallel reduction 15
- 13 Takahiro Seki (Niigata Univ.) A method using metavaluation to prove cut elimination for modal logic
S4 15
- 14 Yoshihito Tanaka Duality for κ -additive complete atomic modal algebras 15
(Kyushu Sangyo Univ.)
- 15 Nobu-Yuki Suzuki (Shizuoka Univ.) Yet another remark on intermediate predicate logics having disjunction
property and lacking existence property 15
- 16 Taishi Kurahashi Uniform Lyndon interpolation property in propositional modal logics
(Nat. Inst. of Tech., Kisarazu Coll.) 15
- 17 Yuuya Okawa (Chiba Univ.) On the fixed point theorem for Sacchetti’s modal logics 15
Taishi Kurahashi
(Nat. Inst. of Tech., Kisarazu Coll.)

18	Sohei Iwata (Kobe Univ.)	Lyndon interpolation property for Sacchetti's logics	15
19	Tomoaki Kawano (Tokyo Tech)	About development of semantics of quantum logic	15
20	Makoto Kikuchi (Kobe Univ.) Ryota Hiyoshi (Kobe Univ.)	On quantum logic and orthomodular lattices with two intermediate layers	15

March 18th (Mon) Conference Room VI

9:00–11:50

21	Saburou Saitoh (Gunma Univ.* / Inst. of Reproducing Kernels)	* We can divide the numbers and analytic functions by zero with a natural sense	15
22	Keitaroh Uchida	Hyper exponential function	15
23	Toshimichi Usuba (Waseda Univ.)	GCH at strongly compact cardinals	15
24	Hiroshi Sakai (Kobe Univ.)	Higher stationary reflection and cardinal arithmetic	10
25	Teruyuki Yorioka (Shizuoka Univ.)	Maximal saturated linear orders in $(\omega^\omega, <^*)$ with properties of the real line	15
26	Masanori Itai (Tokai Univ.)	On finite approximation	15
27	Hiroataka Kikyo (Kobe Univ.)	On Hrushovski's "pseudoplanes" with rational coefficients	15
28	Misato Nakabayashi (Tohoku Univ.) Kazuyuki Tanaka (Tohoku Univ.) Wenjuan Li (Nanyang Tech. Univ.)	On one-variable modal μ -calculus	15
29	Toshio Suzuki (Tokyo Metro. Univ.)	Communication interruption between a game tree and its leaves	15
30	Kenshi Miyabe (Meiji Univ.)	Coherence of reducibilities with randomness notions	15
31	Kohtaro Tadaki (Chubu Univ.)	A refinement of quantum information theory by algorithmic randomness I	15

11:50–12:20 Research Section Assembly

13:15–14:15 Talk Invited by Section on Foundation and History of Mathematics

Koji Nakazawa (Nagoya Univ.)	Proving program correctness: Introduction to separation logic
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Algebra

March 17th (Sun) Conference Room IV

9:15–11:45

1	Shoma Sugimoto (Kyoto Univ.) ^b	Realizations of <i>ADE</i> type logarithmic principal <i>W</i> -algebras	10
2	Hiroaki Taniguchi (Kagawa Nat. Coll. of Tech.)	On some quadratic APN functions	15

3	Shuhei Kamioka (Kyoto Univ.)	A proof of the Aztec diamond theorem based on a difference equation	15
4	Toya Hiroshima (Osaka Univ.)	q -crystal structure on type B (D) signed unimodal factorizations of reduced (flattened) words	15
5	Hiraku Nakajima (Univ. of Tokyo)	Towards geometric Satake correspondence for Kac–Moody algebras ...	15
6	Kengo Miyamoto (Osaka Univ.)	On Heller lattices over the symmetric Kronecker algebra	15
7	Toshiya Yurikusa (Nagoya Univ.)	Wide subcategories are semistable	10
8	Sota Asai (Nagoya Univ.)*	The Grothendieck groups of mesh algebras	10
9	Yoshiaki Fukuma (Kochi Univ.)	A study on the dimension of global sections of adjoint bundles for polarized 5-folds	15

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

Hironori Oya (Shibaura Inst. of Tech.)	Similarities in finite-dimensional representation theory of quantum affine algebras of several different Dynkin types
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15:30–16:30 Talk Invited by Algebra Section

Laurent Demonet (Nagoya Univ.)	Combinatorics of mutations and torsion classes
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March 18th (Mon) Conference Room IV

9:40–12:00

10	Yuta Shimada (Univ. of Tsukuba)	Twisted forms of differential Lie algebras	10
11	Yuta Takahashi (Univ. of Tsukuba)	Geometric construction of quotients G/H in supersymmetry	10
12	Yutaka Yoshii (Ibaraki Univ.)	Some generating sets of the Jacobson radical of the hyperalgebra $\text{Dist}(\text{SL}_{2,r})$	10
13	Satoshi Yamanaka (Tsuyama Nat. Coll. of Tech.)	On weakly separable polynomials in q -skew polynomial rings	10
14	Hideyuki Koie (Tokyo Univ. of Sci.)	An application of a theorem of Sheila Brenner for Hochschild extension algebras of a truncated quiver algebra	15
15	<u>Masaki Matsuno</u> (Shizuoka Univ.) Ayako Itaba (Tokyo Univ. of Sci.)	AS-regularity of geometric algebras associated to elliptic curves	15
16	Kenta Ueyama (Hirotsaki Univ.)	On Knörrer periodicity in a noncommutative setting	15
17	Toshinori Kobayashi (Nagoya Univ.)	Characterizations of the endomorphism ring of the maximal ideal of a Gorenstein local ring	10
18	S. K. Masuti (Chennai Math. Inst.) <u>Kazuho Ozeki</u> (Yamaguchi Univ.) M. E. Rossi (Genova Univ.)	A filtration of the Sally module and the first normal Hilbert coefficient	15

13:15–14:15

- 19 Takayuki Hibi (Osaka Univ.) Extremal Betti numbers of edge ideals 10
 Kyouko Kimura (Shizuoka Univ.)
 Kazunori Matsuda
 (Kitami Inst. of Tech.)
- 20 Hidefumi Ohsugi Normality and Gorensteinness for Cayley sums of order and stable set
 (Kwansei Gakuin Univ.) polytopes 15
 Akiyoshi Tsuchiya (Osaka Univ.)
 Takayuki Hibi (Osaka Univ.)
- 21 Kohsuke Shibata (Okayama Univ.) Relation between the irreducible decomposition of strongly stable ideals
 Kohji Yanagawa (Kansai Univ.) and their local cohomology 10
- 22 Koji Chinen (Kindai Univ.) On the Riemann hypothesis for self-dual weight enumerators of genus
 Yuki Imamura (interprism Inc.) three 10

March 19th (Tue) Conference Room IV

9:20–12:00

- 23 Fumitsuna Maruyama On a certain bijection from $\mathbb{N}^m$ to $\mathbb{N}$ 10
 Yoshiyasu Yasutomi
 (Tokyo Nat. Coll. of Tech.)
- 24 Shigeru Iitaka (Gakushuin Univ.*) Super perfect numbers and super twin primes 10
 Hiroto Takahashi
 (Ikenoue Elementary School)
- 25 Wataru Takeda (Nagoya Univ.) Factorial function over number fields and quadratic forms 10
- 26 Yoshiki Shinsho (Oita Univ.) On the exponential Diophantine equation concerning Heron triples ... 10
- 27 Daisuke Shiomi (Yamagata Univ.) The divisibility of zeta polynomials of cyclotomic function fields 10
- 28 Kosuke Sakurada (Tohoku Univ.) Duality for finite/symmetric multiple zeta values of fixed weight, depth,
 and height 10
- 29 Masataka Ono (Kyushu Univ.) Functional equations for multiple zeta functions associated with 2-
 colored rooted trees 15
- 30 Koji Tasaka (Aichi Pref. Univ.) Hecke eigenform and double Eisenstein series 10
- 31 Ryojun Ito (Chiba Univ.) On special values of L -functions of weight 3 theta products 10
- 32 Kurt Fischer (Tokuyama Coll. of Tech.) Laplace summation formula, exact and approximate functional equa-
 tion, and a fast algorithm for Zeta functions 15
- 33 Ade Irma Suriajaya (RIKEN) Mean-values associated with Schemmel's function 15
 Jörn Steuding (Univ. of Würzburg)

14:15–15:05

- 34 Hideaki Morita (Muroran Inst. of Tech.) The Euler expression for the zeta function associated with a family of
 finite sets 10
- 35 Hideaki Morita (Muroran Inst. of Tech.) The Hashimoto expression for the zeta function associated with a family
 of finite sets 10

- 36 Hideaki Morita (Muroan Inst. of Tech.)^b The three expressions for the combinatorial zeta functions. 10
Iwao Sato (Oyama Nat. Coll. of Tech.)
- 37 Ayaka Ishikawa (Yokohama Nat. Univ.) Ihara expression of the zeta function of a finite digraph 10
Hideaki Morita (Muroan Inst. of Tech.)
Iwao Sato (Oyama Nat. Coll. of Tech.)

15:15–15:30 Presentation Ceremony for the 2019 MSJ Algebra Prize

15:35–16:35 Award Lecture for the 2019 MSJ Algebra Prize

Shunsuke Takagi (Univ. of Tokyo) Singularities of algebraic varieties and characteristic p methods

16:45–17:45 Award Lecture for the 2019 MSJ Algebra Prize

Shinichi Kobayashi (Kyushu Univ.) Iwasawa theory —Past and present—

March 20th (Wed) Conference Room IV

9:10–12:00

- 38 Motoo Ohaga (Hokkaido Univ.) Deductive reinterpretation of the Nakano–Nishijima–Gell-mann formula
Keiji Nakatsugawa (Hokkaido Univ.) 10
Toshiyuki Fujii (Asahikawa Med. Univ.)
Toyoki Matsuyama
(Nara Univ. of Edu.)
Satoshi Tanda (Hokkaido Univ.)
- 39 Akinari Hoshi (Niigata Univ.) Noether’s problem for $N \rtimes A_6$ 10
Ming-chang Kang (Nat. Taiwan Univ.)
Aiichi Yamasaki (Kyoto Univ.)
- 40 Akinari Hoshi (Niigata Univ.) Rationality problem for norm one tori 10
Aiichi Yamasaki (Kyoto Univ.)
- 41 Sumito Hasegawa (Niigata Univ.) Rationality problem for norm one tori, II 10
Akinari Hoshi (Niigata Univ.)
Aiichi Yamasaki (Kyoto Univ.)
- 42 Takanori Nagamine (Niigata Univ.) A note on retracts of polynomial rings in three variables 15
- 43 Takeshi Usa (Univ. of Hyogo) Betti constancy on the syzygies and the differentials of Koszul graph maps 15
- 44 Kotaro Kawatani (Osaka Univ.) Stability conditions on morphisms on a category 15
- 45 Yuta Kambe (Saitama Univ.) A decomposition of the Hilbert scheme given by Gröbner schemes 15
- 46 Ryo Okawa (Waseda Univ.) The FFRT property of two-dimensional normal graded rings and orbifold curves 15
Nobuo Hara
(Tokyo Univ. of Agri. and Tech.)
- 47 Momoko Yamamoto Two-graphs and the embedded topology of smooth quartics and its bitangent lines 15
(Tokyo Metro. Univ.)
Shinzo Bannai
(Ibaraki Nat. Coll. of Tech.)

48	<u>Momonari Kudo</u> (Kobe City Coll. of Tech./Kyushu Univ.) Shushi Harashita (Yokohama Nat. Univ.)	Superspecial trigonal curves of genus five	15
14:15–15:40			
49	Makoto Sakurai	Chiral homology and cobordism hypothesis of conformal blocks	15
50	Masaaki Murakami (Kagoshima Univ.)	On a certain type of algebraic surfaces with $c_1^2 = 9$ and $\chi = 5$	15
51	Akira Mori (Kobe Univ.)	Nef cone of a generalized Kummer 4-fold	10
52	Atsushi Kanazawa (Kyoto Univ.)	Degenerations and mirror symmetry of Calabi–Yau manifolds	15
53	Tomohiro Iwami (Kyushu Inst. of Tech.) *	Characterization of Mukai–Umemura 3-folds in terms of an extended extremal curve neighborhood	15

Geometry

March 17th (Sun) Conference Room V

9:40–11:40

1	<u>Honoka Kobayashi</u> (Tokyo Univ. of Sci.) Naoyuki Koike (Tokyo Univ. of Sci.)	Pseudo-hyperbolic Gauss maps of Lorentzian surfaces in anti-de Sitter space	15
2	Naoto Satoh (Hokkaido Univ.)	Local existence of statistical diffeomorphisms	10
3	<u>Shintaro Akamine</u> (Nagoya Univ.) Masaaki Umehara (Tokyo Tech) Kotaro Yamada (Tokyo Tech)	Improvement of the Bernstein-type theorem for maximal surfaces in spacetime using fluid mechanical duality	15
4	<u>Atsufumi Honda</u> (Yokohama Nat. Univ.) Kentaro Saji (Kobe Univ.) Keisuke Teramoto (Kobe Univ.)	Mixed type surfaces with bounded Gaussian curvature in three-dimensional Lorentzian manifolds	15
5	Tatsumasa Ura (Fuka Secondary School) <u>Shoichi Fujimori</u> (Okayama Univ.)	Constant negative Gaussian curvature tori and their singularities	15
6	<u>Vasile Sorin Sabau</u> (Tokai Univ.) Kazuyoshi Kiyohara (Okayama Univ.) Kazuhiro Shibuya (Hiroshima Univ.)	The geometry of a positively curved Zoll surface of revolution	15
7	Nobuhiro Innami (Niigata Univ.)	The asymptotic behavior of geodesic circles in a surface	15

14:20–16:25

- 8 Masayuki Igarashi (Tokyo Univ. of Sci.)^{*} On Hermite–Liouville structures on the elliptically deformed Hopf surfaces 10
- 9 Daisuke Tarama (Ritsumeikan Univ.) Stability analysis for the Mishchenko–Fomenko geodesic flow on a real semi-simple Lie group 15
- 10 Kentaro Hara (Tokyo Univ. of Sci.) Hermitian–Einstein metrics from instantons 10
Akifumi Sako (Tokyo Univ. of Sci.)
Hyun Seok Yang (Sogang Univ.)
- 11 Hokuto Konno (Univ. of Tokyo) Positive scalar curvature and 10/8-type inequalities on 4-manifolds with
Masaki Taniguchi (Univ. of Tokyo) periodic ends 15
- 12 Shinichiroh Matsuo (Nagoya Univ.)^b Asymptotic diameter growth of the instanton moduli spaces of the
four-sphere 15
- 13 Isami Koga (Meiji Univ.) Classification of equivariant harmonic maps from complex projective
Yasuyuki Nagatomo (Meiji Univ.) line into complex Grassmannian of two-planes 15
- 14 Isami Koga (Meiji Univ.) A construction of equivariant holomorphic embedding from complex
Masaro Takahashi projective space into the complex Grassmannian 10
(Kurume Nat. Coll. of Tech.)
- 15 Naoyuki Koike (Tokyo Univ. of Sci.) Regularized mean curvature flow in a Hilbert space and its application
to the gauge theory 15

16:40–17:40 Talk Invited by Geometry Section

- Yasushi Homma (Waseda Univ.) Toward spin $3/2$ geometry

March 18th (Mon) Conference Room V

9:50–11:40

- 16 Homare Tadano (Tokyo Univ. of Sci.) A new compactness theorem via m -Bakry–Émery Ricci curvature with
positive m 15
- 17 Homare Tadano (Tokyo Univ. of Sci.) Some compactness theorems for transverse Ricci solitons on complete
Sasaki manifolds 15
- 18 Daisuke Kazukawa (Tohoku Univ.) Concentration of l_p -product spaces 15
- 19 Naotaka Kajino (Kobe Univ.) The Laplacian on some round Sierpiński carpets and Weyl’s asymptotics
for its eigenvalues 15
- 20 Kota Hattori (Keio Univ.) On spectral convergence of vector bundles 15
- 21 Koichi Nagano (Univ. of Tsukuba) Volume pinching theorems for CAT(1) spaces 15

13:00–13:10 Presentation Ceremony for the 2018 MSJ Geometry Prize**13:15–14:15 Award Lecture for the 2018 MSJ Geometry Prize**

- Yuji Odaka (Kyoto Univ.)^{*} Collapsing Kähler–Einstein metrics and moduli compactification

March 19th (Tue) Conference Room V

9:40–11:40

- 22 Johannes Jaerisch (Shimane Univ.) Weighted cogrowth formula for free groups 15
Katsuhiko Matsuzaki (Waseda Univ.)
- 23 Takuro Yasui (Waseda Univ.) Area formula for cyclic polygon in classical geometry 15
Runa Umezawa (Waseda Univ.)
Yohei Komori (Waseda Univ.)
- 24 Shigehiro Sakata (Univ. of Miyazaki) Critical points of Riesz potential and characterization of regular triangles 15
- 25 Tomoshige Yukita (Waseda Univ.) Hyperbolic 4-manifolds constructed from a Napier cycle 10
- 26 Jumpei Gohara (Tokyo Univ. of Sci.) Quantized algebra 15
Yuji Hirota (Azabu Univ.)
Keisui Ino (Tokyo Univ. of Sci.)
Akifumi Sako (Tokyo Univ. of Sci.)
- 27 Henrique de Campos Affonso Bow varieties for the symplectic group 15
(Univ. of Tokyo)
- 28 Noriaki Ikeda (Ritsumeikan Univ.) On the relation of Lie algebroids to constrained Hamiltonian systems and their BV/BFV formulation 15

14:20–16:25

- 29 Ryohei Chihara (Univ. of Tokyo) G_2 -manifolds and the ADM formalism 15
- 30 Masaya Kawamura Parabolic flows in the almost Hermitian geometry 15
(Nat. Inst. of Tech., Kochi Coll.)
- 31 Yuto Yamamoto (Univ. of Tokyo) Periods of tropical K3 hypersurfaces 15
- 32 Hikaru Yamamoto (Tokyo Univ. of Sci.) An ε -regularity theorem for line bundle mean curvature flows 15
- 33 Akifumi Ochiai (Tokyo Metro. Univ.) A construction of special Lagrangian submanifolds by generalized perpendicular symmetries 15
- 34 Toru Kajigaya (Tokyo Denki Univ.) On Hamiltonian stable Lagrangian tori in complex hyperbolic spaces 15
- 35 Hiroshi Sawai For a structure theorem of Vaisman solvmanifolds 15
(Numazu Nat. Coll. of Tech.)

16:40–17:40 Talk Invited by Geometry Section

- Hiroaki Ishida (Kagoshima Univ.) Complex manifolds with maximal torus actions and their foliations

Complex Analysis

March 17th (Sun) Conference Room II

9:45–11:50

- 1 Saburoou Saitoh * Horn torus models for the Riemann sphere from the viewpoint of
(Gunma Univ.*/Inst. of Reproducing Kernels) division by zero (draft) 15
Wolfgang W. Däumler
- 2 Masaaki Ito The change of the Schiffer span of a certain symmetric horizontal slit
Fumio Maitani (Kyoto Inst. Tech.*) region under degeneration 15
Masakazu Shiba (Hiroshima Univ.*)
- 3 Katsuya Ishizaki (Open Univ. of Japan) On meromorphic solutions of some algebraic difference equations 15
- 4 Katsuhiko Matsuzaki (Waseda Univ.) Asymptotic BMO Teichmüller space 15
Huaying Wei (Jiangsu Normal Univ.)
- 5 Atsushi Kameyama (Gifu Univ.) Cantor Julia sets of rational maps 15
- 6 Mitsuhiro Shishikura (Kyoto Univ.) Oscillating wandering domains for a transcendental entire function of
David Martí Pete class $\mathcal{B}$ 15
(Polish Academy of Sci.)
- 7 Mitsuhiro Shishikura (Kyoto Univ.) Parametric derivative of quasiconformal mappings 15

14:15–15:20

- 8 Atsushi Hayashimoto * Generalized complex pseudo-ellipsoids and proper holomorphic map-
(Nagano Nat. Coll. of Tech.) pings 15
- 9 Cho-Ho Chu Bloch space of a bounded symmetric domain and composition operators
(Queen Mary, Univ. of London) 15
Hidetaka Hamada
(Kyushu Sangyo Univ.)
Tatsuhiro Honda (Senshu Univ.)
Gabriela Kohr (Babeş-Bolyai Univ.)
- 10 Hidetaka Hamada Approximation properties of univalent mappings on the unit ball in $\mathbb{C}^n$
(Kyushu Sangyo Univ.) 15
Mihai Iancu (Babeş-Bolyai Univ.)
Gabriela Kohr (Babeş-Bolyai Univ.)
Sebastian Schleißinger
(Univ. of Würzburg)
- 11 Hidetaka Hamada Approximation of univalent mappings by automorphisms and quasicon-
(Kyushu Sangyo Univ.) formal diffeomorphisms in $\mathbb{C}^n$ 15
Mihai Iancu (Babeş-Bolyai Univ.)
Gabriela Kohr (Babeş-Bolyai Univ.)

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

- Ikkei Hotta (Yamaguchi Univ.) Construction of quasiconformal extensions by means of Loewner's equation

March 18th (Mon) Conference Room II

9:45–11:45

- 12 Katsusuke Nabeshima (Tokushima Univ.) Bruce–Roberts Milnor numbers of generic linear functions 15
Shinichi Tajima (Niigata Univ.)
- 13 Katsusuke Nabeshima (Tokushima Univ.) On the computation of Chern–Schwartz–MacPherson classes 15
Shinichi Tajima (Niigata Univ.)
- 14 Soya Kirii (Yamagata Univ.) The condition the maximal ideal cycle and the fundamental cycle of normal complex hypersurface singularity of the form $z^n = y(x^a + y^b)$ 10
- 15 Masataka Tomari (Nihon Univ.)* On the finiteness of weight types of weighted homogeneous complex singularities for a positive geometric genus 15
- 16 Tomohiro Okuma (Yamagata Univ.) Weighted homogeneous surface singularities homeomorphic to Brieskorn complete intersections 15
- 17 Atsushi Yamamori (Kogakuin Univ.) Two variations of Boas–Fu–Straube’s deflation identity 15
- 18 Takeo Ohsawa (Nagoya Univ.)^b Analyticity criterion for functions by the existence of a complete Kähler metric on the complement of the graph 15

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

- Takato Uehara (Okayama Univ.) Dynamical systems on complex surfaces

Functional Equations

March 17th (Sun) Conference Room III

9:15–12:00

- 1 Hideaki Izumi (Chiba Inst. of Tech.) How to solve iterated functional equations by using dimensioned numbers 10
- 2 Akihito Ebisu (Chiba Inst. of Tech.) Invariants of difference equations and transformation formulae for hypergeometric functions 10
- 3 Yoshiaki Goto (Otaru Univ. of Commerce) Finite irreducible monodromy group for Lauricella’s F_C 10
- 4 Kanam Park (Kobe Univ.) A certain generalization of q -hypergeometric functions and their related monodromy preserving deformation 10
- 5 Nobuki Takayama (Kobe Univ.) An algorithm for computing intersection numbers of twisted cohomology groups 10
Saiei-Jaeyeong Matsubara-Heo (Kobe Univ.)
- 6 Takashi Aoki (Kindai Univ.) Voros coefficients at the origin of the generalized hypergeometric differential equation with a large parameter 10
Shofu Uchida (Kindai Univ.)

15 Functional Equations

- 7 Waichiro Matsumoto (Ryukoku Univ.)* Admissible data spaces of the Cauchy problem for linear hyperbolic systems 10
- 8 Masakazu Onitsuka (Okayama Univ. of Sci.) Hyers–Ulam stability of second-order linear difference equations with constant coefficients 10
- 9 Tetsutaro Shibata (Hiroshima Univ.) Global solution curves of ordinary differential equations with nonlinear diffusion 10
- 10 Naoki Hamamoto (Osaka City Univ.) Rellich–Leray inequality for axisymmetric and solenoidal vector fields 10
- 11 Takeshi Suguro (Tohoku Univ.)^b The dual of a logarithmic Sobolev inequality and the uncertainty principle 10
Hideo Kubo (Hokkaido Univ.)
Takayoshi Ogawa (Tohoku Univ.)
- 12 Masato Hashizume (Ehime Univ.) Effect of compact term on maximization problem related to the Trudinger–Moser inequality 10
- 13 Hiroshi Ando (Ibaraki Univ.)* Weighted Hardy’s Inequalities with compact perturbations 10
Toshio Horiuchi (Ibaraki Univ.)

14:15–16:15

- 14 Kazuyuki Yagasaki (Kyoto Univ.) Bifurcations of radially symmetric solutions in a coupled elliptic system with critical exponents 10
Tomasz Stachowiak
- 15 Shingo Takeuchi Exact solutions and asymmetry for a nonlocal boundary value problem 10
(Shibaura Inst. of Tech.)
- 16 Kenichiro Umezu (Ibaraki Univ.) Exact multiplicity of positive solutions for an indefinite concave Robin bvp 10
Uriel Kaufmann (Univ. Nacional de Córdoba)
Humberto Ramos Quoirin (Univ. de Santiago de Chile)
- 17 Toshiaki Yachimura (Tohoku Univ.) Domain perturbation and singular perturbation of the coefficients for a two-phase eigenvalue problem 10
- 18 Lorenzo Cavallina (Tohoku Univ.) On a two-phase Serrin-type overdetermined problem and its numerical computation 10
Toshiaki Yachimura (Tohoku Univ.)
- 19 Yuika Kajihara (Kyoto Univ.) Variational proof of the existence of brake orbits in the planar 2-center problem 10
Mitsuru Shibayama (Kyoto Univ.)
- 20 Jun Okamoto (Univ. of Tokyo) Random discretization of O’Hara knot energy 10
- 21 Simon Blatt (Salzburg Univ.) A Möbius invariant discretization Γ -converging to the Möbius energy 10
Aya Ishizeki (Chiba Univ.)
Takeyuki Nagasawa (Saitama Univ.)

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

- Shingo Kamimoto (Hiroshima Univ.) Resurgent functions and convolution products

March 18th (Mon) Conference Room III

9:15–12:00

- 22 Masato Kimura (Kanazawa Univ.) Precise characterisation of the minimiser of interaction energies 10
Patrick van Meurs (Kanazawa Univ.)

23	Kengo Terai (Waseda Univ.)	Uniqueness structure for weakly coupled systems of ergodic problems for Hamilton–Jacobi equations	10
24	Shota Tateyama (Tohoku Univ.)	On L^p -viscosity solutions of parabolic bilateral obstacle problems with unbounded ingredients	10
25	Koichi Taniguchi (Chuo Univ.) Vladimir Georgiev (Univ. Pisa)	Gradient estimates for heat equation in an exterior domain	10
26	Shigeru Sakaguchi (Tohoku Univ.)	Some characterizations of parallel hyperplanes by a stationary isothermic surface in multi-layered heat conductors	10
27	Yuki Kaneko (Waseda Univ.) Hiroshi Matsuzawa (Numazu Nat. Coll. of Tech.) Yoshio Yamada (Waseda Univ.)	Asymptotic profiles of solutions and propagating terrace for a free boundary problem of nonlinear diffusion equation with positive bistable nonlinearity	10
28	Junyong Eom (Tohoku Univ.) Kazuhiro Ishige (Univ. of Tokyo)	Large time behavior of ODE type solutions to nonlinear diffusion equations	10
29	Kotaro Hisa (Tohoku Univ.) Kazuhiro Ishige (Univ. of Tokyo)	Solvability of the heat equation with a nonlinear boundary condition	10
30	Masamitsu Suzuki (Univ. of Tokyo) Yasuhito Miyamoto (Univ. of Tokyo)	Weakly coupled reaction-diffusion systems with rapidly growing nonlinearities and singular initial data	10
31	Ryuichi Sato (Tohoku Univ.)	Local and global existence of slow diffusion equation with a nonlinear source	10
32	Kenta Nakamura (Kyushu Univ.) Masashi Misawa (Kumamoto Univ.)	On the properties for doubly nonlinear equations of p -Sobolev flow type	10
33	Longjie Zhang (Univ. of Tokyo)	Mean curvature flow with driving force	10
34	Tomoro Asai (Univ. of Tokyo)*	Existence and stability of the self-similar solutions for the surface diffusion flow equations with nonlinear boundary conditions	10

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

Nicola Fusco (Univ. di Napoli)	Asymptotic stability of the gradient flow of some nonlocal energies
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March 19th (Tue) Conference Room III

9:00–12:00

35	Shota Sakamoto (Tohoku Univ.)	Kinetic formulation of mutation process in bacteria and its probability measure solutions	10
36	Yuya Tokuta (Free Univ.)	Euglena bioconvection	10
37	Ryo Ito (Meiji Univ.)	A minimizing problem associated with the spreading speed for spatially periodic Fisher-KPP equation	10
38	Ryunosuke Mori (Meiji Univ.)	A variational problem for the spreading speed of the solutions of KPP equations	10
39	Kentaro Nagahara (Tokyo Tech) Eiji Yanagida (Tokyo Tech)	Maximization of the total population in a reaction-diffusion model with logistic growth	10

40	<u>Masahiko Shimojo</u> (Okayama Univ. of Sci.) Eiji Yanagida (Tokyo Tech) Peter Takáč (Univ. Rostock)	Convergence to traveling pulse of logarithmic diffusion equation	10
41	<u>Masahiko Shimojyou</u> (Okayama Univ. of Sci.) Amy Poh AiLing (Okayama Univ.)	Center problem of reaction diffusion systems	10
42	<u>Md Rabiul Haque</u> (Tohoku Univ.) ^b Takayoshi Ogawa (Tohoku Univ.) Ryuichi Sato (Tohoku Univ.)	Existence of weak solutions to a convection-diffusion equation in a uniformly local Lebesgue space	10
43	Tobias Black (Paderborn Univ.) Johannes Lankeit (Paderborn Univ.) <u>Masaaki Mizukami</u> (Tokyo Univ. of Sci.)	Asymptotic behavior of solutions to a Keller–Segel system with signal-dependent sensitivity	10
44	<u>Teruto Nishino</u> (Tokyo Univ. of Sci.) Tomomi Yokota (Tokyo Univ. of Sci.)	Effect of nonlinear diffusion on a lower bound for the blow-up time for solutions of a fully parabolic chemotaxis system	10
45	<u>Masaki Kurokiba</u> (Muroran Inst. of Tech.) ^b Takayoshi Ogawa (Tohoku Univ.)	Finite time blow up of weak solutions to the degenerate drift-diffusion system of fast diffusion type	10
46	Koichi Komada (Tohoku Univ.)	Final state problem for partial differential equations with nonlocal dispersive term	10
47	<u>Masaru Hamano</u> (Saitama Univ.) Masahiro Ikeda (RIKEN/Keio Univ.)	Time global behavior of solutions to NLS with a potential	10
48	Tomoyuki Tanaka (Nagoya Univ.)	Local well-posedness for fourth order Benjamin–Ono type equations on the torus	10
14:15–16:15			
49	<u>Mamoru Okamoto</u> (Shinshu Univ.) Shuji Machihara (Saitama Univ.)	Ill-posedness of the Cauchy problem for the Dirac–Klein–Gordon system in 1d	10
50	<u>Satoshi Masaki</u> (Osaka Univ.) Jun-ichi Segata (Tohoku Univ.) Kota Uriya (Okayama Univ. of Sci.)	Asymptotic behavior of complex valued solutions to Klein–Gordon equation with a critical nonlinearity	10
51	Masahiro Ikeda (RIKEN/Keio Univ.) <u>Hayato Miyazaki</u> (Tsuyama Nat. Coll. of Tech.)	Very strong instability for standing wave solutions to the system of the quadratic Klein–Gordon equations	10
52	Masahiro Ikeda (RIKEN/Keio Univ.) <u>Motohiro Sobajima</u> (Tokyo Univ. of Sci.) Kyouhei Wakasa (Tokyo Univ. of Sci.)	On blowup solutions of semilinear wave equations and their weakly coupled systems	10
53	Sojiro Murai (Tokyo Metro. Coll. of Ind. Tech.)	Strichartz estimates for magnetic Klein–Gordon equations in exterior domain and its application	10
54	Kenji Nishihara (Waseda Univ.) [*] Motohiro Sobajima (Tokyo Univ. of Sci.) <u>Yuta Wakasugi</u> (Ehime Univ.)	Critical exponent for the semilinear wave equations with a damping increasing in the far field	10

- 55 Tatsuya Matsui (Tohoku Univ.)^b Singular limit of the magnetohydrodynamic system of damped wave
 Ryosuke Nakasato (Tohoku Univ.) type to the classical magnetohydrodynamic system 10
 Takayoshi Ogawa (Tohoku Univ.)
- 56 Hideo Kubo (Hokkaido Univ.)^b On the critical exponent for nonlinear wave equations with non-effective
 Vladimir Georgiev (Pisa Univ.) damping 10
 Kyouhei Wakasa (Tokyo Univ. of Sci.)

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

- Yohei Fujishima (Shizuoka Univ.) Solvability for a semilinear heat equation without the self-similar structure

March 20th (Wed) Conference Room III

9:00–12:00

- 57 Takuya Sato (Tohoku Univ.)^b Analytic smoothing effect for system of nonlinear Schrödinger equations
 Takayoshi Ogawa (Tohoku Univ.) with general mass resonance 10
- 58 Masayuki Hayashi (Waseda Univ.) Variational approach to nonlinear Schrödinger equations of derivative
 type I: Global existence 10
- 59 Masayuki Hayashi (Waseda Univ.) Variational approach to nonlinear Schrödinger equations of derivative
 type II: Orbital stability 10
- 60 Hiroyuki Hirayama (Univ. of Miyazaki) Well-posedness for a system of quadratic derivative nonlinear Schrödinger
 Shinya Kinoshita (Univ. Bielefeld) equations with radial initial data 10
 Mamoru Okamoto (Shinshu Univ.)
- 61 Gaku Hoshino (Osaka Univ.) Scattering for solutions of a dissipative nonlinear Schrödinger equation
 10
- 62 Rowan Killip (UCLA) Analysis of mass-subcritical NLS in critical negative order Sobolev space
Satoshi Masaki (Osaka Univ.) 10
 Jason Murphy (Missouri S&T)
 Monica Visan (UCLA)
- 63 Jan Brezina (Kyushu Univ.) Nonuniqueness of delta shocks in the model of Chaplygin gas 10
 Ondřej Kreml (IMCAS)
 Václav Mácha (IMCAS)
- 64 Kai Koike (Keio Univ./RIKEN) Asymptotic behavior of a point mass moving in a 1D viscous compress-
 ible fluid 10
- 65 Kazuyuki Tsuda (Osaka Univ.) Global existence and time decay estimate of solutions to the compress-
 Takayuki Kobayashi (Osaka Univ.) ible two phase flow system under critical condition 10
- 66 Keiichi Watanabe (Waseda Univ.) Global solvability of compressible-incompressible two-phase flows with
 phase transitions and surface tensions in bounded domains 10
- 67 Yutaka Terasawa (Nagoya Univ.) Existence of weak solutions for a diffuse interface model for two-phase
 Helmut Abels (Univ. of Regensburg) flows of incompressible fluids with different densities and nonlocal free
 energies 10
- 68 Yoshihiro Shibata (Waseda Univ.) 2 phase problem for the Navier–Stokes equations in the whole space
 10
- 69 Yoshihiro Shibata (Waseda Univ.) On the decay properties of Stokes semigroup associated with two phase
 problem with surface tension 10

- 70 Tetu Makino (Yamaguchi Univ.*) * Spectral analysis of linearized non-radial oscillations of gaseous stars
Juhi Jang 10
(Univ. Southern California/KIAS)

14:15–16:15

- 71 Ryo Kanamaru (Waseda Univ.) Improvement of the extension theorem of strong solutions to Navier–Stokes equations by Vishik type spaces 10
- 72 Itsuko Hashimoto Asymptotic stability of radially symmetric stationary solutions for the
(Kansai Univ./Osaka City Univ.) multi-dimensional Burgers equation 10
- 73 Huanyuan Li (Univ. of Tokyo) On local strong solutions to the Cauchy problem of two-dimensional nonhomogeneous incompressible Navier–Stokes–Korteweg equations ··· 10
- 74 Teppei Kobayasi (Meiji Univ.) A steady flow of an incompressible viscous fluid through an aperture in a 3-D domain 10
- 75 Hideo Kozono Asymptotic properties of steady solutions to the 2D Navier–Stokes
(Waseda Univ./Tohoku Univ.) equations with finite generalized Dirichlet integral 10
Yutaka Terasawa (Nagoya Univ.)
Yuta Wakasugi (Ehime Univ.)
- 76 Yasunori Maekawa (Kyoto Univ.) On local energy decay estimate and L^q – L^r estimates of the Oseen semigroup in a two-dimensional exterior domain 10
- 77 Paolo Maremonti (Univ. Campania) Global existence of solutions to 2-D Navier–Stokes flow with non-
Senjo Shimizu (Kyoto Univ.) decaying initial data in half-plane 10
- 78 Jan Prüss (Univ. Halle) On stability of a Navier–Stokes–Ohm problem from plasma physics ··· 10
Senjo Shimizu (Kyoto Univ.)

16:30–17:30 Award Lecture for the 2018 MSJ Analysis Prize

- Suichi Kawashima (Waseda Univ.) Dissipative structure and stability analysis for symmetric hyperbolic systems

Real Analysis

March 19th (Tue) Conference Room II

9:00–12:00

- 1 Yōhei Yamasaki ^b A C^0 homeomorphism with infinite “volume” 10
- 2 Toshiharu Kawasaki Indefinite integral and primitive function 10
(Nihon Univ./Tamagawa Univ.)
- 3 Ryoichi Kunisada (Waseda Univ.) L^p spaces over finitely additive measures 10
- 4 Toshiaki Murofushi (Tokyo Tech) Relationships between properties of non-additive measures and proper-
Naoki Enomoto (Tokyo Tech) ties of supremum increments: null-continuity and property (S) 10

5	<u>Ryoji Fukuda</u> (Oita Univ.) Aoi Honda (Kyushu Inst. of Tech.) Yoshiaki Okazaki (Fuzzy Logic Systems Inst.)	Non-linear integral for an expansion of non-additive measure	10
6	Hiroyasu Mizuguchi (Chiba Inst. of Tech.)	On the James constant in Radon planes	10
7	Fumiaki Kohsaka (Tokai Univ.)	Approximation of minimizers of convex functions in complete CAT(1) spaces	10
8	Shin-ya Matsushita (Akita Pref. Univ.)	On the convergence rate of operator splitting methods	10
9	Koji Aoyama (Chiba Univ.)	Strong convergence theorems for the best approximation problem	10
10	Sachiko Atsushiba (Univ. of Yamanashi)	Weak and strong convergence theorems for generalized hybrid-type sequences and some nonlinear mappings	10
11	<u>Ryotaro Tanaka</u> (Tokyo Univ. of Sci.) Naoto Komuro (Hokkaido Univ. of Edu.) Kichi-Suke Saito (Niigata Univ.*)	Symmetric points for Birkhoff orthogonality I	10
12	<u>Ryotaro Tanaka</u> (Tokyo Univ. of Sci.) ^b Naoto Komuro (Hokkaido Univ. of Edu.) Kichi-Suke Saito (Niigata Univ.*)	Symmetric points for Birkhoff orthogonality II	10
13	Yukino Tomizawa (Niigata Inst. of Tech.)	Properties given by convex combinations in some metric spaces	10
14	<u>Ryutaro Arai</u> (Ibaraki Univ.) Eiichi Nakai (Ibaraki Univ.)	An extension of the characterization of CMO and its application to compact commutators on Morrey spaces	10
15	<u>Minglei Shi</u> (Ibaraki Univ.) Ryutaro Arai (Ibaraki Univ.) Eiichi Nakai (Ibaraki Univ.)	Generalized fractional maximal operators on Orlicz–Morrey spaces . . .	10
16	<u>Ryota Kawasumi</u> Eiichi Nakai (Ibaraki Univ.)	Pointwise multipliers on weak Morrey spaces	10

14:15–15:15 Award Lecture for the 2018 MSJ Analysis Prize

Akihiko Miyachi (Tokyo Woman's Christian Univ.)	Estimates for multilinear pseudo-differential operators
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15:30–16:50

17	Yoshihiro Sawano (Tokyo Metro. Univ.) ^b	A relation between the Kantrovitch operator and the Hardy–Littlewood maximal operator	10
18	Yoshihiro Sawano (Tokyo Metro. Univ.) ^b	A non-dense subspace in $\mathcal{M}_q^p$ with $1 \leq q < p < \infty$	10
19	Yoshihiro Sawano (Tokyo Metro. Univ.) ^b	Elliptic differential operators with non-smooth coefficients in uniformly local L^2 spaces	10
20	Toru Nogayama (Tokyo Metro. Univ.)	Boundedness of the commutators of fractional integral operators on mixed Morrey spaces	10
21	Takeshi Iida (Fukushima Nat. Coll. of Tech.)	Note on the integral operators in weighted Morrey spaces	10

14:15–15:05

- 39 Akio Ito Fix-Caginalp phase field model with quasi-variational structure on the boundary condition 10
- 40 Noriaki Yamazaki (Kanagawa Univ.) Singular optimal control problems for nonlinear evolution equations
Nobuyuki Kenmochi (Chiba Univ.*) governed by double time-dependent subdifferentials 10
Ken Shirakawa (Chiba Univ.)
- 41 Ken Shirakawa (Chiba Univ.) Structural observations for one-dimensional phase-field system associ-
Hiroshi Watanabe (Oita Univ.) ated with grain boundary motion 10
- 42 Miyu Hotta (Japan Women's Univ.) On growth model having age-structure for jellyfish with food chain ... 10
Toyohiko Aiki (Japan Women's Univ.)
- 43 Miu Takahashi (Japan Women's Univ.) Existence of a solution of the initial boundary value problem describing
Toyohiko Aiki (Japan Women's Univ.) a real experiment related to the Soret effect 10
Martijn Anthonissen
(Eindhoven Univ. of Tech.)

15:20–16:20 Talk Invited by Real Analysis Section

- Yoshikazu Giga (Univ. of Tokyo) On total variation flow type equations

Functional Analysis

March 17th (Sun) Conference Room IX

10:30–12:00

- 1 Hiroshi Inoue (Daiichi Univ. of Pharm.) Non self-adjoint Hamiltonian and physical operators constructed by
biorthogonal sequences in Hilbert space 15
- 2 Atia Afroz (Saitama Univ.) Bifurcation and hysteresis sets of Euler buckling problem 10
- 3 Takeo Kamizawa (Tokyo Univ. of Sci.) How can we compute the solutions to master equations of open quantum
systems? I 10
- 4 Shuji Watanabe (Gunma Univ.)* The second-order phase transition in the BCS-Bogoliubov model of
superconductivity and its operator-theoretical proof II 15
- 5 Kiyoomi Kataoka (Univ. of Tokyo*) On asymptotic analysis of the evolution operator related to the contin-
uous Kuramoto equation 15

14:15–16:00

- 6 Keiji Nakatsugawa (Hokkaido Univ.) Time operators and time crystals 10
Toshiyuki Fujii (Asahikawa Med. Univ.)
Avadh Saxena (Los Alamos Lab.)
Satoshi Tanda (Hokkaido Univ.)
- 7 Akito Suzuki (Shinshu Univ.)^b Supersymmetry of chiral symmetric unitary operators 15
- 8 Fumio Hiroshima (Kyushu Univ.) Existence, absence and localization of the ground state of the renormal-
ized Nelson Hamiltonian 15

- 9 Koki Hirota (Ritsumeikan Univ.) Purely imaginary eigenvalues of the semiclassical Zakharov–Shabat operator 15
- 10 Yukihide Tadano (Univ. of Tokyo) Uniform bounds for discrete Birman–Schwinger operators 15
Kouichi Taira (Univ. of Tokyo)
- 11 Yukihide Tadano (Univ. of Tokyo) Construction of Isozaki–Kitada modifiers for discrete Schrödinger operators with long-range perturbations on general lattices 15

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

- Hisashi Morioka (Doshisha Univ.) Weyl-type lower bound for non-scattering energies of time-harmonic acoustic equations

March 18th (Mon) Conference Room IX

9:00–12:00

- 12 Yoritaka Iwata (Tokyo Tech)^b Abstract formulation of the Cole–Hopf transform 15
- 13 Hideyasu Yamashita (Aichi Gakuin Univ.) Glauber–Sudarshan-type quantizations and their path integral representations for compact Lie groups 15
- 14 Hideto Nakashima (Nagoya Univ.) On zeta functions in several variables associated with homogeneous cones and their functional equations 15
- 15 Ryosuke Nakahama (Univ. of Tokyo) Subspace of Hermitian symmetric space of rank 2 and hypergeometric polynomials 15
- 16 Nobukazu Shimeno (Kwansei Gakuin Univ.) Spherical transform for a small K -type on real split Lie group of type G_2 15
Hiroshi Oda (Takushoku Univ.)
- 17 Minoru Itoh (Kagoshima Univ.) A higher order analogue of the Pfaffian version of the Cayley–Hamilton theorem and a description of an invariant theory 15
- 18 Toshihisa Kubo (Ryukoku Univ.) On the Peter–Weyl type decomposition theorem for the space of K -finite solutions to intertwining differential operators 15
Bent Ørsted (Aarhus Univ.)
- 19 Junko Inoue (Tottori Univ.) Semi-invariant generalized vectors associated with holomorphically induced representations of exponential solvable Lie groups 15
- 20 Toshihiko Matsuki (Ryukoku Univ.) Orthogonal multiple flag varieties of finite type: Even-degree case (Setting of problem) 15
- 21 Toshihiko Matsuki (Ryukoku Univ.) Orthogonal multiple flag varieties of finite type: Even-degree case (Classification) 15

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

- Masatoshi Kitagawa (Nara Women’s Univ.) Invariant differential operators and uniformly bounded multiplicities

March 19th (Tue) Conference Room IX

9:00–12:00

- 22 Hiroko Manaka (Nihon Univ.) Results with respect to fixed point theorems of an elastic nonlinear mapping in Banach spaces 15

23	Kazuhiro Kawamura (Univ. of Tsukuba) Hironao Koshimizu (Yonago Nat. Coll. of Tech.) <u>Takeshi Miura</u> (Niigata Univ.)	Isometries on $C^1([0, 1])$ with respect to several norms	15
24	Fernanda Botelho (Univ. of Memphis) <u>Takeshi Miura</u> (Niigata Univ.)	Generalized bi-circular idempotents on $C^1([0, 1])$	15
25	<u>Norio Niwa</u> (Nihon Univ.) Takeshi Miura (Niigata Univ.)	Surjective isometries on a Banach space of analytic functions on the open unit disc	15
26	<u>Osamu Hatori</u> (Niigata Univ.) Shiho Oi (Niigata Pref. Hakkai High School)	2-local maps on spaces of continuous functions	15
27	Keiichi Watanabe (Niigata Univ.)	Cauchy–Bunyakovsky–Schwarz type inequalities related to the Möbius operations	15
28	<u>Masaru Nagisa</u> (Chiba Univ.) Yasuo Watatani (Kyushu Univ.)	Monotone maps on operator algebras	15
29	<u>Shigeru Furuichi</u> (Nihon Univ.) Venus Kaleibary (Tabriz Univ.)	On reverses of the Golden–Thompson type inequalities	15
30	Yuki Seo (Osaka Kyoiku Univ.)	Matrix norm inequalities related to geometric means	15
31	<u>Hiroaki Tohyama</u> (Maebashi Inst. of Tech.) Hiroshi Isa (Maebashi Inst. of Tech.) Eizaburo Kamei Masayuki Watanabe (Maebashi Inst. of Tech.)	The n -th relative operator entropies on the path $A \sharp_{\mu,r} B$	15
14:15–15:45			
32	Yusuke Sawada (Nagoya Univ.)	E_0 -semigroups and product systems of W^* -bimodules	15
33	Kengo Matsumoto (Joetsu Univ. of Edu.)	* Flip conjugacy of topological Markov shifts and Ruelle C^* -algebras . . .	15
34	<u>Hiroyuki Osaka</u> (Ritsumeikan Univ.) Tamotsu Teruya (Gunma Univ.)	The Rokhlin property for inclusions of C^* -algebras	15
35	Yasuhiko Sato (Kyoto Univ.)	Calculations of nuclear dimension for amenable C^* -algebras	15
36	<u>Tsuyoshi Kajiwara</u> (Okayama Univ.) Yasuo Watatani (Kyushu Univ.)	Dimension group of the C^* -algebra associated with the Sierpinski gasket	15
16:00–17:00 Talk Invited by Functional Analysis Section			
	Yuki Arano (Kyoto Univ.) ^b	Actions of tensor categories	

Statistics and Probability

March 17th (Sun) Conference Room VIII

9:30–12:00

- 1 Hiroki Takahashi (Keio Univ.) Equi-distribution theorem for the Gauss map 15
- 2 Hajime Kaneko (Univ. of Tsukuba) Comparison of normality between different numerical systems 15
Shigeki Akiyama (Univ. of Tsukuba)
Dong Han Kim (Dongguk Univ.)
- 3 Johannes Jaerisch (Shimane Univ.) Dimension gaps in transient dynamics on the real line 15
Maik Gröger (Univ. Vienna)
Marc Kesseböhmer (Univ. Bremen)
- 4 Naoto Shimaru (Okayama Univ. of Sci.) On discrepancies of irrational rotations with several large partial quo-
tients 15
Keizo Takashima
(Okayama Univ. of Sci.)
- 5 Kenkichi Tsunoda (Osaka Univ.) Scaling limits for Glauber–Kawasaki processes 15
- 6 Mao Shinoda (Keio Univ.) Non-convergence of equilibrium measures for a locally constant function
..... 15
- 7 Yosuke Kawamoto Dynamical transits between universal infinite particle systems related
(Fukuoka Dental Coll.) to random matrices 15
- 8 Shota Osada (Kyushu Univ.) Tree representations of continuum determinantal point processes and
tail triviality 15

14:15–15:05

- 9 Akihito Hora (Hokkaido Univ.) Effect of microscopic pausing time distributions on the evolution of
limit shapes of random Young diagrams 15
- 10 Toshihiro Uemura (Kansai Univ.) Homogenization of symmetric Lévy processes on $\mathbb{R}^d$ 15
Rene Schilling (TU Dresden)
- 11 Sergio Albeverio (Bonn Univ.) Non-local Dirichlet forms on infinite dimensional topological vevtor
spaces 15
Minoru Yoshida (Kanagawa Univ.)

15:20–16:20 Award Lecture for the 2018 MSJ Analysis Prize

Norio Konno (Yokohama Nat. Univ.) From interacting particle systems to quantum walks

16:40–17:40 Talk Invited by Statistics and Probability Section

Khanh Duy Trinh (Tohoku Univ.) Gaussian beta ensembles in global regime

March 18th (Mon) Conference Room VIII

10:00–11:20

- 12 Satoshi Suzuki (Shimane Univ.) Optimality conditions for quasiconvex programming in terms of subdif-
ferentials 15
- 13 Toshiharu Fujita Markov decision process with converging branch system 10
(Kyushu Inst. of Tech.)

14	<u>Takahiro Tsuchiya</u> (Univ. of Aizu) Dai Taguchi (Osaka Univ.)	Forward-backward stochastic differential equations and Newton's method	15
15	Yuji Yoshida (Univ. of Kitakyushu)	Risk measures derived from utility functions	15
16	Ryoichi Suzuki (Keio Univ.)	Local risk-minimization for digital options in Lévy markets via Malliavin calculus	10

11:30–12:00 Research Section Assembly

March 19th (Tue) Conference Room VIII

9:45–12:00

17	Yuichi Goto (Waseda Univ.)	Bivariate asymptotic theory of nonparametric estimation based on bi- nary time series	10
18	Yujie Xue (Waseda Univ.)	Modified LASSO estimators for linear quantile regression models with long-memory disturbances	10
19	Hideaki Nagahata (Inst. of Stat. Math./Waseda Univ.)	Higher-order approximation of the distribution of test statistics for high-dimensional time-series ANOVA models	15
20	William Dunsmuir (Univ. of New South Wales) <u>Yan Liu</u> (Kyoto Univ.)	A test of missing completely at random in time series	15
21	Fumiya Akashi (Waseda Univ.)	Robust local polynomial regression method for the dependent cylindrical data	15
22	<u>Koji Tsukuda</u> (Univ. of Tokyo) Yoichi Nishiyama (Waseda Univ.)	Goodness-of-fit tests for Markovian processes based on marked empirical processes	15
23	<u>Kazuyoshi Yata</u> (Univ. of Tsukuba) Makoto Aoshima (Univ. of Tsukuba) Aki Ishii (Tokyo Univ. of Sci.)	Tests for high-dimensional covariance structures using ECDM method- ology	15
24	Ken-ichi Koike (Univ. of Tsukuba)	Asymptotic comparison of Bayesian information inequalities	15

14:15–15:00

25	Gaku Igarashi (Univ. of Tsukuba)	Boundary-bias-free direct density ratio estimation using beta kernel ..	15
26	<u>Yoshihide Kakizawa</u> (Hokkaido Univ.) Gaku Igarashi (Univ. of Tsukuba)	Higher-order bias corrections for asymmetric kernel density estimators	15
27	<u>Yoshihiko Maesono</u> (Kyushu Univ.) Rizky Reza Fauzi (Kyushu Univ.)	Boundary-free Kolmogorov–Smirnov test based on kernel estimation	10

15:20–16:20 Talk Invited by Statistics and Probability Section

Aki Ishii (Tokyo Univ. of Sci.)	High-dimensional statistical inference under the strongly spiked eigen- value model
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16:40–17:40 Talk Invited by Statistics and Probability Section

Kiyotaka Iki (Nihon Univ.)	Symmetry models based on an underlying bivariate distribution for square contingency tables
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March 20th (Wed) Conference Room VIII

9:30–12:00

- 28 Mitsuhiro Takami (Tokyo Univ. of Sci.) Geometric mean type measure of symmetry for square contingency
Yusuke Saigusa (Yokohama City Univ.) tables with ordered categories 10
Aki Ishii (Tokyo Univ. of Sci.)
Tomoyuki Nakagawa
(Tokyo Univ. of Sci.)
Sadao Tomizawa (Tokyo Univ. of Sci.)
- 29 Toshiki Takei (Tokyo Univ. of Sci.) Geometric mean type measure of marginal homogeneity for square
Aki Ishii (Tokyo Univ. of Sci.) contingency tables with ordered categories 10
Tomoyuki Nakagawa
(Tokyo Univ. of Sci.)
Sadao Tomizawa (Tokyo Univ. of Sci.)
- 30 Satoru Shinoda Marginal inhomogeneity based on complementary log-log transform for
(Tokyo Univ. of Sci./Taisho Pharmaceutical Co., Ltd.) multi-way contingency table 10
Kouji Tahata (Tokyo Univ. of Sci.)
Kiyotaka Iki (Nihon Univ.)
Sadao Tomizawa (Tokyo Univ. of Sci.)
- 31 Takuya Yoshimoto Moment symmetry model and decomposition of marginal symmetry
(Tokyo Univ. of Sci./Chugai Pharmaceutical Co., Ltd.) model for multi-way contingency tables 15
Kouji Tahata (Tokyo Univ. of Sci.)
Kiyotaka Iki (Nihon Univ.)
Sadao Tomizawa (Tokyo Univ. of Sci.)
- 32 Kengo Fujisawa (Tokyo Univ. of Sci.) Generalized marginal inhomogeneity model for multidimensional con-
Kouji Tahata (Tokyo Univ. of Sci.) tingency tables 15
- 33 Ayaka Yagi (Tokyo Univ. of Sci.) A new test statistic for a mean vector with monotone missing data
Mizuki Onozawa (Tokyo Univ. of Sci.) 15
Takashi Seo (Tokyo Univ. of Sci.)
- 34 Nobuhiro Taneichi Improvement of test statistics of some independencies in three dimen-
(Hokkaido Univ. of Edu.) sional contingency tables. 15
Yuri Sekiya (Hokkaido Univ. of Edu.)
Jun Toyama
(Inst. for the Practical Application of Math.)
- 35 Shohei Satake (Kobe Univ.) On constructing CAO A with strength 3 and the location of sequences
Kazuki Yoshida (Kobe Univ.) of quadratic residues 15
Frederick Kin Hing Phoa
(Academia Sinica)
Masanori Sawa (Kobe Univ.)
- 36 Masanori Sawa (Kobe Univ.) A motivation for the study of cubature formulas for rotationally invari-
ant integrals 15

14:15–16:00

- 37 Shoko Chisaki (Tokyo Univ. of Sci.) Geometrical constructions of dropout designs 10
Nobuko Miyamoto (Tokyo Univ. of Sci.)
Ryoh Fuji-Hara (Univ. of Tsukuba*)

38	<u>Kazuki Matsubara</u> (ChuoGakuin Univ.) Sanpei Kageyama (Tokyo Univ. of Sci.)	Some existence of cyclic splitting-balanced packing-block designs	15
39	<u>Hiromu Yumiba</u> (Int. Center for Academic Exchange) Yoshifumi Hyodo (Okayama Univ. of Sci.)	D^* -optimal balanced third-order designs of resolution $R^*(\{10, 01\})$ with $N < \nu(m)$ for 3^m factorials	15
40	<u>Shinnosuke Takemura</u> (Aichi Pref. Univ.) Masatake Hirao (Aichi Pref. Univ.)	On tight spherical-cap designs	15
41	<u>Yoshitaka Matsuura</u> (Aichi Pref. Univ.) Masatake Hirao (Aichi Pref. Univ.) Masanori Sawa (Kobe Univ.)	On tight or almost tight Euclidean design for circularly symmetric integrals	15
42	<u>Kanami Ito</u> (Aichi Pref. Univ.) Masatake Hirao (Aichi Pref. Univ.)	Constructing weighted spherical designs via hyperoctahedral groups . .	15

Applied Mathematics

March 17th (Sun) Conference Room I

9:00–12:10

1	Shunji Horiguchi	Sets of initial values converging at the roots of the extended complex Newton method for $z^3 = 1$	15
2	Shigeyoshi Ogawa (Ritsumeikan Univ.)	A Lagrangian numerical scheme for the noncausal stochastic integral	10
3	Hirotake Yaguchi (Mie Univ.*) *	Rate of convergence to invariant density function for distribution of iterated beta transformation and linear mod 1 transformation	15
4	<u>Isamu Ohnishi</u> (Hiroshima Univ.) Masayasu Mimura (Musashino Univ.) Rein van der Hout Danielle Hilhorst (Univ. Paris-Sud)	Existence theorem of time global solution of modified Keller–Rubinow model for Liesegang phenomena by use of subdifferential	10
5	<u>Yasuhide Uegata</u> (Meiji Univ.) Shigetoshi Yazaki (Meiji Univ.) Kazunori Kuwana (Yamagata Univ.) Maika Goto (Yamagata Univ.)	Mathematical approach to smoldering phenomena on a sheet of paper near floor I : analysis by image segmentation	15
6	<u>Syunsuke Kobayashi</u> (Meiji Univ.) Yasuhide Uegata (Meiji Univ.) Shigetoshi Yazaki (Meiji Univ.)	Mathematical approach to smoldering phenomena on a sheet of paper near floor (II: bifurcation analysis)	15
7	<u>Shinya Uchiyumi</u> (Gakushuin Univ.) Masahisa Tabata (Kyushu Univ.*)	Convergence of the Lagrange–Galerkin scheme with numerical quadrature — L^2 -estimate of the velocity—	15

8	Masaaki Uesaka (Hokkaido Univ.) Yoshikazu Giga (Univ. of Tokyo) Koya Sakakibara (Kyoto Univ. / RIKEN) <u>Kazutoshi Taguchi</u> (Univ. of Tokyo)	On numerical scheme for constrained total variation flows	15
9	<u>Kohji Ohtsuka</u> (Hiroshima Kokusai Gakuin Univ.) Takashi Nakazawa (Osaka Univ.)	Shape optimization in Stokes problem using a generalization of J-integral	15
10	Yuuki Shimizu (Kyoto Univ.)	Fluid equations on surfaces and its steady solutions	15
11	Christopher C. Green (Macquarie Univ.) <u>Koya Sakakibara</u> (Kyoto Univ.) Takashi Sakajo (Kyoto Univ.)	Numerical computation of harmonic measures on closed surfaces	15
12	Takashi Sakajo (Kyoto Univ.) Bartosz Protas (McMaster Univ.)	Feedback stabilization of an inviscid vortex sheet	15

12:30–12:45 Presentation Ceremony for the 2018 MSJ Prize for Excellent Young Applied Mathematicians

14:15–16:55

13	Yasuaki Hiraoka (Kyoto Univ. / RIKEN) <u>Michio Yoshiwaki</u> (RIKEN / Kyoto Univ. / Osaka City Univ.)	Algebraic stability theorem for the derived category of the persistence module	15
14	Tatsuya Mikami (Tohoku Univ.) Yasuaki Hiraoka (Kyoto Univ.)	Percolation on homology generators in codimension one	15
15	Mickaël Buchet (Graz Univ. of Tech.) <u>Emerson Gaw Escolar</u> (RIKEN / Kyoto Univ.)	Every 1D persistence module is a restriction of some indecomposable 2D persistence module	15
16	Hideto Asashiba (Shizuoka Univ.) Mickaël Buchet (Graz Univ. of Tech.) Emerson Gaw Escolar (RIKEN / Kyoto Univ.) <u>Ken Nakashima</u> (Shizuoka Univ.) Michio Yoshiwaki (RIKEN / Kyoto Univ. / Osaka City Univ.)	On interval decomposability of 2D persistence modules	15
17	<u>Tomoki Uda</u> (Tohoku Univ.) Takashi Sakajo (Kyoto Univ.) Tomoo Yokoyama (Kyoto Univ. of Edu.)	Discrete formulation of Reeb graphs and its application to topological flow data analysis	15
18	Yuki Chiba (Univ. of Tokyo)	Discontinuous Galerkin method for Poisson equation with Robin boundary condition on a curved domain	15
19	<u>Junji Yamada</u> (Kyoto Univ.) Mitsuru Shibayama (Kyoto Univ.)	Integrability of planer three-body problem with generalized force under reduction	15
20	<u>Takuya Tsuchiya</u> (Waseda Univ.) Misa Fukushima (Waseda Univ.) Gen Yoneda (Waseda Univ.)	Numerical simulations of second order perturbation equations of Einstein equations in Minkowski background	15

- 21 Akitoshi Takayasu (Univ. of Tsukuba) Verified computations for solutions of complex Ginzburg–Landau equations 15
- 22 Yoshitaka Watanabe (Kyushu Univ.) A higher order constructive error estimation of the Poisson equation
Takehiko Kinoshita and its applications 15
Nobito Yamamoto
(Univ. of Electro-Comm.)
Mitsuhiro T. Nakao (Waseda Univ.)

17:00–18:00 Talk Invited by Applied Mathematics Section

- Xuefeng Liu (Niigata Univ.) Progress about computer-assisted proof for the stationary solution of Navier–Stokes equation

March 18th (Mon) Conference Room I

9:10–12:10

- 23 Fumio Nakajima (Iwate Univ.)* Logarithmic potential property appeared on the surfaces of Japanese volcanoes 15
- 24 Masashi Mizuno (Nihon Univ.)* Some evolution equation of grain boundaries with dynamic lattice ori-
Yekaterina Epshteyn (Univ. Utah) entations and with triple junction drag 15
Chun Liu (Illinois Inst. Tech.)
- 25 Kei Nishi (Kyoto Sangyo Univ.) Pulse dynamics in a bistable three-component reaction-diffusion system
Yasumasa Nishiura (Tohoku Univ.) with a jump-type heterogeneity 15
Takashi Teramoto
(Asahikawa Medical Univ.)
- 26 Masato Kimura (Kanazawa Univ.) Two dimensional snow crystal growth model with supersaturation of
Ryohei Yamaoka (Kanazawa Univ.) vapor 15
Tetsuya Ishiwata
(Shibaura Inst. of Tech.)
Shigetoshi Yazaki (Meiji Univ.)
- 27 Fuminori Sakaguchi (Univ. of Fukui) A kind of generalization of an integer-type algorithm for solving ODEs
based on the algebraic extension of the field of rational functions 15
- 28 Shoya Motonaga (Kyoto Univ.) Nonpersistence of periodic orbits, homoclinic orbits, first integrals, and
Kazuyuki Yagasaki (Kyoto Univ.) commutative vector fields in perturbed systems 15
- 29 Kazuyuki Yagasaki (Kyoto Univ.) Bifurcations of homoclinic orbits in reversible systems 15
- 30 Abdennasser Chekroun Analysis of an infection age structured SIR epidemic model with spatial
(Univ. of Tlemcen) diffusion in the case of Neumann boundary condition 15
Toshikazu Kuniya (Kobe Univ.)
- 31 Takeshi Gotoda (Hokkaido Univ.) Mathematical modeling for layered structure and barrier function of the
Masaaki Uesaka (Hokkaido Univ.) epidermis 15
Yusuke Yasugahira (Hokkaido Univ.)
Yasuaki Kobayashi (Univ. of Tokyo)
Hiroyuki Kitahata (Chiba Univ.)
Mitsuhiro Denda (Shiseido Co., Ltd.)
Masaharu Nagayama (Hokkaido Univ.)
- 32 Maya Kageyama Segregation patterns for self-regulating homeostasis model 15
(Kwansei Gakuin Univ.)
Atsushi Yagi (Osaka Univ.*)

- 33 Sohei Tasaki Necessary and sufficient condition for hysteresis in a mathematical
(RIKEN/Sendai Nat. Coll. of Tech.) model of cell type regulation of *Bacillus subtilis* 15
Madoka Nakayama
(Sendai Nat. Coll. of Tech.)
Izumi Takagi
(Tohoku Univ./Renmin Univ. of China)
Wataru Shoji
(Tohoku Univ./Tohoku Univ.)

13:15–14:15 Talk Invited by Applied Mathematics Section

Shingo Iwami (Kyushu Univ.) Collaboration between mathematical sciences and virology

March 19th (Tue) Conference Room I

9:20–11:45

- 34 Shohei Satake (Kobe Univ.) On the Erdős–Moon problem 15
- 35 Sho Suda (Aichi Univ. of Edu.) On tight 4-designs in Hamming association schemes 10
Alexander Gavriluk
(Pusan Nat. Univ.)
Janoš Vidali (Univ. of Ljubljana)
- 36 Kosuke Suzuki (Hiroshima Univ.)^b Classification of digital (0,2)-sequences in base 2 15
- 37 Hiroshi Naruse (Univ. of Yamanashi) Generating function of reverse plane partitions and equivariant K -
Soichi Okada (Nagoya Univ.) theory 15
- 38 Hidefumi Ohsugi Reflexive polytopes arising from bipartite graphs with γ -positivity as-
(Kwansei Gakuin Univ.) sociated to interior polynomials 15
Akiyoshi Tsuchiya (Osaka Univ.)
- 39 Ayaka Ishikawa (Yokohama Nat. Univ.) The enumeration of unlabeled rooted trees using Young tableaux 15
- 40 Akiko Yazawa (Shinshu Univ.) The Hessian of the generating function for the forests with k components
..... 15
- 41 Chie Nara (Meiji Univ.) Continuous flattening of the 2-dimensional skeleton in a regular simplex
Jin-ichi Itoh (Sugiyama Jogakuen Univ.) 15
- 42 Iwao Sato (Oyama Nat. Coll. of Tech.) The weighted Kirchhoff index of a graph 15
Hideo Mitsunashi (Hosei Univ.)
Hideaki Morita (Muroan Inst. of Tech.)

14:20–16:30

- 43 Masahiro Hachimori An optimization problem on the orientations of graphs related to the
(Univ. of Tsukuba) out-degrees 10
- 44 Kiyoshi Ando Some local conditions for k -contractible edges 15
(Nat. Inst. of Information/JST ERATO)
- 45 Shinya Fujita (Yokohama City Univ.) On the optimal proper connection number in connected graphs 10
- 46 Akira Saito (Nihon Univ.) Distance matching extension of star-free graphs 15
Jun Fujisawa (Keio Univ.)
Robert E. L. Aldred (Otago Univ.)

47	<u>Jun Fujisawa</u> (Keio Univ.) Carol T. Zamfirescu (Ghent Univ.)	Separating triangles in non-hamiltonian 1-tough triangulations	15
48	<u>Yusuke Suzuki</u> (Niigata Univ.) Gen Kawatani (Tokyo Univ. of Sci.)	Partially broken orientations of Eulerian plane graphs	15
49	Kengo Enami (Yokohama Nat. Univ.)	Non-isomorphic graphs with the same beans function	15
50	Yumiko Ohno (Yokohama Nat. Univ.)	An algorithm for enumerating triad colorings of triangulations on closed surfaces	15

16:40–17:40 Talk Invited by Applied Mathematics Section

Michitaka Furuya (Kitasato Univ.) ^b	Comparison and characterization of graph classes generated by forbidden subgraph conditions
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March 20th (Wed) Conference Room I

9:20–11:50

51	Akihiro Narimatsu (Yokohama Nat. Univ.)	Conditions for existence of localization in space-homogeneous quantum walks on Z^d	15
52	Kei Saito (Yokohama Nat. Univ.)	Periodicity for the Fourier quantum walk on graphs	10
53	<u>Kei Saito</u> (Yokohama Nat. Univ.) Akito Suzuki (Shinshu Univ.) Akihiro Narimatsu (Yokohama Nat. Univ.) Toru Fuda (Kokushikan Univ.)	Long-time behavior of the split-step quantum walk on cycles	10
54	<u>Shunsuke Kanatani</u> (Yokohama Nat. Univ.) Takashi Komatsu (Yokohama Nat. Univ.) Norio Konno (Yokohama Nat. Univ.)	Orthogonal polynomials induced by two-dimensional quantum walk . .	10
55	Yusuke Yoshie (Tohoku Univ.)	Dynamical analysis of periodic quantum walks	15
56	Etsuo Segawa (Yokohama Nat. Univ.)	A construction of quantum walk on directed graph induced by graph tessellation	15
57	<u>Takako Endo(Watanabe)</u> (Yokohama Nat. Univ.) Takashi Komatsu (Yokohama Nat. Univ.) Norio Konno (Yokohama Nat. Univ.) Tomoyuki Terada (Kanazawa Inst. of Tech.)	Stationary measure for multi-state quantum walk	15
58	<u>Shohei Koyama</u> (Yokohama Nat. Univ.) Kei Saito (Yokohama Nat. Univ.)	Periodicity of three-state quantum walks on cycles	10
59	Kazuyuki Wada (Nat. Inst. of Tech., Hachinohe Coll.)	A weak limit theorem for a class of long range type quantum walks	15

60	<u>Keisuke Asahara</u> (Hokkaido Univ.) Daiju Funakawa (Hokkai-Gakuen Univ.) Etsuo Segawa (Yokohama Nat. Univ.) Akito Suzuki (Shinshu Univ.) Noriaki Teranishi (Hokkaido Univ.)	Spectral mapping theorem of a nonunitary quantum walk	15
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Topology

March 17th (Sun) Conference Room VII

9:45–12:00

1	Naoki Kitazawa (Kyushu Univ.)	Explicit fold maps and their source manifolds	15
2	Naoki Kitazawa (Kyushu Univ.)	Inverse images of regular values of a differentiable map and the topology of its Reeb space	15
3	Takahiro Yamamoto (Tokyo Gakugei Univ.)	Topological equivalence among map germs of 3-manifolds with boundary into the plane	15
4	Kenta Hayano (Keio Univ.)	Stability of non-proper functions	15
5	<u>Yutaro Kabata</u> (Kyushu Univ.) Kentaro Saji (Kobe Univ.) Masaru Hasegawa (Iwate Med. Univ.)	Contact cylindrical surfaces and apparent contours around parabolic points of regular surfaces in Euclidean 3-space	15
6	<u>Kentaro Saji</u> (Kobe Univ.) Yoshiki Yamamoto (Kobe Univ.)	Contacts of standard cuspidal edge with singular surfaces	10
7	Keisuke Teramoto (Kobe Univ.)	Functions on causpical edges and D_4 singularities	15
8	Takahiro Matsuyuki (Tokyo Tech)	Obstruction class of a deformation of homotopy algebra models	15

14:15–15:05

9	<u>Masaki Nakagawa</u> (Okayama Univ.) Hiroshi Naruse (Univ. of Yamanashi)	Darondeau–Pragacz formulas in complex cobordism	15
10	Shun Wakatsuki (Univ. of Tokyo)	Generalizations of the loop coproduct	15
11	Shin Hayashi (Nat. Inst. of Adv. Industrial Sci. and Tech./Tohoku Univ.)	Index theory for Toeplitz operators associated with some concave corners and its applications	10

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

Kiyonori Gomi (Shinshu Univ.)	Introduction to topological insulators for topologists
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March 18th (Mon) Conference Room VII

9:30–11:50

- 12 Atsuhide Mori (Osaka Dental Univ.) A pair of Poisson structures associated with normal distributions 15
- 13 Kazuaki Ogiwara (Osaka City Univ.) The smooth torus orbit closures in the Grassmannians 15
Masashi Noji (Osaka City Univ.)
- 14 Yuuki Shimizu (Kyoto Univ.) Fluid dynamics on surfaces from the viewpoint of the singular Riemannian foliation generated by a Killing vector field 15
- 15 Tsukasa Ishibashi (Univ. of Tokyo) Cluster realization of Weyl groups and higher Teichmüller theory 15
Rei Inoue (Chiba Univ.)
Hironori Oya (Shibaura Inst. of Tech.)
- 16 Wataru Yuasa (Kyoto Univ.) On power subgroups of Dehn twists in hyperelliptic mapping class groups 15
- 17 Takuya Katayama (Hiroshima Univ.) On virtual embeddability between the mapping class groups of some surfaces 15
Erika Kuno (Osaka Univ.)
- 18 Yoshihiro Asayama Balancedness for spanning bipartite quadrangulations of triangulations 15
(Yokohama Nat. Univ.)
Naoki Matsumoto (Seikei Univ.)
- 19 Takamichi Sushida (Hokkaido Univ.) Voronoi tilings with general Archimedean spiral lattices 15
Yoshikazu Yamagishi (Ryukoku Univ.)

March 18th (Mon) Conference Room V

13:00–13:10 Presentation Ceremony for the 2018 MSJ Geometry Prize**13:15–14:15 Award Lecture for the 2018 MSJ Geometry Prize**

- 19 Yuji Odaka (Kyoto Univ.)* Collapsing Kähler–Einstein metrics and moduli compactification

March 19th (Tue) Conference Room VII

9:00–11:50

- 20 Yuta Nozaki (Univ. of Tokyo) An infinite family of homologically fibered knots of the same genus 15
- 21 Kazuhiro Ichihara (Nihon Univ.) Decomposing Heegaard splittings along separating incompressible surfaces in 3-manifolds 10
Makoto Ozawa (Komazawa Univ.)
J. Hyam Rubinstein (Univ. of Melbourne)
- 22 Toru Ikeda (Kindai Univ.) Surgery descriptions of orientation-reversing periodic maps on closed orientable 3-manifolds 10
- 23 Shunsuke Tsuji (Kyoto Univ.) A construction of the universal $sl(n)$ -quantum invariant for integral homology 3-spheres 15
- 24 Tomomi Kawamura (Nagoya Univ.) Integral region choice problems on link diagrams 10
- 25 Masashi Takamura Arrow diagrams on spherical curves and computations 15
(Aoyama Gakuin Univ.)
Noboru Ito (Univ. of Tokyo)

26	<u>Noboru Ito</u> (Univ. of Tokyo) Yusuke Takimura (Gakushuin Boys' Junior High School)	Crosscap number two alternating knots	15
27	<u>Noboru Ito</u> (Univ. of Tokyo) Yuka Kotorii (RIKEN)	On the degree three case of Goussarov–Polyak–Viro Conjecture of knots	15
28	Tomo Murao (Univ. of Tsukuba)	An extension and an Alexander pair of a multiple conjugation quandle	10
29	Kanako Oshiro (Sophia Univ.)	Shadow biquandles and local biquandles	10
30	<u>Atsushi Ishii</u> (Univ. of Tsukuba) Kanako Oshiro (Sophia Univ.)	Fox derivatives for quandles	10
31	Hiroto Masuda (Keio Univ.)	Construction of corks with nonabelian infinite group actions	15
14:15–15:05			
32	Airi Aso (Tokyo Metro. Univ.)	Twisted Alexander polynomials of tunnel number one Montesinos knots	10
33	Ryoto Tange (Kyushu Univ.)	Twisted Alexander polynomials and certain Dehn surgeries on twist knots	10
34	<u>Taizo Kanenobu</u> (Osaka City Univ.) Toshio Sumi (Kyushu Univ.)	Twisted Alexander polynomial of a ribbon 2-knot	10
35	Tomoyuki Yasuda (Nara Nat. Coll. of Tech.)	* Evaluations of the ribbon crossing number on ribbon 2-knots and the crossing number on 1-knots.	10

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

Takahiro Oba (Kyoto Univ.)	Fiber structures and the topology of contact and symplectic manifolds
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Infinite Analysis

March 19th (Tue) Conference Room VI

10:00–11:45

1	<u>Yasuaki Gyoda</u> (Nagoya Univ.) Shogo Fujiwara (Nagoya Univ.)	Duality between mutations and rear mutations in cluster algebras	15
2	Yuma Mizuno (Tokyo Tech)	Exponents associated with the Y-system of type X_r with level ℓ	15
3	<u>Takao Suzuki</u> (Kindai Univ.) Naoto Okubo (Aoyama Gakuin Univ.)	A similarity reduction of q -Drinfeld–Sokolov hierarchy of type $A_{2n+1}^{(1)}$ and q -Garnier system	15
4	<u>Naoto Okubo</u> (Aoyama Gakuin Univ.) Takao Suzuki (Kindai Univ.)	Generalized q -Painlevé VI systems of type $(A_{2n+1} + A_1 + A_1)^{(1)}$ arising from cluster algebra	15
5	Naoto Okubo (Aoyama Gakuin Univ.) Teruhisa Tsuda (Hitotsubashi Univ.) <u>Tetsu Masuda</u> (Aoyama Gakuin Univ.)	Birational realization of Weyl groups and cluster algebras	15
6	Tomoyuki Takenawa (Tokyo Univ. of Marine Sci. and Tech.)	The space of initial conditions for some 4D Painlevé systems	15

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

Hajime Nagoya (Kanazawa Univ.) Conformal field theory and Painlevé equations

15:30–16:30 Talk Invited by Infinite Analysis Special Session

Ryosuke Kodera (Kobe Univ.) Affine Yangians and integrable systems

March 20th (Wed) Conference Room VI

10:00–11:45

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| 7 | <u>Koichi Hiraide</u> (Ehime Univ.)
Chihiro Matsuoka (Osaka City Univ.) | Representation with special functions via Borel–Laplace transform to invariant curves of 2D dynamics and chaotic sets I | 15 |
| 8 | <u>Chihiro Matsuoka</u> (Osaka City Univ.)
Koichi Hiraide (Ehime Univ.) | Representation with special functions via Borel–Laplace transform to invariant curves of 2D dynamics and chaotic sets II | 15 |
| 9 | <u>Takanori Ayano</u> (Osaka City Univ.)
Victor Buchstaber
(Steklov Inst. of Math.) | Construction of two parametric deformation of KdV-hierarchy and solution by sigma function | 15 |
| 10 | Shinsuke Iwao (Tokai Univ.) | Tropical KP and combinatorics of Young tableaux | 15 |
| 11 | Genki Shibukawa (Kobe Univ.) | Pieri type formulas for the shifted Jack polynomials | 15 |
| 12 | <u>Ayumu Hoshino</u>
(Hiroshima Inst. of Tech.)
Jun'ichi Shiraishi (Univ. of Tokyo) | Kostka polynomials with one column diagrams of type B_n , C_n and D_n | 15 |
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