

## Remark

- The order of authors is written according to your input order. The first author is not necessarily the speaker. If the talk have two or more authors, then the speaker is underlined.
- The mark  $\blackboard$  means the presentation by using the blackboard. If you talk by using your PC/tablet, no mark is written.
- The mark  $\star$  means emeritus professor.
- The number on the right side of the title implies the time of talk (minutes). There are some talks whose limited time is shortened due to various reasons. Your kind understanding is appreciated.

## Contents

Foundation of Mathematics and History of Mathematics . . . . .	2
Algebra . . . . .	4
Geometry . . . . .	8
Complex Analysis . . . . .	11
Functional Equations . . . . .	13
Real Analysis . . . . .	19
Functional Analysis . . . . .	21
Statistics and Probability . . . . .	23
Applied Mathematics . . . . .	26
Topology . . . . .	31
Infinite Analysis . . . . .	33

# Foundation of Mathematics and History of Mathematics

September 22nd (Fri)

## 9:20–10:30

01-01-0004

- 1 Tsukane Ogawa (Yokkaichi Univ.) Treatment of polynomial in Oka Yunitada's *Kijutsu Kairohou* (*A method to solve the path to create a formula*) in the Takuma School ..... 15  
Noriko Tanaka (Naragakuen Univ.)

01-01-0006

- 2 Noriko Tanaka (Naragakuen Univ.) Plane geometry solution devices in Oka Yunitada's "Kijutsu Kairohou" (A method to solve the path to create a formula) in the Takuma School ..... 15  
Tsukane Ogawa (Yokkaichi Univ.)

01-01-0015

- 3 Shunji Horiguchi Relations between Murase Yoshiyasu general recurrence formula, general Newton method, and general Mandelbrot recurrence formula .... 15

01-01-0025

- 4 Makoto Tamura (Osaka Sangyo Univ.) On the methods by Wang Xiaotong for right triangles ..... 15

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

01-02-0002

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

## 12:00–12:15 Mathematics History Team Meeting

## 14:15–16:45

01-01-0017

- 5 Nobu-Yuki Suzuki (Shizuoka Univ.) A supplementary note on a weak version of the existence property in intermediate predicate logics ..... 15

01-01-0005

- 6 Tatsuya Shimura (Nihon Univ.) A generalization of Minari's theorem on disjunction property ..... 15

01-01-0023

- 7 Tatsuya Shimura (Nihon Univ.) Cut-elimination for the modal logic  $\mathbf{K4Z}_{14}^+$  ..... 15

01-01-0003

- 8 Haruka Kogure (Kanazawa Univ.) On the conservation results for local reflection principles ..... 15  
Taishi Kurahashi (Kobe Univ.)

01-01-0007

- 9 Yuta Sato (Kobe Univ.) The finite frame property of some extensions of the pure logic of necessitation ..... 15  
Taishi Kurahashi (Kobe Univ.)

01-01-0012

- 10 Ryo Kashima (Tokyo Tech) Cut-free sequent calculi for the provability logic D ..... 15  
Taishi Kurahashi (Kobe Univ.)  
Sohei Iwata (Aichi Gakuin Univ.)

01-01-0020

- 11 Toshio Suzuki (Tokyo Metro. Univ.) Equilibria of AND-OR trees without assumptions on tree shapes ..... 15

01-01-0008

- 12 Masahiro Kumabe (Open Univ. of Japan) Characterizations of Solovay reducibility via query restriction for signed-digit representation ..... 15  
Kenshi Miyabe (Meiji Univ.)  
Toshio Suzuki (Tokyo Metro. Univ.)

01-01-0022

- 13 Kohtaro Tadaki (Chubu Univ.) A refinement of quantum information theory by algorithmic randomness VII ..... 15

September 23rd (Sat)

## 9:20–10:30

01-01-0016

- 14 Yudai Suzuki (Tohoku Univ.) On the  $\Pi_2^1$  part of  $\Pi_1^1\text{-CA}_0$ . ..... 15  
Keita Yokoyama (Tohoku Univ.)

<a href="#">01-01-0019</a>			
15	<a href="#">Hiroyuki Ikari</a> (Tohoku Univ.) Keita Yokoyama (Tohoku Univ.)	On $\Pi_1^1$ -conservativeness between $RT^2$ and $B\Sigma_3^0$ .....	15
<a href="#">01-01-0018</a>			
16	<a href="#">Hisashi Aratake</a> (Kyoto Univ.)	On the class of models represented by sheaves .....	15
<a href="#">01-01-0010</a>			
17	<a href="#">Hiroataka Kikyo</a> (Kobe Univ.) Akito Tsuboi (Univ. of Tsukuba*)	On cyclic automorphisms .....	15
<b>10:45–11:45 Talk Invited by Section on Foundation and History of Mathematics</b>			
<a href="#">01-02-0001</a>			
	<a href="#">Kenta Tsukuura</a> (Hosei Univ.)	The quotients of Prikry-type forcings and Saturated ideals	
<b>12:00–12:15 Research Section Assembly</b>			
<b>14:15–16:30</b>			
<a href="#">01-01-0001</a>			
18	<a href="#">Toshimichi Usuba</a> (Waseda Univ.)	Loś's theorem without the axiom of choice .....	15
<a href="#">01-01-0021</a>			
19	<a href="#">Rihito Takase</a> (Kobe Univ.) Taishi Kurahashi (Kobe Univ.)	Modal logic of provability and forcing .....	15
<a href="#">01-01-0009</a>			
20	<a href="#">Yasushi Hirata</a> (Kanagawa Univ.) Nobuyuki Kemoto (Oita Univ.) Yukinobu Yajima (Kanagawa Univ.*)	Countable paracompactness and $C^*$ -embeddings of closed discrete subsets in subspaces of products of ordinals .....	15
<a href="#">01-01-0002</a>			
21	<a href="#">Tatsuya Goto</a> (Kobe Univ.)	Game theoretic variations of cardinal invariants .....	15
<a href="#">01-01-0014</a>			
22	<a href="#">Takashi Yamazoe</a> (Kobe Univ.)	Evasion number and Cichoń's diagram .....	15
<a href="#">01-01-0024</a>			
23	<a href="#">Yusuke Hayashi</a> (Kobe Univ.)	Dominating number generalized to $\aleph_\omega$ .....	15
<a href="#">01-01-0011</a>			
24	<a href="#">Toshimasa Tanno</a> (Kobe Univ.)	Stationary tower forcings and universally Baire sets .....	15
<a href="#">01-01-0013</a>			
25	<a href="#">Teruyuki Yorioka</a> (Shizuoka Univ.)	Todorćević's fragments of Martin's Axiom and variations of uniformizations of ladder system colorings .....	15

# Algebra

September 20th (Wed)

## 9:30–11:45

<a href="#">02-01-0051</a>	1 Kohichi Ohki (OK Lab. Co. Ltd.)	Proof of Riemann hypothesis . . . . .	10
<a href="#">02-01-0001</a>	2 Daisuke Shiomi (Yamagata Univ.)	A polynomial analogue of Girstmair’s formulas . . . . .	10
<a href="#">02-01-0035</a>	3 <u>Manabu Yoshida</u> (Toyama Nat. Coll. of Tech.) Shun’ichi Yokoyama (Tokyo Metro. Univ.)	On the computation of all extensions of a $p$ -adic field of characteristic $p$ . . . . .	15
<a href="#">02-01-0004</a>	4 Wataru Takeda (Tokyo Univ. of Sci.)	Existence of the solutions to the Brocard–Ramanujan problem for norm forms . . . . .	15
<a href="#">02-01-0014</a>	5 Maozhou Huang (Tokyo Tech)	On the ramification of the torsion points of Drinfeld modules . . . . .	15
<a href="#">02-01-0009</a>	6 <u>Xuanzhong Dai</u> (Kyoto Univ.) Bailin Song (Univ. of Sci. Tech. of China)	Chiral de Rham complex and the Rankin–Cohen brackets . . . . .	15
<a href="#">02-01-0046</a>	7 Masato Kobayashi (Kanagawa Univ.)	Ramanujan differential equations, signed Eisenstein series, Hankel de- terminants . . . . .	15
<a href="#">02-01-0050</a>	8 Tadaaki Igawa <u>Makoto Minamide</u> (Yamaguchi Univ.) Yoshio Tanigawa	On averages of indexes of congruence subgroups in the modular group II . . . . .	10

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

<a href="#">02-02-0003</a>	Masaya Yasuda (Rikkyo Univ.)	Introduction to mathematical cryptography: Lattice-based and isogeny- based cryptography	
----------------------------	------------------------------	---	--

## 15:30–18:00

<a href="#">02-01-0031</a>	9 Tomoyoshi Ibukiyama (Osaka Univ.*)	Genus character $L$ functions of quadratic orders in an adelic way . . . . .	10
<a href="#">02-01-0052</a>	10 Yuta Katayama (Tokyo Univ. of Sci.)	Hecke $L$ -functions of certain subextensions in an extraspecial extension . . . . .	15
<a href="#">02-01-0054</a>	11 <u>Shota Inoue</u> (Tokyo Tech) Junxian Li (Univ. Bonn)	Joint value distribution of Dirichlet $L$ -functions in the strip $1/2 < \sigma < 1$ . . . . .	15
<a href="#">02-01-0026</a>	12 Hirotaka Kobayashi (Nagoya Univ.)	On discrete mean-values of the Riemann zeta function . . . . .	10
<a href="#">02-01-0028</a>	13 Yoshiaki Okumura (Toyo Univ.)	Chebyshev’s bias for Fermat curves of odd prime degree . . . . .	10
<a href="#">02-01-0057</a>	14 <u>Shin-ya Koyama</u> (Toyo Univ.) Hana Tanaka (Gunma Pref. Oze High School)	Chebyshev’s bias for algebraic curves . . . . .	10
<a href="#">02-01-0045</a>	15 Yuichiro Toma (Nagoya Univ.)	A relation between multiple $L$ -functions and the confluent hypergeo- metric function . . . . .	10
<a href="#">02-01-0025</a>	16 Yuta Kadono (Tohoku Univ.)	Integral representation of Schur multiple zeta values and Kawashima function . . . . .	15
<a href="#">02-01-0020</a>	17 Masaki Kato (Toyama Nat. Coll. of Tech.)	$q$ - and elliptic analogues of inversion formulas for multiple polyloga- rithms . . . . .	15
<a href="#">02-01-0037</a>	18 Yuto Kawase (Kyoto Univ.)	Birkhoff’s variety theorem for relative algebraic theories . . . . .	15

## September 21st (Thu)

**9:15–10:45**

02-01-0003

- 19 Tomohiro Iwami (Kyushu Inst. of Tech.) Recovering conductor condition of ( $\mathbb{Q}$ -)conic bundles via three-dimensional Miyaoka–Yau type inequality with the associated third Chern classes ..... 15

02-01-0023

- 20 Masatomo Sawahara (Saitama Univ.) Cylindrical ample divisors on Du Val del Pezzo surfaces ..... 13

02-01-0039

- 21 Ken Sato (Tokyo Tech.)<sup>b</sup> On higher Chow cycles on Kummer surfaces ..... 15

02-01-0021

- 22 Kazuki Utsumi (Ritsumeikan Univ.) Mordell–Weil lattices of Inose surfaces ..... 15

02-01-0038

- 23 Natsuo Saito (Hiroshima City Univ.) On the Mordell–Weil group of some quasi-elliptic K3 surfaces ..... 15  
Yoshiki Ohtsu (Setouchi High School)  
Hiroyuki Ito (Tokyo Univ. of Sci.)

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

02-02-0001

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

**13:00–14:15**

02-01-0027

- 24 Linghu Fan (Univ. of Tokyo)<sup>b</sup> Crepant resolution of  $\mathbb{A}^4/A_4$  and its Euler number in characteristic 2 ..... 15

02-01-0018

- 25 Makoto Miura (Osaka Univ.) On the global connectedness of polytopes ..... 15

02-01-0017

- 26 Hiroshi Sato (Fukuoka Univ.) Anti-flips of the blow-ups of the projective spaces at torus invariant points ..... 10

02-01-0042

- 27 Hiroataka Onuki (Univ. of Tokyo) On Fujita’s freeness conjecture in mixed characteristic ..... 15

02-01-0053

- 28 Atsushi Noma (Yokohama Nat. Univ.) The number of the irreducible components of the locus of nonbirational projection centers ..... 10

## September 22nd (Fri)

**9:15–11:30**

02-01-0002

- 29 Sin Yi Tsang (Ochanomizu Univ.) A generalization of Ito’s theorem to skew braces ..... 15

02-01-0040

- 30 Kiyoto Yoshino (Hiroshima Inst. of Tech.) The Lemmens–Seidel conjecture for base size 5 ..... 15

02-01-0029

- 31 Hideya Watanabe (Osaka Metro. Univ.) On the stability of  $\iota$ canonical bases of locally finite type ..... 10

02-01-0030

- 32 Hideya Watanabe (Osaka Metro. Univ.) A branching rule from  $GL_{2n}(\mathbb{C})$  to  $Sp_{2n}(\mathbb{C})$  arising from the representation theory of quantum symmetric pairs ..... 10

02-01-0044

- 33 Toshitaka Aoki (Kobe Univ.) On interval global dimension of posets: a characterization of case 0 ..... 15  
Emerson Gaw Escobar (Kobe Univ.)  
Shunsuke Tada (Kobe Univ.)

02-01-0013

- 34 Yasuaki Gyoda (Univ. of Tokyo)<sup>b</sup> Bijection between support  $\tau$ -tilting modules of GLS path algebra and  $c$ -clusters in finite root system ..... 15

02-01-0006

- 35 Yuta Kozakai (Tokyo Univ. of Sci.) On the induction/restriction of support  $\tau$ -tilting modules ..... 10  
Ryotaro Koshio (Tokyo Univ. of Sci.)

02-01-0012

- 36 Ryuji Tanimoto (Shizuoka Univ.)<sup>b</sup> Representations of the additive group into Heisenberg groups in positive characteristic ..... 15

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

<a href="#">02-01-0055</a>	37 Ryota Wakao (Okayama Univ. of Sci.)	On integrals in low-dimensional Hopf superalgebras	10
<a href="#">02-01-0015</a>	38 Wenda Fang (Kyoto Univ.)	A new scheme of integrability via vertex algebra	15
<a href="#">02-01-0008</a>	39 Tomoyuki Arakawa (Kyoto Univ.) <u>Xuanzhong Dai</u> (Kyoto Univ.)	Quasi-lisse vertex algebras and chiral differential operators	15
<a href="#">02-01-0043</a>	40 Shun Furihata (Kyoto Univ.)	On the Beem–Nair conjecture	15
<a href="#">02-01-0047</a>	41 Ana Kontrec (Kyoto Univ.)	Zesting the minimal models	15
<a href="#">02-01-0048</a>	42 Masahiko Miyamoto (Univ. of Tsukuba)	Rationality of holomorphic vertex operator algebras	10
<a href="#">02-01-0049</a>	43 Masahiko Miyamoto (Univ. of Tsukuba)	Borchers’ Lie algebra and $C_2$ -cofiniteness of moonshine VOAs	15

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

<a href="#">02-02-0002</a>	Taiki Shibata (Okayama Univ. of Sci.)	Representations of algebraic supergroups	
----------------------------	---------------------------------------	--	--

## September 23rd (Sat)

**9:15–10:45**

<a href="#">02-01-0033</a>	44 Ayako Itaba (Tokyo Univ. of Sci.)	Quantum projective planes and Beilinson algebras of 3-dimensional quantum polynomial algebras for Type S’	15
<a href="#">02-01-0032</a>	45 <u>Masaki Matsuno</u> (Tokyo Univ. of Sci.) Yu Saito (Shizuoka Univ.)	Classification of 3-dimensional cubic Artin–Schelter regular algebras of Type S	15
<a href="#">02-01-0041</a>	46 <u>Mayu Tsukamoto</u> (Yamaguchi Univ.) Takahide Adachi (Yamaguchi Univ.)	A construction of mixed stratified algebras	15
<a href="#">02-01-0007</a>	47 Yuya Otake (Nagoya Univ.)	Ext modules related to syzygies of the residue field	15
<a href="#">02-01-0010</a>	48 Kaito Kimura (Nagoya Univ.)	Vanishing of Ext modules and Auslander–Reiten conjecture over normal rings	15

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

<a href="#">02-02-0004</a>	Haruhisa Enomoto (Osaka Metro. Univ.)	On some classes of subcategories of abelian categories	
----------------------------	--	--	--

**14:15–17:00**

<a href="#">02-01-0058</a>	49 <u>Maiko Ono</u> (Okayama Univ. of Sci.) Saeed Nasseh (Georgia Southern Univ.) Yuji Yoshino (Okayama Univ.)	On a obstruction class to naive liftability	15
<a href="#">02-01-0016</a>	50 <u>Ken-ichi Yoshida</u> (Nihon Univ.) Tomohiro Okuma (Yamagata Univ.) Kei-ichi Watanabe (Nihon Univ./Meiji Univ.)	Gorenstein normal tangent cones	10
<a href="#">02-01-0005</a>	51 Naoki Endo (Meiji Univ.)	Graded ideals whose quotient rings are Gorenstein	15

<a href="#">02-01-0036</a>			
52	Kazuho Ozeki (Nihon Univ.)	The first Euler characteristic and the depth of associated graded rings .....	15
<a href="#">02-01-0011</a>			
53	Koji Matsushita (Osaka Univ.)	Nearly Gorensteinness of Ehrhart rings .....	15
<a href="#">02-01-0034</a>			
54	Sora Miyashita (Osaka Univ.)	Nearly Gorenstein projective monomial curves of small codimension .....	15
<a href="#">02-01-0056</a>			
55	Mitsuhiro Miyazaki (Kyoto Univ. of Edu.)	The flaw of the h-vector of a standard graded Cohen–Macaulay domain may be arbitrarily deep .....	15
<a href="#">02-01-0024</a>			
56	<u>Kohji Yanagawa</u> (Kansai Univ.) Xin Ren (Kansai Univ.)	Gröbner bases of radical Li–Li type ideals associated with partitions .....	15
<a href="#">02-01-0019</a>			
57	Yuta Kambe (Mitsubishi Electric Corp.)	Analysis of the computation of Gröbner bases and Gröbner degenerations via theory of signatures .....	15

# Geometry

September 20th (Wed)

## 9:30–11:45

03-01-0005

- 1 Yusei Aoki (Nagoya Inst. of Tech.) Trajectories on nonflat complex space forms and those on their real  
Toshiaki Adachi (Nagoya Inst. of Tech.) hypersurfaces of type (A) ..... 15

03-01-0019

- 2 Naotoshi Fujihara (Tokyo Univ. of Sci.) Graph-preserving property and long-time existence of mean curvature  
flows on warped product manifolds ..... 15

03-01-0023

- 3 Hirotaka Kiyohara (Hokkaido Univ.) Construction of minimal null scrolls in the three-dimensional Heisenberg  
group ..... 15

03-01-0027

- 4 Yuta Sasahara (Tokyo Metro. Univ.) Inhomogeneous isoparametric hypersurfaces of OT-FKM-type in the  
pseudo-sphere ..... 15

03-01-0031

- 5 Jun Matsumoto (Tokyo Tech) The classification of complete improper affine fronts of low total curva-  
ture in affine three space  $\mathbf{R}^3$  and new examples ..... 15

03-01-0032

- 6 Masahiro Morimoto Non-existence of exceptional orbits under polar actions on Hilbert spaces  
(Tokyo Metro. Univ.) ..... 15

03-01-0037

- 7 Shuhei Yonehara (Osaka Univ.) On submanifolds of generalized contact manifolds ..... 15

## 14:15–16:15

03-01-0014

- 8 Fumika Mizoguchi (Osaka Metro. Univ.) Nilpotent Lie algebras obtained by quivers and Ricci solitons ..... 15  
Hiroshi Tamaru (Osaka Metro. Univ.)

03-01-0024

- 9 Ye Zhang The  $h$ -logconcavity breaking by the Dirichlet heat flow on the Heisen-  
(Okinawa Inst. of Sci. and Tech. Grad. Univ.) berg group ..... 15

03-01-0025

- 10 Hiroyuki Tasaki Maximal antipodal sets of classical compact symmetric spaces III ..... 15  
(Tokyo Metro. Univ./Univ. of Tsukuba)  
Makiko Sumi Tanaka  
(Tokyo Univ. of Sci.)

03-01-0026

- 11 Yoshihiro Ohnita Totally complex submanifolds and  $R$ -spaces ..... 15  
(Waseda Univ./Osaka Metro. Univ.)  
Jong Taek Cho (Chonnam Nat. Univ.)  
Kaname Hashimoto  
(Yamato Univ./Osaka Metro. Univ.)

03-01-0034

- 12 Isami Koga Equivariant harmonic maps of the complex projective spaces into the  
(Math. Res. Inst. Calc for Industry/Hiroshima Univ.) quaternion projective space ..... 15  
Yasuyuki Nagatomo (Meiji Univ.)

03-01-0035

- 13 Yusuke Shinoda (Okayama Univ.) Another proof of the Myers–Steenrod theorem for Finsler manifolds  
Kei Kondo (Okayama Univ.) from geodesic theory ..... 15

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

03-02-0001

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

## September 21st (Thu)

**9:40–11:30**

03-01-0001

14 Hiroaki Izumi (Hiroshima Univ.) New micro-macro dynamical systems ..... 15

03-01-0002

15 Yoichi Maeda (Tokai Univ.) Circles centered at centroid and orthocenter ..... 10

Koichi Okada

Sin Hitotumatu (Kyoto Univ.\*)

03-01-0003

16 Yoichi Maeda (Tokai Univ.) Locus of viewpoints from which a conic appears circular ..... 10

Makoto Kishine

(St. Viator Rakusei Junior and Senior High School)

03-01-0007

17 Naoyuki Kanomata Exact solutions and perturbative calculations of finite  $\Phi^3$ - $\Phi^4$  hybrid-matrix-model ..... 15

(Tokyo Univ. of Sci.)

Akifumi Sako (Tokyo Univ. of Sci.)

03-01-0015

18 Dounnu Sasaki (Gakushuin Univ.) Counting subgroups and subset currents ..... 15

03-01-0028

19 Kenzi Satô (Tamagawa Univ.) Centroids of hyperbolic simplices and Minkowski theorem on Minkowski spaces ..... 15

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

## September 22nd (Fri)

**9:30–11:45**

03-01-0006

20 Masao Jinzenji (Okayama Univ.) Geometrical proof of generalized mirror transformation of projective hypersurfaces ..... 15

03-01-0010

21 Hiroshi Sawai Non-Vaisman LCK structures on a solvmanifold constructed by a 2-step nilpotent Lie group ..... 15

(Numazu Nat. Coll. of Tech.)

03-01-0011

22 Satoshi Nakamura (Tokyo Tech) Calabi type functionals for coupled Kähler–Einstein metrics ..... 15

03-01-0013

23 Kazuyuki Hasegawa (Kanazawa Univ.) The H/Q-correspondence and a generalization of the supergravity c-map ..... 15

Vicente Cortés (Univ. of Hamburg)

03-01-0016

24 Rei Murakami (Tohoku Univ.)  $J$ -equations on fiber spaces ..... 15

03-01-0017

25 Natsuo Miyatake (Tohoku Univ.) Generalization of the Hermitian–Einstein equation for cyclic Higgs bundles using subharmonic functions and a priori estimates of the solutions to the equation ..... 15

03-01-0020

26 Takahiro Aoi A conical approximation of constant scalar curvature Kähler metrics of Poincaré type and log K-semistability ..... 15

(Nat. Inst. of Tech., Wakayama Coll.)

**14:15–16:15**

03-01-0004

27 Shota Hamanaka Upper bound preservation of the total scalar curvature in a conformal class ..... 15

(Mitsubishi Electric Corp. Adv. Tech. R&amp;D Center)

03-01-0008

28 Homare Tadano (Yamaguchi Univ.) Myers-type theorems via  $m$ -Bakry–Émery Ricci curvatures of quadratic decays ..... 15

03-01-0009

29 Homare Tadano (Yamaguchi Univ.) Myers-type theorems via  $m$ -Bakry–Émery Ricci curvatures of quartic decays ..... 15

03-01-0018

30 Junya Takahashi (Tohoku Univ.) Small eigenvalues of the Hodge–Laplacian with sectional curvature bounded below ..... 15

Colette Anné (Univ. de Nantes)

03-01-0033

- 31 Kaori Yamaguchi (Ritsumeikan Univ.) On statistics which are almost sufficient from the viewpoint of the  
Hiraku Nozawa (Ritsumeikan Univ.) Fisher metrics ..... 15

03-01-0036

- 32 Yasuaki Fujitani (Osaka Univ.) Aronson–Bénilan gradient estimates for porous medium equations under  
lower bounds of  $N$ -weighted Ricci curvature with  $N < 0$  ..... 15

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

03-02-0003

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

September 23rd (Sat)

**9:30–10:45**

03-01-0021

- 33 Asuka Takatsu (Tokyo Metro. Univ.)<sup>b</sup> Riemannian starshape and capacity problems ..... 15  
Kazuhiro Ishige (Univ. of Tokyo)  
Paolo Salani (Univ. di Firenze)

03-01-0022

- 34 Asuka Takatsu (Tokyo Metro. Univ.)<sup>b</sup> On geometric properties of sliced Monge–Kantorovich metrics ..... 15  
Jun Kitagawa (Michigan State Univ.)

03-01-0029

- 35 Tadashi Fujioka (Osaka Univ.) Quantitative Lipschitz homotopy convergence of Alexandrov spaces .. 15  
Ayato Mitsuishi (Fukuoka Univ.)  
Takao Yamaguchi (Univ. of Tsukuba\*)

03-01-0030

- 36 Tadashi Fujioka (Osaka Univ.) Euler characteristics of collapsing Alexandrov spaces ..... 15

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

03-02-0002

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

# Complex Analysis

September 20th (Wed)

## 9:30–11:30

- 04-01-0006  
1 Rikio Yoneda (Kanazawa Univ.) Composition operators between the Hardy space  $H^p$  and the Bergman spaces  $L_a^q$  ..... 15
- 04-01-0007  
2 Katsunori Shimomura (Ibaraki Univ.) A remark on the dual spaces of bi-parabolic Bergman spaces ..... 15  
Yôsuke Hishikawa (Gifu Univ.)  
Masaharu Nishio (Chubu Univ.)  
Masahiro Yamada (Gifu Univ.)
- 04-01-0017  
3 Yoshihiko Shinomiya (Shizuoka Univ.) Period matrices of  $L$ -shapes ..... 15
- 04-01-0019  
4 Gou Nakamura (Aichi Inst. of Tech.) Weierstrass points of the complex double for non-orientable extremal surfaces of genus 3 ..... 15
- 04-01-0014  
5 Ryo Matsuda (Kyoto Univ.) Maximal cusps are not dense ..... 15
- 04-01-0004  
6 Hiroshige Shiga (Kyoto Sangyo Univ.) Quasicircles and Dirichlet finite harmonic functions on Riemann surfaces ..... 15
- 04-01-0005  
7 Hiroshige Shiga (Kyoto Sangyo Univ.) Uniform domains and generalized Cantor sets ..... 15
- 14:15–15:15**
- 04-01-0002  
8 Shunji Horiguchi Generalized Mandelbrot sets by  $z_{k+1} = (z_k^m + c)^n$  ..... 15
- 04-01-0010  
9 Takumi Yagi (Kyoto Univ.) Connectedness and hyperbolicity of perturbations of semi-parabolic Hénon maps ..... 15
- 04-01-0012  
10 Yûsuke Okuyama (Kyoto Inst. Tech.) A local a priori bound for endomorphisms of the projective spaces ..... 15
- 04-01-0003  
11 Takanori Ayano (Osaka Metro. Univ.) Difference between the solutions for the inversion problem of the hyper-elliptic integrals of genus 2 ..... 15

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

- 04-02-0002  
Michio Seto Holomorphic functions vs positive definite matrices  
(Nat. Defense Acad. of Japan)

September 21st (Thu)

## 9:30–11:30

- 04-01-0001  
12 Shun Sugiyama An open set satisfying a local intermediate Cousin-I condition in a complex space ..... 15  
(Nat. Inst. of Tech., Kitakyushu Coll.)
- 04-01-0008  
13 Katsusuke Nabeshima A new look at Yano–Kato method for computing  $s$ -parametric annihilators ..... 15  
(Tokyo Univ. of Sci.)  
Shinichi Tajima (Niigata Univ.\*)
- 04-01-0009  
14 Shinichi Tajima (Niigata Univ.\*) Testing tameness of a complex polynomial map via comprehensive Gröbner systems ..... 15  
Katsusuke Nabeshima  
(Tokyo Univ. of Sci.)
- 04-01-0015  
15 Jinichiro Tanaka (Osaka Metro. Univ.) Generalizations of the Bochner–Martinelli kernel to complex abelian Lie groups ..... 15

04-01-0018

- 16 Satoshi Ogawa (Osaka Metro. Univ.) Full linearization along a compact complex curve and Brjuno like condition of unitary flat line bundles ..... 15

04-01-0016

- 17 Masanori Adachi (Shizuoka Univ.) A residue formula for meromorphic connections and applications to stable sets of foliations ..... 15  
 Séverine Biard  
 (Univ. Polytechnique Hauts-de-France)  
 Judith Brinkschulte (Univ. Leipzig)

04-01-0013

- 18 Takeo Ohsawa (Nagoya Univ.\* )<sup>b</sup> On the Levi problem under the negativity of canonical bundles on the boundary ..... 15

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

04-02-0001

- Taiji Marugame Hyperkähler ambient metrics associated with twistor CR manifolds  
 (Univ. of Electro-Comm.)

# Functional Equations

September 20th (Wed)

**9:00–12:00**

05-01-0080

- 1 Haru Negami (Chiba Univ.) Katz–Long–Moody construction of braid group representations and multiplicative middle convolution of KZ equation ..... 10

05-01-0026

- 2 Kazuki Hiroe (Chiba Univ.)  
Yasunori Okada (Chiba Univ.)  
Ken Shibusawa (Chiba Univ.) On an extension of contiguity relations for the solution spaces of the confluent hypergeometric system of Kummer type ..... 10

05-01-0078

- 3 Takashi Aoki (Kindai Univ.)  
Toshinori Takahashi  
(Kwansei Gakuin Univ.)  
Mika Tanda (Kwansei Gakuin Univ.) The relation between the hypergeometric function and WKB solutions ..... 10

05-01-0067

- 4 Toshinori Takahashi  
(Kwansei Gakuin Univ.)  
Mika Tanda (Kwansei Gakuin Univ.) Relation between the standard solutions of the hypergeometric differential equation and WKB solutions with a simple-pole-type turning point ..... 10

05-01-0085

- 5 Sunao Ōuchi (Sophia Univ.\*) Remarks on Cauchy problem in function spaces with asymptotic expansions with respect to time variable  $t$  ..... 10

05-01-0010

- 6 Kazuki Ishibashi  
(Hiroshima Inst. of Tech.) Nonoscillation of the Mathieu-type half-linear differential equation ... 10

05-01-0023

- 7 Hiroyuki Usami (Gifu Univ.)  
Manabu Naito (Ehime Univ.\*) On asymptotic behavior of solutions of half-linear ordinary differential equations ..... 10

05-01-0011

- 8 Masafumi Yoshino (Hiroshima Univ.) Summability of transseries solution of Hamiltonian system ..... 10

05-01-0081

- 9 Masakazu Onitsuka  
(Okayama Univ. of Sci.) Stability regions for discrete diamond-alpha operator ..... 10

05-01-0005

- 10 Yuki Hata  
Hideaki Matsunaga  
(Osaka Metro. Univ.) Delay-dependent stability switches in a delay differential system ..... 10

05-01-0001

- 11 Tetsutaro Shibata (Hiroshima Univ.) Asymptotic behavior of solution curves of nonlocal one-dimensional elliptic equations ..... 10

05-01-0082

- 12 Naoki Hamamoto (Osaka Metro. Univ.) The Poincaré constant for solenoidal fields on the ball ..... 10

05-01-0068

- 13 Hiroshi Ando (Ibaraki Univ.)  
Toshio Horiuchi (Ibaraki Univ.\*)  
Eiichi Nakai (Ibaraki Univ.\*) On the critical Caffarelli–Kohn–Nirenberg type inequalities involving super-logarithms ..... 10

05-01-0019

- 14 Ryuji Kajikiya  
(Osaka Electro-Comm. Univ.)  
Mieko Tanaka (Tokyo Univ. of Sci.)  
Satoshi Tanaka (Tohoku Univ.) Radial eigenvalues for the  $p$ -Laplacian, I. Asymptotic behavior ..... 10

05-01-0020

- 15 Ryuji Kajikiya  
(Osaka Electro-Comm. Univ.)  
Mieko Tanaka (Tokyo Univ. of Sci.)  
Satoshi Tanaka (Tohoku Univ.) Radial eigenvalues for the  $p$ -Laplacian, II. Monotonicity ..... 10

**14:15–16:30**

05-01-0071

- 16 Shuhei Kitano (Waseda Univ.) Harnack inequalities and Hölder estimates for fully nonlinear integral equations with weak scaling conditions ..... 10

05-01-0035

- 17 Mieko Tanaka (Tokyo Univ. of Sci.) Multiplicity of solutions for  $(p, q)$ -Laplace equations with two parameters ..... 10  
Vladimir Bobkov  
 (Ufa Federal Research Cente)

05-01-0079

- 18 Kenta Kumagai (Tokyo Tech) Classification of boundedness of extremal solutions to semilinear elliptic equations with weighted terms ..... 10

05-01-0027

- 19 Shinji Adachi (Shizuoka Univ.) Existence of ground state solutions for a class of semilinear elliptic equations involving Sobolev critical term ..... 10  
Tatsuya Watanabe  
 (Kyoto Sangyo Univ.)

05-01-0022

- 20 Kazuhiro Takimoto (Hiroshima Univ.) Higher order estimate near the boundary of a large solution to semilinear Poisson equation with double-power like nonlinearity ..... 10  
Yuxiao Zhang (Hiroshima Univ.)

05-01-0052

- 21 Anna Dall'Acqua (Ulm Univ.) An obstacle problem for the  $p$ -elastic energy ..... 10  
Marius Müller (Leipzig Univ.)  
Shinya Okabe (Tohoku Univ.)  
Kensuke Yoshizawa (Kyushu Univ.)

05-01-0045

- 22 Tatsuya Miura (Tokyo Tech) Optimal thresholds for preserving embeddedness of elastic flows ..... 10  
Marius Müller (Univ. Leipzig)  
Fabian Rupp (Univ. Vienna)

05-01-0056

- 23 Tatsuya Miura (Tokyo Tech) Migrating elastic flows ..... 10  
Tomoya Kemmochi (Nagoya Univ.)

05-01-0002

- 24 Yoshihiro Tonegawa (Tokyo Tech) End-time regularity theorem for Brakke flows ..... 10  
Salvatore Stuvard (Univ. Milan)

05-01-0050

- 25 Shuntaro Tsubouchi (Univ. of Tokyo) Gradient continuity for anisotropic singular equations ..... 10

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

05-02-0001

- Yoshihisa Miyanishi (Shinshu Univ.) Spectral theory of layer potential type operators and its applications

September 21st (Thu)

**9:00–12:00**

05-01-0021

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

05-01-0054

- 27 Kana Minami (Nara Women's Univ.) Long-time asymptotic profile of the  $n$ -dimensional heat equation ..... 10  
Taku Yanagisawa  
 (Nara Women's Univ.)

05-01-0029

- 28 Ryunosuke Kusaba (Waseda Univ.) Commutator estimates between the heat semigroup and monomial weights and its application ..... 10  
Tohru Ozawa (Waseda Univ.)

05-01-0014

- 29 Taiki Takeuchi (Waseda Univ.) Breakdown of  $C^\infty$ -smoothing effects for the Fujita type equation ..... 10

05-01-0048

- 30 Mizuki Kojima (Tokyo Tech) On solvability of a time-fractional semilinear heat equation, and its quantitative approach to the classical counterpart ..... 10  
Kotaro Hisa (Tohoku Univ.)

05-01-0046	31 Junichi Harada (Akita Univ.)	Asymptotic behavior of blowup solutions to complex valued semilinear heat equations for complex time . . . . .	10
05-01-0004	32 Takashi Suzuki (Osaka Univ.) Katsuyuki Ishii (Kobe Univ.)	Formation of blowup and quenching patterns in parabolic equations . . . . .	5
05-01-0076	33 Kawai Satoshi (SOLIZE Corp.) Masaki Ohnuma (Tokushima Univ.)	A lemma for a strong comparison principle of a nonlinear parabolic equation . . . . .	10
05-01-0084	34 Mario Fuest (Leibniz Univ. Hannover) Johannes Lankeit (Leibniz Univ. Hannover) Masaaki Mizukami (Kyoto Univ. of Edu.)	Possible points of blow-up in a fully parabolic chemotaxis system with environmental dependent logistic source . . . . .	10
05-01-0024	35 Mario Fuest (Leibniz Univ. Hannover) Johannes Lankeit (Leibniz Univ. Hannover) Yuya Tanaka (Tokyo Univ. of Sci.)	Occurrence of a critical mass phenomenon in a higher dimensional quasilinear Keller–Segel system with indirect signal production . . . . .	10
05-01-0032	36 Takeshi Suguro (Osaka Metro. Univ.)	Well-posedness of the Cauchy problem of a drift-diffusion equation in amalgam spaces . . . . .	10
05-01-0025	37 Shohei Kohatsu (Tokyo Univ. of Sci.) Johannes Lankeit (Leibniz Univ. Hannover)	Transient growth phenomena in a two-species chemotaxis-competition model on domains without radial symmetry . . . . .	10
05-01-0018	38 Yuta Ishii (Ibaraki Nat. Coll. of Tech.)	On the existence of spiky stationary solutions for the Schnakenberg model with advection term on the $Y$ -shaped metric graph . . . . .	10
<b>13:00–14:00 Talk Invited by Functional Equations Section</b>			
05-02-0004	Yoshihito Kohsaka (Kobe Univ.)	A threshold-type approximation algorithm for the Willmore flow	

## September 22nd (Fri)

**9:15–12:00**

05-01-0086	39 Yuki Tsukamoto (Meiji Univ.)	Convergence of the fast reaction limit . . . . .	10
05-01-0041	40 Hiroko Sekisaka (Yamamoto) (RIKEN) Ayuki Sekisaka (Meiji Univ.)	Reaction-diffusion approximation of nonlocal reaction-diffusion equation . . . . .	10
05-01-0058	41 Ryu Fujiwara (Meiji Univ.)	Steady state to the nonlocal Allen–Cahn equation with unbounded kernel . . . . .	10
05-01-0062	42 Masaharu Taniguchi (Okayama Univ.)	A traveling front solution whose cross section has any given major axis and any given minor axis in balanced reaction-diffusion equations . . . . .	10
05-01-0066	43 Masahiko Shimojo (Tokyo Metro. Univ.) Jong-Shenq Guo (Tamkang Univ.) Karen Guo (Providence Univ.)	Forced waves for diffusive competition systems in shifting environments . . . . .	10
05-01-0047	44 Tatsuki Mori (Musashino Univ.) Kousuke Kuto (Waseda Univ.) Tohru Tsujikawa (Univ. of Miyazaki*/Meiji Univ.) Shoji Yotsutani (Ryukoku Univ.*)	Exact solutions of full stationary problems for a cell polarization model . . . . .	10

- 05-01-0049  
45 Yohei Sato (Saitama Univ.) Even ground state for nonlinear Schrödinger systems with mixed couplings on  $\mathbb{R}^N$  ..... 10
- 05-01-0017  
46 Mathieu Colin (Univ. of Bordeaux) Stable standing waves for a Schrödinger system with nonlinear  $\chi^3$  response ..... 10  
Tatsuya Watanabe  
(Kyoto Sangyo Univ.)
- 05-01-0015  
47 Satoshi Masaki (Hokkaido Univ.) On the existence and the shape of the standing wave solutions to a class of systems of nonlinear Schrödinger equations ..... 10
- 05-01-0008  
48 Ryusei Yamashita (Tokyo Metro. Univ.) A remark on the local uniqueness by the monotonicity based method for the magnetic Schrödinger equation ..... 10
- 05-01-0074  
49 Keiichi Kato (Tokyo Univ. of Sci.) Estimates on modulation spaces for solutions to Schrödinger equations with spatially decaying magnetic fields ..... 10  
Ryo Muramatsu (Tohoku Univ.)
- 05-01-0040  
50 Jumpei Kawakami (Kyoto Univ.) Global approximation for the cubic NLS with strong magnetic confinement ..... 10
- 05-01-0033  
51 Shun Tshuhara (Tohoku Univ.) Well-posedness of nonlinear Schrödinger equation on the two dimensional half-plane with a nonlinear Neumann boundary condition ..... 10  
Takayoshi Ogawa (Tohoku Univ.)  
Takuya Sato (Kumamoto Univ.)
- 14:15–16:30**
- 05-01-0013  
52 Kenta Tomioka (Waseda Univ.) The global well-posedness of the initial boundary value problem for nonlinear dispersive systems ..... 10  
Tohru Ozawa (Waseda Univ.)
- 05-01-0042  
53 Takuya Sato (Kumamoto Univ.) Asymptotic behavior of large solutions to dissipative nonlinear Schrödinger equations in the analytic class ..... 10
- 05-01-0053  
54 Masaru Hamano (Waseda Univ.) Scattering and blow-up solutions to energy critical NLS with an inverse square potential ..... 10  
Masahiro Ikeda (RIKEN/Keio Univ.)
- 05-01-0060  
55 Koichi Komada (Chukyo Univ.) Scattering problem for fourth-order nonlinear Schrödinger equations in one dimension ..... 10  
Satoshi Masaki (Hokkaido Univ.)
- 05-01-0077  
56 Ikki Fukuda (Shinshu Univ.) Large time behavior and optimal decay estimate for solutions to the generalized Zakharov–Kuznetsov–Burgers equation ..... 10  
Hiroyuki Hirayama (Univ. of Miyazaki)
- 05-01-0055  
57 Kouichi Taira (Ritsumeikan Univ.) Strichartz estimates for  $(k, a)$ -generalized Laguerre operators ..... 10  
Hiroyoshi Tamori  
(Shibaura Inst. of Tech.)
- 05-01-0059  
58 Makoto Ikoma (Nagoya Univ.) Optimal constants of smoothing estimates for the 2-dimensional Dirac equation ..... 10  
Soichiro Suzuki (Chuo Univ.)
- 05-01-0051  
59 Kotaro Inami (Nagoya Univ.) The equivalence of an energy decay for damped Klein–Gordon type equations and the geometric condition for damping coefficients ..... 10  
Soichiro Suzuki (Chuo Univ.)
- 05-01-0061  
60 Mamoru Okamoto (Osaka Univ.) On the solution of the cubic nonlinear Klein–Gordon equation with Gaussian random initial data ..... 10  
Tadahiro Oh (Univ. of Edinburgh)  
Nikolay Tzvetkov  
(École Normale Supérieure de Lyon)
- 05-01-0064  
61 Yoshinori Nishii (Tokyo Univ. of Sci.) Upper and lower bounds for energy of small solutions to semilinear wave equations with weakly dissipative structure ..... 10  
Yuji Sagawa (Kumamoto Univ.)  
Takuya Sato (Kumamoto Univ.)

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

05-02-0002

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

September 23rd (Sat)

**9:30–12:00**

05-01-0072

- 62 Shunsuke Kitamura (Tohoku Univ.) Instant blow-up of solutions of one-dimensional semilinear wave equations with increasing spatial weights ..... 10

05-01-0065

- 63 Shu Takamatsu (Tohoku Univ.) The lifespan of classical solutions of one dimensional wave equation with semilinear terms of the spatial derivative ..... 10  
Takiko Sasaki (Musashino Univ./Tohoku Univ.)  
Hiroyuki Takamura (Tohoku Univ.)

05-01-0043

- 64 Mishio Kawashita (Hiroshima Univ.) Asymptotic behavior of the indicator function in the inverse problem of the wave equation for media with multiple types of cavities ..... 10  
Wakako Kawashita (Hiroshima Univ.)

05-01-0031

- 65 Tomoyuki Oka (Univ. of Tokyo) Space-time quasi-periodic homogenization for damped wave equations ..... 10

05-01-0003

- 66 Motohiro Sobajima (Tokyo Univ. of Sci.) On the lifespan of solutions to the critical semilinear damped wave equation in an 2d-exterior domain ..... 10  
Masahiro Ikeda (RIKEN)  
Koichi Taniguchi (Tohoku Univ.)  
Yuta Wakasugi (Hiroshima Univ.)

05-01-0036

- 67 Kagei Yoshiyuki (Tokyo Tech) Stability of time periodic solution of nonlinear elastic wave equations with viscoelastic terms ..... 10  
Hiroshi Takeda (Fukuoka Inst. of Tech.)

05-01-0028

- 68 Yoshiyuki Kagei (Tokyo Tech) Eckhaus instability of compressible Taylor vortices ..... 10

05-01-0016

- 69 Hideo Kozono (Waseda Univ./Tohoku Univ.) Liouville-type theorems for the Taylor–Couette flow of the stationary Navier–Stokes equations ..... 10  
Yutaka Terasawa (Nagoya Univ.)  
Yuta Wakasugi (Hiroshima Univ.)

05-01-0063

- 70 Kai Koike (Tokyo Tech) Asymptotic expansion of solutions to 1D compressible Navier–Stokes equations with space-time pointwise estimates ..... 10

05-01-0012

- 71 Itsuko Hashimoto (Kanazawa Univ.) Inviscid limit problem of radially symmetric stationary solutions for compressible Navier–Stokes equation ..... 10  
Akitaka Matsumura (Osaka Univ.\*)

05-01-0075

- 72 Mikihiro Fujii (Kyushu Univ.) Ill-posedness of the two-dimensional stationary Navier–Stokes equations on the whole plane ..... 10

05-01-0034

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

**14:15–16:00**

05-01-0044

- 74 Naoto Deguchi (Tokyo Tech) Stability analysis for stationary solutions of the compressible Navier–Stokes equation ..... 10

05-01-0069

- 75 Ryosuke Nakasato (Shinshu Univ.) Long time behavior of solutions to the compressible Navier–Stokes–Korteweg equations in critical spaces ..... 10  
Takayuki Kobayashi (Osaka Univ.)

05-01-0007

- 76 Masakazu Yamamoto (Niigata Univ.) Time evolution of the incompressible Navier–Stokes flow in far-field ..... 10

05-01-0006

- 77 Masatoshi Okita (Kurume Nat. Coll. of Tech.) On the blow-up criterion for the Navier–Stokes equations with critical time order ..... 10

05-01-0037

- 78 Jou-chun Kuo (Waseda Univ.) Maximal  $L^1$  regularity for the compressible Stokes equations ..... 10

05-01-0038

- 79 Yoshihiro Shibata (Suwa Univ. of Sci.) Maximal  $L_1$ -regularity of the Navier–Stokes equations with free boundary conditions: Local well-posedness ..... 10

05-01-0039

- 80 Yoshihiro Shibata (Suwa Univ. of Sci.) Maximal  $L_1$ -regularity of the Navier–Stokes equations with free boundary conditions: Global well-posedness ..... 10

05-01-0030

- 81 Keiichi Watanabe (Suwa Univ. of Sci.) Large time behavior of the Stokes semigroup in exterior Lipschitz domains ..... 10

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

05-02-0003

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

# Real Analysis

September 22nd (Fri)

## 9:00–12:00

06-01-0003

- 1 Yukino Tomizawa (Niigata Inst. of Tech.) Weak uniform convexity of complete Busemann spaces ..... 15

06-01-0004

- 2 Yasunori Kimura (Toho Univ.) Convex minimization problems and approximation to their solutions on complete geodesic spaces ..... 15

06-01-0013

- 3 Hiroko Manaka (Nihon Univ.) Convergence theorems with some projections in Banach spaces ..... 15

06-01-0023

- 4 Sachiko Atsushiba (Tokyo Woman's Christian Univ.) Attractive points, fixed points and convergence theorems for monotone Lipschitzian mappings ..... 15

06-01-0028

- 5 Shin-ya Matsushita (Akita Pref. Univ.) Primal-dual splitting algorithm and its applications ..... 15

06-01-0006

- 6 Satoshi Yamaguchi (Ibaraki Univ.)  
Eiichi Nakai (Ibaraki Univ.)  
Katsunori Shimomura (Ibaraki Univ.) Bi-preduals of generalized Campanato spaces with variable growth condition ..... 15

06-01-0011

- 7 Mathav Murugan (Univ. of British Columbia)  
Ryosuke Shimizu (Waseda Univ.) Construction and regularity of first-order Sobolev spaces on the planar Sierpiński carpet ..... 15

06-01-0014

- 8 Naoya Hatano (Chuo Univ.)  
Ryota Kawasumi  
Hiroki Saito (Nihon Univ.)  
Hitoshi Tanaka (Tsukuba Univ. of Tech.) Fractional operators on weak Choquet spaces with Hausdorff capacities ..... 15

06-01-0015

- 9 Toru Nogayama (Chuo Univ.) Littlewood–Paley characterization for mixed Morrey spaces ..... 15

## 12:15–12:45 Presentation Ceremony for the 2023 MSJ Analysis Prize

## 14:15–15:25

06-01-0017

- 10 Ryota Kawasumi (RIKEN)  
Masahiro Ikeda (Ehime Univ.) Boundedness of composition operators on Orlicz–Morrey spaces ..... 15

06-01-0024

- 11 Hiroki Saito (Nihon Univ.) Some embedding inequalities for fractional Sobolev spaces ..... 15

06-01-0001

- 12 Takeshi Iida (Fukushima Nat. Coll. of Tech.) Remarks on the fractional operators on Orlicz–Morrey spaces ..... 15

06-01-0007

- 13 Jun Kawabe (Shinshu Univ.) Topological and linear topological properties of the Sugeno–Lorentz spaces ..... 15

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

06-02-0001

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

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

06-02-0002

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

## September 23rd (Sat)

**9:30–12:00**

06-01-0026

- 14 Goro Akagi (Tohoku Univ.) Yoshihito Nakajima (Tohoku Univ.) Global solutions for evolution equations involving fractional time-derivatives and their decay rates ..... 15

06-01-0010

- 15 Akiko Morimura (Japan Women's Univ.) Toyohiko Aiki (Japan Women's Univ.) Weak solutions for nonlinear parabolic equations with non-monotone boundary conditions ..... 15

06-01-0029

- 16 Daiki Mizuno (Chiba Univ.) Ken Shirakawa (Chiba Univ.) Well-posedness result for a pseudo-parabolic dissipation system of KWC energy ..... 15

06-01-0012

- 17 Noboru Isobe (Univ. of Tokyo) On a gradient flow modeling a learning process of deep neural networks in a metric space and its convergence ..... 15

06-01-0020

- 18 Takanori Ebata (Niigata Univ.) Hiroki Ohwa (Niigata Univ.) Continuous dependence on the initial and flux functions for solutions of balance laws ..... 15

06-01-0005

- 19 Yutaro Chiyo (Tokyo Univ. of Sci.) Kazuma Sugawara (Tokyo Univ. of Sci.) Tomomi Yokota (Tokyo Univ. of Sci.) Global existence of classical solutions to an indirect chemotaxis-consumption model with signal-dependent sensitivity ..... 15

06-01-0021

- 20 Chiharu Kosugi (Yamaguchi Univ.) Existence and uniqueness weak solutions for the energy conservation system representing motions of elastic curve on the plane ..... 15

06-01-0018

- 21 Makoto Okumura (Konan Univ.) Takeshi Fukao (Ryukoku Univ.) Structure-preserving numerical schemes for the Cahn–Hilliard equation with dynamic boundary conditions in two spatial dimensions ..... 15

**14:15–16:25**

06-01-0022

- 22 Yoshiho Akagawa (Gifu Nat. Coll. of Tech.) Risei Kano (Kochi Univ.) Takeshi Fukao (Ryukoku Univ.) Continuous dependence of a perfect plasticity model ..... 15

06-01-0009

- 23 Kosuke Kita (Waseda Univ.) Ôtani Mitsuharu (Waseda Univ.) On global and blow-up solutions to nonlinear heat equations with nonlinear boundary conditions ..... 15

06-01-0008

- 24 Shun Uchida (Oita Univ.) Mitsuharu Ôtani (Waseda Univ.) Sufficient condition of maximality of sum of monotone operators ..... 15

06-01-0016

- 25 Hiroshi Watanabe (Oita Univ.) Ken Shirakawa (Chiba Univ.) J. Salvador Moll (Univ. València) Asymptotic behavior of solutions to a 3D-model associated with grain boundary motion ..... 15

06-01-0027

- 26 Kota Kumazaki (Kyoto Univ. of Edu.) Adrian Muntean (Karlstad Univ.) Global solutions to a multiscale model describing swelling phenomenon in porous materials ..... 15

06-01-0025

- 27 Takeshi Fukao (Ryukoku Univ.) Pierluigi Colli (Univ. of Pavia) Vanishing viscosity for the Cahn–Hilliard equation on the boundary ..... 15

06-01-0019

- 28 Masahiro Kubo (Wakayama Univ.) Noriaki Yamazaki (Kanagawa Univ.) Elliptic-parabolic quasi-variational evolution equations ..... 15

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

06-02-0003

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

# Functional Analysis

September 20th (Wed)

## 10:00–12:00

07-01-0006

- 1 Yuto Miyadera (Saitama Univ.) Remark on the formula for  $L^p$  norm characterized by weak  $L^p$  norm ..... 15

07-01-0004

- 2 Shosuke Omori (Gunma Nat. Coll. of Tech./Waseda Univ.) On the spectral decomposition of quasi-Hermitian operator based on rigged Hilbert space ..... 15  
Junichi Takahashi (Waseda Univ.)

07-01-0009

- 3 Masaki Kawamoto (Ehime Univ.) Nonexistence of wave operators for sub-quadratic repulsive potential ..... 15  
Atsuhide Ishida (Tokyo Univ. of Sci.)

07-01-0014

- 4 Hisashi Morioka (Ehime Univ.) A study of shape resonances for quantum walks via the complex translation method ..... 15  
Kenta Higuchi (Ehime Univ.)

07-01-0017

- 5 Itaru Sasaki (Shinshu Univ.) On the scattering theory of the pair interaction model ..... 15  
Yasumichi Matsuzawa (Shinshu Univ.)  
Shinnosuke Izumi (Shinshu Univ.)  
Kouta Imura (Nagano Pref. Fujimi High School)

07-01-0020

- 6 Vincent Louatron (Ritsumeikan Univ.) Semiclassical resonances for matrix Schrödinger operators with vanishing interactions at crossings of classical trajectories ..... 15

07-01-0026

- 7 Kenta Higuchi (Ehime Univ.) Local scattering matrix for a degenerate avoided-crossing in the non-coupled regime ..... 15

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

07-02-0001

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

September 21st (Thu)

## 9:30–11:15

07-01-0016

- 8 Yoritaka Iwata (Osaka Univ. of Economics Law) Cumulant generating function in infinite-dimensional abstract spaces based on the logarithmic representation of unbounded operators ..... 15

07-01-0024

- 9 Ryo Tabata (Ariake Nat. Coll. of Tech.) Matrix Identities Corresponding to Plethysm ..... 15

07-01-0007

- 10 Akifumi Nakada (Hiroshima Univ.) The Delsarte theory for probability measures on homogeneous spaces from compact Gelfand pairs ..... 15

07-01-0012

- 11 Ryosuke Nakahama (NTT Inst. for Funda. Math.) Symmetry breaking operators of holomorphic discrete series representations for  $(SU(3, 3), SO^*(6))$  ..... 15

07-01-0023

- 12 Takahiro Nagaoka (Akihito Wachi (Hokkaido Univ. of Edu.) The strong Lefschetz property of Gorenstein algebras generated by relative invariants ..... 15

07-01-0013

- 13 Akihito Hora (Hokkaido Univ.) Application of spin Jucys–Murphy elements of symmetric groups to dynamical spin limit shapes ..... 15

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

07-02-0002

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

September 22nd (Fri)

**9:30–11:00**

07-01-0003

- 14 Hiroshi Ando (Chiba Univ.) Common transversals for coset spaces of compact groups ..... 15  
 Andreas Thom (TU Dresden)

07-01-0002

- 15 Kan Kitamura (Univ. of Tokyo) Discrete quantum subgroups of complex semisimple quantum groups ..... 15

07-01-0025

- 16 Masato Tanaka (Nagoya Univ.) Cocycles on quantum groups ..... 15

07-01-0027

- 17 Toshihiko Masuda (Kyushu Univ.) Actions of discrete amenable groups into the normalizers of full groups of ergodic transformations ..... 15

07-01-0005

- 18 Masaru Nagisa (Ritsumeikan Univ.) Non-linear Choquet traces on compact algebras —dual norms, quasi norms— ..... 15  
 Yasuo Watatani (Kyushu Univ.\*)

**14:15–16:00**

07-01-0018

- 19 Shigeru Furuichi (Nihon Univ.) Operator inequalities between geometric mean and spectral geometric mean ..... 15

07-01-0011

- 20 Yuki Seo (Osaka Kyoiku Univ.) The Hadamard product of positive invertible operators and Karcher geometric mean ..... 15

07-01-0015

- 21 Hiroaki Tohyama (Maebashi Inst. of Tech.) Operator valued inequalities based on Young’s inequality ..... 15  
 Eizaburo Kamei  
 Masayuki Watanabe (Maebashi Inst. of Tech.)

07-01-0001

- 22 Michiya Mori (Univ. of Tokyo/RIKEN) Nonexpansive and noncontractive mappings on the set of quantum pure states ..... 15  
 Peter Šemrl (Univ. of Ljubljana)

07-01-0021

- 23 Takeshi Miura (Niigata Univ.) Tingley’s problem for Banach spaces with differential structures ..... 15  
 Yuta Enami (Niigata Univ.)

07-01-0010

- 24 Osamu Hatori (Niigata Univ.\*) The Mazur–Ulam property for spaces of harmonic functions ..... 15

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

07-02-0003

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

## Statistics and Probability

September 20th (Wed)

### 9:30–11:30

- [08-01-0033](#)  
1 Yuto Nakagawa (Tohoku Univ.) Consideration of eigenvalues and multiplicity of stochastic matrix using left regular band ..... 15
- [08-01-0013](#)  
2 Yuichi Shiozawa (Osaka Univ.)  
Jian Wang (Fujian Normal Univ.) Hausdorff dimensions of inverse images and collision time sets for symmetric Markov processes ..... 15
- [08-01-0003](#)  
3 Yuji Hamana (Univ. of Tsukuba) Hitting times of hyperbolic Bessel processes ..... 10
- [08-01-0005](#)  
4 Yuji Hamana (Univ. of Tsukuba) Brownian hitting to spheres ..... 15  
Hiroyuki Matsumoto  
(Aoyama Gakuin Univ.)
- [08-01-0024](#)  
5 Tomohiro Aya (Kyoto Univ.) Quantitative stochastic homogenization of elliptic equations with unbounded coefficients ..... 15
- [08-01-0026](#)  
6 Yushi Hamaguchi (Osaka Univ.) Markovian lifting and asymptotic log-Harnack inequality for stochastic Volterra integral equations ..... 15
- [08-01-0027](#)  
7 Masahisa Ebina (Kyoto Univ.) Central limit theorems for stochastic wave equations in high dimensions ..... 15
- [08-01-0034](#)  
8 Makiko Sasada (Univ. of Tokyo) Yang–Baxter maps and independence preserving property ..... 15  
Ryosuke Uozumi (Univ. of Tokyo)

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

- [08-02-0004](#)  
Kouhei Matsuura (Univ. of Tsukuba) Discrete approximation of reflected Brownian motions by Markov chains on partitions of domains

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

- [08-02-0002](#)  
Ryuya Namba (Kyoto Sangyo Univ.) Limit theorems for random walks on nilpotent covering graphs

September 21st (Thu)

### 9:30–11:30

- [08-01-0022](#)  
9 Atsushi Komaba (Univ. of Yamanashi)  
Hisashi Johno (Univ. of Yamanashi)  
Kazunori Nakamoto  
(Univ. of Yamanashi) An application of the method of images in calculations on the range of a one-dimensional simple random walk ..... 15
- [08-01-0017](#)  
10 Noe Kawamoto (Hokkaido Univ.) Rate of convergence of the critical point of the memory- $\tau$  self-avoiding walk in dimensions  $d > 4$  ..... 15
- [08-01-0020](#)  
11 Naoki Kubota (Nihon Univ.)  
Masato Takei (Yokohama Nat. Univ.) Comparison of limit shapes for Bernoulli first-passage percolation ..... 10
- [08-01-0018](#)  
12 Shigeyoshi Ogawa (Ritsumeikan Univ.) Noncausal calculus approach to Wong–Zakai’s theorem on the approximation of SDE ..... 15
- [08-01-0006](#)  
13 Toru Sera (Osaka Univ.) Large deviations related to arcsine laws for intermittent maps ..... 15
- [08-01-0010](#)  
14 Yuto Nakajima (Keio Univ.) Mandelbrot set for fractal  $n$ -gons and zeros of power series ..... 15

08-01-0007		
15	Yuki Ueda (Hokkaido Univ. of Edu.) Octavio Arizmendi (CIMAT) Katsunori Fujie (Hokkaido Univ.)	Limit theorems and new combinatorial identities in finite free probability theory ..... 15
08-01-0004		
16	Tomoyuki Terada (Kanazawa Inst. of Tech.) Yusuke Ide (Nihon Univ.) Norio Konno (Ritsumeikan Univ./Yokohama Nat. Univ.*)	Return probabilities for random walks and quantum walks on the path graph ..... 15

**11:30–12:00 Research Section Assembly**

September 22nd (Fri)

**9:30–11:30**

08-01-0035		
17	Hirofumi Wakaki (Hiroshima Univ.)	On model selection criteria for mixed linear models for longitudinal data. .... 15
08-01-0041		
18	Hiroki Masuda (Univ. of Tokyo) Yuki Fujinaga (Kyushu Univ.)	Asymptotic inference for a non-Gaussian location-scale mixed-effects model ..... 15
08-01-0008		
19	Takuma Yoshida (Kagoshima Univ.)	Asymptotic properties of generalized additive models in extreme value theory ..... 15
08-01-0016		
20	Eri Kurita (Tokyo Univ. of Sci.) Takashi Seo (Tokyo Univ. of Sci.)	Multivariate kurtosis test for multivariate normality with monotone missing data ..... 15
08-01-0030		
21	Shogo Nakakita (Univ. of Tokyo)	Langevin-type Monte Carlo algorithm for non-log-concave non-smooth distributions ..... 15
08-01-0037		
22	Shogo Nakakita (Univ. of Tokyo)	Uniform estimates for the ergodicity of a class of stochastic differential equations with jumps ..... 15
08-01-0031		
23	Teruo Tanaka (Hiroshima City Univ.)	On some fractional optimal stopping problems ..... 10
08-01-0040		
24	Toshiharu Fujita (Kyushu Inst. of Tech.)	Stochastic decision process model with feedforward loop system — Uncertain state occurrence order— ..... 15

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

08-02-0001	Daisuke Kurisu (Univ. of Tokyo)	Modeling and statistical inference for nonstationary spatial data
------------	---------------------------------	---

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

08-02-0003	Ayaka Sakata (Inst. of Stat. Math.)	Probabilistic inference with graphical models for regression problems
------------	-------------------------------------	---

September 23rd (Sat)

**9:30–11:30**

08-01-0042		
25	Keita Nakamura (Yokohama City Univ.) Tomoyuki Nakagawa (Meisei Univ.) Kouji Tahata (Tokyo Univ. of Sci.)	Quasi-symmetry and geometric marginal homogeneity in square contingency tables using Aitchison geometry ..... 15
08-01-0032		
26	Hisaya Okahara (Tokyo Univ. of Sci.) Kengo Fujisawa (Tokyo Univ. of Sci., Yamaguchi) Kouji Tahata (Tokyo Univ. of Sci.)	An asymmetry model based on $f$ -divergence for multi-way contingency tables with ordered categories ..... 15

08-01-0039	27 Kazuki Matsubara (Saitama Univ.)	A new method for constructing additive BIB designs . . . . .	15
08-01-0029	28 Shoko Chisaki (Osaka Inst. of Tech.) Ryoh Fuji-Hara (Univ. of Tsukuba*) Nobuko Miyamoto (Tokyo Univ. of Sci.)	A construction of regular spanning bipartite block designs . . . . .	10
08-01-0014	29 Xiao-Nan Lu (Gifu Univ.) Miwako Mishima (Gifu Univ.) Nobuko Miyamoto (Tokyo Univ. of Sci.) Masakazu Jimbo (Inst. of Stat. Math.)	An algebraic sufficient condition for a circulant almost orthogonal array to be D-optimal . . . . .	15
08-01-0025	30 Kento Egashira (Tokyo Univ. of Sci.) Kazuyoshi Yata (Univ. of Tsukuba) Makoto Aoshima (Univ. of Tsukuba)	High-dimensional asymptotic properties of k-means and hierarchical clustering . . . . .	15
08-01-0028	31 Yumu Iwana (Univ. of Tsukuba) Kazuyoshi Yata (Univ. of Tsukuba) Aki Ishii (Tokyo Univ. of Sci.) Makoto Aoshima (Univ. of Tsukuba)	Correlation test for high-dimensional correlation matrix under the strongly spiked eigenvalue model . . . . .	15
08-01-0002	32 Koji Tsukuda (Kyushu Univ.) Shun Matsuura (Keio Univ.)	On testing the hypothesis of the allometric extension model in high-dimensional settings . . . . .	15
<b>14:15–16:20</b>			
08-01-0009	33 Shuhei Mano (Inst. of Stat. Math.) Masayo Y. Hirose (Kyushu Univ.)	On a quasi-linear partial differential equation of the first order appears in estimation and the solution with differential geometry . . . . .	15
08-01-0021	34 Kou Fujimori (Shinshu Univ.) Koji Tsukuda (Kyushu Univ.)	The Dantzig selector for semiparametric models of stochastic processes . . . . .	15
08-01-0036	35 Noboru Nomura (Kochi Univ.)	Integral calculation for orthant probability with polar coordinates . . . .	15
08-01-0038	36 Shogo Nakakita (Univ. of Tokyo) Pierre Alquier (ESSEC Business School) Masaaki Imaizumi (Univ. of Tokyo)	Dimension-free concentration inequalities for sums of weakly dependent random matrices . . . . .	15
08-01-0015	37 Xiaoqiang Zeng (Hokkaido Univ.) Yoshihide Kakizawa (Hokkaido Univ.)	On two-step CLS estimation in stationary ADCINAR(1) process, revisited . . . . .	15
08-01-0011	38 Yuichi Goto (Kyushu Univ.) Xuze Zhang (Maryland Univ.) Benjamin Kedem (Maryland Univ.) Shuo Chen (Maryland Univ.)	Test for the existence of the residual spectrum . . . . .	15
08-01-0019	39 Yan Liu (Waseda Univ.) U Lan (Waseda Univ.) Masanobu Taniguchi (Waseda Univ.)	Semiparametric empirical likelihood for circular distributions . . . . .	15
08-01-0023	40 Fumiya Akashi (Univ. of Tokyo)	Multivariate median based estimation methods for low-rank VAR models . . . . .	15

# Applied Mathematics

September 20th (Wed)

## 9:30–11:50

- 09-01-0009  
1 Naoki Matsumoto (Univ. of Ryukyus) Game connectivity of graphs ..... 15  
Tomoki Nakamigawa  
(Shonan Inst. of Tech.)
- 09-01-0012  
2 Kiyoshi Yoshimoto (Nihon Univ.) On connectivities of edge-colored graphs ..... 15
- 09-01-0014  
3 Kiyoshi Ando (Nat. Inst. of Informatics) A constructive characterization of 4-connected 4-regular graphs ..... 15
- 09-01-0060  
4 Daiki Takahashi (Yokohama Nat. Univ.) 2-Connected spanning subgraphs of 3-connected planar graph ..... 15
- 09-01-0023  
5 Sho Kubota (Osaka Inst. of Tech.) Mixed strongly regular graphs to induce periodic quantum walks ..... 15
- 09-01-0028  
6 Yusuke Yoshie  
(Ishikawa Nat. Coll. of Tech.) Periodicity of the Grover walk and graph structure ..... 15
- 09-01-0053  
7 Hiroto Sekido (Yokohama Nat. Univ.) Regular graphs to induce Grover walks with even period ..... 15  
Sho Kubota (Osaka Inst. of Tech.)  
Kiyoto Yoshino  
(Hiroshima Inst. of Tech.)
- 09-01-0030  
8 Takako Endo(Watanabe) Bipartite walks on bipartite graphs ..... 15  
(Tohoku Univ.)  
Takashi Komatsu (Univ. of Yamanashi)  
Norio Konno  
(Ritsumeikan Univ./Yokohama Nat. Univ.\*)  
Iwao Sato (Oyama Nat. Coll. of Tech.)

## 14:15–16:10

- 09-01-0015  
9 Taisuke Hosaka (Yokohama Nat. Univ.) Parrondo's game of quantum search based on quantum walk ..... 10  
Norio Konno  
(Ritsumeikan Univ./Yokohama Nat. Univ.\*)
- 09-01-0025  
10 Akihiro Narimatsu A spectral analysis of the Correlated Random Walk ..... 15  
(Univ. of Fukuchiyama)  
Yusuke Ide (Nihon Univ.)
- 09-01-0037  
11 Takako Endo (Tohoku Univ.) Spectra of non-unitary one-dimensional quantum walks with a pertur-  
Yohei Matsumoto (Shinshu Univ.) bation at the origin. .... 15  
Akito Suzuki (Shinshu Univ.)
- 09-01-0002  
12 Tomohiro Kamiyoshi On some equations of unified Stirling numbers obtained from exponen-  
(Matsue Coll. of Tech.) tial recursive matrices ..... 15  
Makoto Nagura  
(Osaka Electro-Comm. Univ.)  
Otani Shin-ich (Kanto Gakuin Univ.)
- 09-01-0024  
13 Yuuya Yoshida (Nagoya Inst. of Tech.) On the number of linearly independent product vectors in subspaces  
over finite fields ..... 15

- 09-01-0055  
14 Eiichi Bannai (Kyushu Univ.\*) Multivariate  $P$ - and/or  $Q$ -polynomial association schemes ..... 15  
Hirotake Kurihara (Yamaguchi Univ.)  
Da Zhao (Kyoto Univ.)  
Yan Zhu  
(Univ. of Shanghai for Sci. Tech.)
- 09-01-0058  
15 Shuhei Tsujie (Hokkaido Univ. of Edu.) On correspondence between MAT partitions of free graphic hyperplane  
Hung Manh Tran arrangements and local regular vines ..... 15  
(National Univ. of Singapore)  
Tan Nhat Tran  
(Leibniz Univ. Hannover)

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

- 09-02-0001  
Shoichi Tsuchiya (Senshu Univ.) HISTs and Halin graphs

September 21st (Thu)

**9:30–11:30**

- 09-01-0005  
16 Shinya Fujita (Yokohama City Univ.) Orientations for properly ordered coloring on vertex weighted trees ... 10  
Remiko Iida (Yokohama City Univ.)  
Shun-ichi Maezawa  
(Tokyo Univ. of Sci.)
- 09-01-0019  
17 Kuniharu Yokomura (Tokai Univ.) On degree conditions of semi-balanced 3-partite Hamiltonian graphs  
..... 15
- 09-01-0061  
18 Takafumi Saikawa (Nagoya Univ.) Formalization of matching theory in Coq ..... 15  
Yosuke Tsuji (Kitami Inst. of Tech.)  
Kazunori Matsuda  
(Kitami Inst. of Tech.)
- 09-01-0021  
19 Iwao Sato (Oyama Nat. Coll. of Tech.) CTM/Zeta correspondence ..... 15  
Takashi Kmatsu (Univ. of Yamanashi)  
Norio Konno  
(Ritsumeikan Univ./Yokohama Nat. Univ.\*)
- 09-01-0042  
20 Kohei Sato (Oyama Nat. Coll. of Tech.) Ronkin/Zeta correspondence ..... 15  
Takashi Komatsu (Univ. of Yamanashi)  
Norio Konno  
(Ritsumeikan Univ./Yokohama Nat. Univ.\*)  
Iwao Sato (Oyama Nat. Coll. of Tech.)
- 09-01-0044  
21 Takashi Komatsu (Univ. of Yamanashi) Mahler/Zeta correspondence ..... 15  
Norio Konno  
(Ritsumeikan Univ./Yokohama Nat. Univ.\*)  
Iwao Sato (Oyama Nat. Coll. of Tech.)  
Shunya Tamura (Yokohama Nat. Univ.)
- 09-01-0049  
22 Hikari Sakamoto (Kanagawa Univ.) A property of the summation of random variables determined by the  
Norio Konno Konno distribution ..... 15  
(Ritsumeikan Univ./Yokohama Nat. Univ.\*)  
Kei Saito (Kanagawa Univ.)

**13:00–14:15**

09-01-0008

23 Madoka Awada (Waseda Univ.) A note on  $t$ -designs in isodual codes ..... 15

09-01-0033

24 Masatake Hirao (Aichi Pref. Univ.) Spherical designs and modular forms of the  $D_4$  lattice ..... 15  
Hiroshi Nozaki (Aichi Univ. of Edu.)  
Koji Tasaka (Aichi Pref. Univ.)

09-01-0052

25 Kenji Tanino (Kobe Univ.) An upper bound for the degree of a certain type of  $B_d$ -invariant weighted  
Masanori Sawa (Kobe Univ.) spherical designs ..... 15  
Masatake Hirao (Aichi Pref. Univ.)

09-01-0057

26 Teruyuki Mishima (Kobe Univ.) The problem of the existence of centrally symmetric rational designs  
Masanori Sawa (Kobe Univ.) ..... 15  
Yukihiro Uchida (Tokyo Metro. Univ.)

## September 22nd (Fri)

**9:30–12:00**

09-01-0029

27 Noboru Ito (Ibaraki Nat. Coll. of Tech.) Integrating curvature and quantizing Arnold strangeness invariant  
..... 15

09-01-0039

28 Kamolphet Intawong Application of linking number theory to authentication technology ... 15  
(Ibaraki Nat. Coll. of Tech.)

09-01-0035

29 Takuya Nakagawa (Ritsumeikan Univ.) Existence of density functions for the running maximum of SDEs by  
non-truncated pure-jump Lévy processes. .... 15

09-01-0016

30 Itsuki Watanabe (Waseda Univ.) Markov chain approximation for Hamilton–Jacobi–Bellman equation  
with absorbing boundary ..... 15

09-01-0034

31 Emerson Gaw Escobar (Kobe Univ.) A topological analysis of the space of recipes ..... 15  
Masahiro Yuasa (Kobe Univ.)

09-01-0047

32 Shoya Motonaga (Ritsumeikan Univ.) Nonintegrability of nearly integrable dynamical systems near regular  
level sets ..... 15  
Kazuyuki Yagasaki (Kyoto Univ.)

09-01-0045

33 Koya Sakakibara Regularization by Bregman divergence of optimal transport on finite  
(Kanazawa Univ./RIKEN) sets ..... 15

Asuka Takatsu

(Tokyo Metro. Univ./RIKEN)

Keiichi Morikuni (Univ. of Tsukuba)

09-01-0051

34 Baige Xu (Kobe Univ.) Classification of variables using Groebner basis for analysis of peripheral  
Takaharu Yaguchi (Kobe Univ.) blood hematopoietic stem cell mobilization data ..... 15  
Yoshio Katayama (Kobe Univ.)

09-01-0046

35 Tetsuya Ishiwata Discrete holomorphicity and a discrete version of Cauchy's integral  
(Shibaura Inst. of Tech.) formula ..... 15  
Koya Sakakibara (Kanazawa Univ.)**14:15–16:30**

09-01-0059

36 Kota Ohno (Chuo Univ.) The characteristic of the limit cycle and the growth of the chimera state  
Toshiyuki Ogawa (Meiji Univ.) in coupled oscillator system ..... 15

- 09-01-0004  
37 Mamoru Aizawa (Meiji Univ.) Mathematical model to describe the material properties of paste-like artificial bone ..... 15  
Yu Ichida (Meiji Univ.)  
Yuki Kamaya (Meiji Univ.)  
Shiori Kato (Meiji Univ.)  
Minami Kosuge (Meiji Univ.)  
Takashi Sakamoto (Meiji Univ.)  
Rika Yamada (Meiji Univ.)  
Shigetoshi Yazaki (Meiji Univ.)
- 09-01-0003  
38 Yu Ichida (Meiji Univ.) Classification of traveling wave solutions for certain degenerate parabolic equations and the bifurcation at infinity ..... 15  
Takashi Sakamoto (Meiji Univ.)
- 09-01-0032  
39 Koichi Anada A Remark on traveling wave solutions for a quasi-linear parabolic partial differential equation ..... 15  
(Waseda Univ. Senior High School)  
Tetsuya Ishiwata  
(Shibaura Inst. of Tech.)  
Takeo Ushijima (Tokyo Univ. of Sci.)
- 09-01-0041  
40 Junyong Eom (Hokkaido Univ.) Local analysis for locating a single point target in time-domain fluorescence diffuse optical tomography ..... 15  
Nakamura Gen (Hokkaido Univ.)  
Goro Nishimura (Hokkaido Univ.)  
Chunlong Sun  
(Nanjing Univ. of Aeronautics and Astronautics)
- 09-01-0031  
41 Yoshitaro Tanaka Keller–Segel type approximation for nonlocal Fokker–Planck equations in one-dimensional bounded domain ..... 15  
(Future Univ.-Hakodate)  
Hideki Murakawa (Ryukoku Univ.)
- 09-01-0036  
42 Kota Ikeda (Meiji Univ.) Existence of traveling wave solutions in continuous OV models ..... 15  
Toshiyuki Ogawa (Meiji Univ.)  
Toru Kan (Osaka Metro. Univ.)
- 09-01-0001  
43 Yoshihisa Morita (Ryukoku Univ.\*) Time backward profile of entire solutions to the bistable reaction-diffusion equation on unbounded metric graphs ..... 15
- 16:45–17:45 Award Lecture for the 2022 Applied Mathematics Prize**  
09-02-0002  
Shin-ichiro Ei (Hokkaido Univ.) On pattern formation problem and its contraction

September 23rd (Sat)

**9:30–12:00**

- 09-01-0056  
44 Masaki Imagawa (Kyoto Univ.) Convergence rates of an elliptic regularization applied to a stationary advection equation ..... 15  
Daisuke Kawagoe (Kyoto Univ.)
- 09-01-0062  
45 Sohei Tasaki (Hokkaido Univ.) Eigenpairs of the linear elasticity operator on the disk ..... 15
- 09-01-0017  
46 Takashi Sakajo (Kyoto Univ.) Statistical laws of a one-dimensional turbulence model as a random PDE ..... 15  
Yuta Tsuji
- 09-01-0018  
47 Takashi Sakajo (Kyoto Univ.) The hydrodynamic Green's function and point vortex dynamics in a doubly periodic domain ..... 15  
Vikas Krishnamurthy  
(Indian Inst. of Tech. Hyderabad)

<a href="#">09-01-0026</a>			
48	<a href="#">Takaaki Nishida</a> (Kyoto Univ.*) <a href="#">Hiroshi Fujiwara</a> (Kyoto Univ.) <a href="#">Chun-Hsiung Hsia</a> (National Taiwan Univ.)	Thermohaline convections in the horizontal layer with non-uniform heat supply .....	15
<a href="#">09-01-0006</a>			
49	<a href="#">Hidenori Ogata</a> (Univ. of Electro-Comm.)	The usage of the IMT-type variable transformation in numerical computations .....	15
<a href="#">09-01-0040</a>			
50	<a href="#">Kazuki Koga</a> (Tokyo Tech)	On weak comparisons between the sphere and its approximations .....	15
<a href="#">09-01-0048</a>			
51	<a href="#">Fuminori Sakaguchi</a> (Univ. of Fukui)	Direct evaluation of the mean squares errors of an integer-type algorithm for ODEs .....	15
<a href="#">09-01-0013</a>			
52	<a href="#">Tokuhiro Eto</a> (Univ. of Tokyo) <a href="#">Yoshikazu Giga</a> (Univ. of Tokyo)	On a minimizing movement scheme for mean curvature flow with prescribed contact angle in a curved domain and its computation .....	15
<b>14:15–16:00</b>			
<a href="#">09-01-0043</a>			
53	<a href="#">Haruki Takemura</a> (Univ. of Tokyo) <a href="#">Takahito Kashiwabara</a> (Univ. of Tokyo)	Convergence analysis of CIP method for the one-dimensional advection equation .....	15
<a href="#">09-01-0038</a>			
54	<a href="#">Ryoki Endo</a> (Niigata Univ.) <a href="#">Xuefeng Liu</a> (Niigata Univ.)	Verified computation for shape derivative of the Laplacian eigenvalues .....	15
<a href="#">09-01-0007</a>			
55	<a href="#">Yuki Chiba</a> (Univ. of Tokyo) <a href="#">Norikazu Saito</a> (Univ. of Tokyo)	Nitsche’s method for a Robin boundary value problem in a smooth domain .....	15
<a href="#">09-01-0010</a>			
56	<a href="#">Makoto Mizuguchi</a> (Chuo Univ.) <a href="#">Mitsuhiro T. Nakao</a> (Waseda Univ.) <a href="#">Kouji Hashimoto</a> (Nakamura Gakuen Univ.) <a href="#">Kouta Sekine</a> (Chiba Inst. of Tech.) <a href="#">Shin’ichi Oishi</a> (Waseda Univ.)	The quantitative error estimates for a full-discrete approximate solution .....	15
<a href="#">09-01-0022</a>			
57	<a href="#">Gabriel W. Duchesne</a> (McGill Univ.) <a href="#">Jean-Philippe Lessard</a> (McGill Univ.) <a href="#">Akitoshi Takayasu</a> (Univ. of Tsukuba)	Computer-assisted proofs for global existence of solutions to semilinear parabolic equations .....	15
<a href="#">09-01-0011</a>			
58	<a href="#">Yoshitaka Watanabe</a> (Kyushu Univ.) <a href="#">Tomoyuki Miyaji</a> (Kyoto Univ.)	Computer-assisted proofs of unimodality of solutions for Proudman–Johnson equation .....	15
<b>16:15–17:15 Talk Invited by Applied Mathematics Section</b>			
<a href="#">09-02-0003</a>			
	<a href="#">Kenta Ishimoto</a> (Kyoto Univ.)	Jeffery’s orbits and hydrodynamic shape of life	

# Topology

September 20th (Wed)

## 9:30–12:00

10-01-0017

- 1 Masaaki Suzuki (Meiji Univ.) On the minimal order of knots ..... 10  
Takayuki Morifuji (Keio Univ.)

10-01-0014

- 2 Yasutaka Nakanishi (Kobe Univ.\*) Colors of virtual tangles ..... 15  
Shin Satoh (Kobe Univ.)

10-01-0018

- 3 Takuji Nakamura (Univ. of Yamanashi) Virtualized  $\Delta$ -moves for virtual knots and links ..... 10  
Yasutaka Nakanishi (Kobe Univ.)  
Shin Satoh (Kobe Univ.)  
Kodai Wada (Kobe Univ.)

10-01-0032

- 4 Atsuhiko Mizusawa (Waseda Univ.) A classification of the component-homotopy classes of spatial graphs ..... 15  
Yuka Kotorii  
(Hiroshima Univ./RIKEN)

10-01-0024

- 5 Koki Yanagida (Tokyo Tech) Parabolic Dijkgraaf–Witten invariants of links ..... 15

10-01-0020

- 6 Jun Murakami (Waseda Univ.) From bottom tangle to  $A_q$  polynomial ..... 15

10-01-0019

- 7 Hajime Kubota (Kyoto Univ.) A combinatorial proof of the connected sum formula for knot Floer homology ..... 15

10-01-0029

- 8 Yasuharu Nakae (Akita Univ.) A construction of epimorphisms between groups of fibered knots that preserve a meridian but the image of its longitude is killed ..... 15  
Teruaki Kitano (Soka Univ.)

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

10-02-0001

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

## 15:40–17:30

10-01-0003

- 9 Michihiko Fujii (Univ. of Ryukyus) The spherical growth series of amalgamated free products of infinite cyclic groups ..... 15  
Takuya Sakasai (Univ. of Tokyo)

10-01-0016

- 10 Chihaya Jibiki (Tokyo Tech) Left-orderings on inductive limits of amalgamated free products ..... 15

10-01-0008

- 11 Akihiro Takano (Univ. of Tokyo) The  $p$ -colorable subgroup of Thompson’s group  $F$  ..... 15  
Yuya Kodama (Tokyo Metro. Univ.)

10-01-0027

- 12 Yuya Kodama (Tokyo Metro. Univ.) Alexander’s theorem for stabilizer subgroups of Thompson’s group ... 15  
Akihiro Takano (Univ. of Tokyo)

September 21st (Thu)

## 9:30–11:30

10-01-0010

- 13 Ryo Kato (Kochi Univ. of Tech.) The first cohomology of the monochromatic comodule  $M_{n-1}^1$  at any prime ..... 10  
Katsumi Shimomura (Kochi Univ.)  
Maonosuke Shimomura (Kochi Univ.)

10-01-0011

- 14 Hiroki Okajima  $W$ -originated elements in the stable homotopy groups of spheres ..... 10  
Ryo Kato (Kochi Univ. of Tech.)  
Katsumi Shimomura (Kochi Univ.)

<a href="#">10-01-0012</a>	15 Ryo Kato (Kochi Univ. of Tech.)	Deformed cohomological Bousfield classes . . . . .	10
<a href="#">10-01-0013</a>	16 Ryo Kato (Kochi Univ. of Tech.)	A relation between Picard groups of some local categories . . . . .	10
<a href="#">10-01-0009</a>	17 <u>Kenshi Ishiguro</u> (Fukuoka Univ.) Makoto Yamagata (Fukuoka Univ.)	Genus problem of the classifying spaces . . . . .	10
<a href="#">10-01-0023</a>	18 <u>Hitoshi Moriyoshi</u> (Nagoya Univ.) Toshikazu Natsume (Nagoya Inst. of Tech.)	Corona index theorem for Cantor sets . . . . .	15
<a href="#">10-01-0025</a>	19 <u>Naotsugu Chinen</u> (Nat. Defense Acad. of Japan) Takamitsu Yamauchi (Ehime Univ.)	On equivariant asymptotic dimension of actions of discrete groups on non-compact Hausdorff spaces . . . . .	15
<b>13:00–14:00</b>			
<a href="#">10-01-0004</a>	20 <u>Masahiro Takeda</u> (Kyoto Univ.) Daisuke Kishimoto (Kyushu Univ.)	Torsion in the space of commuting elements in a Lie group . . . . .	15
<a href="#">10-01-0022</a>	21 Toshiyuki Akita (Hokkaido Univ.)	Embeddings of Alexander quandles into conjugation quandles . . . . .	10
<a href="#">10-01-0002</a>	22 Shunsuke Kano (Tohoku Univ.)	Train track combinatorics and cluster algebras . . . . .	15

## September 22nd (Fri)

**9:30–12:00**

<a href="#">10-01-0001</a>	23 Tatsumasa Suzuki (Tokyo Tech)	The $d$ -invariants of the Brieskorn homology spheres with almost simple linear graphs . . . . .	15
<a href="#">10-01-0028</a>	24 <u>Tatsumasa Suzuki</u> (Tokyo Tech) Motoo Tange (Univ. of Tsukuba)	The $d$ -invariant of any Brieskorn homology sphere . . . . .	15
<a href="#">10-01-0005</a>	25 <u>Tatsumasa Suzuki</u> (Tokyo Tech) Motoo Tange (Univ. of Tsukuba)	Pochette surgery along any ribbon 2-knot . . . . .	15
<a href="#">10-01-0026</a>	26 Sakumi Sugawara (Hokkaido Univ.)	Handle decompositions and Kirby diagrams for the complements of plane algebraic curves . . . . .	15
<a href="#">10-01-0033</a>	27 Minami Taniguchi (Tokyo Tech)	Kirby–Thompson invariants for knotted surfaces . . . . .	15
<a href="#">10-01-0021</a>	28 <u>Mizuki Fukuda</u> (AIST–Tohoku Univ.) Masaharu Ishikawa (Keio Univ.)	Distinguishing branched twist spins by fundamental groups . . . . .	15
<a href="#">10-01-0015</a>	29 Tsukasa Isoshima (Tokyo Tech)	Infinitely many standard trisection diagrams for Gluck twisting . . . . .	15
<a href="#">10-01-0007</a>	30 Natsuya Takahashi (Osaka Univ.)	Trisection genera for an exotic pair of 4-manifolds with boundary . . . . .	15

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

<a href="#">10-02-0002</a>	Kouichi Yasui (Osaka Univ.)	Smooth structures on 4-manifolds and genus functions	
----------------------------	-----------------------------	--	--

**15:40–17:00**

<a href="#">10-01-0006</a>	31 Genki Omori (Tokyo Univ. of Sci.)	A minimal generating set for the quasitoric braid group . . . . .	10
<a href="#">10-01-0030</a>	32 <u>Ryoma Kobayashi</u> (Ishikawa Nat. Coll. of Tech.) Nao Imoto	The level $d$ principal congruence subgroup of $SL(n; \mathbb{Z})$ . . . . .	10
<a href="#">10-01-0031</a>	33 Ryoma Kobayashi (Ishikawa Nat. Coll. of Tech.)	The level $d$ mapping class group of a non-orientable closed surface . . . . .	10

## Infinite Analysis

September 20th (Wed)

### 9:30–12:00

- [11-01-0002](#)  
1 Wenda Fang (Kyoto Univ.) Generalized AKS scheme of integrability via vertex algebra ..... 15
- [11-01-0001](#)  
2 Yousuke Ohyama (Tokushima Univ.) Global theory on  $q$ -Painlevé equations and special solutions ..... 15
- [11-01-0005](#)  
3 Kouichi Takemura (Ochanomizu Univ.) Kernel function,  $q$ -integral transformation and  $q$ -Heun equations ..... 15
- [11-01-0006](#)  
4 Tetsu Masuda (Aoyama Gakuin Univ.) Rational solutions to the  $q$ -Painlevé system of type  $E_7^{(1)}$  ..... 15  
Teruhisa Tsuda (Aoyama Gakuin Univ.)
- [11-01-0007](#)  
5 Hidehito Nagao (Akashi Coll. of Tech.) Multivariable generalization of the additive difference Painlevé equation with the affine Weyl group symmetry of type  $D_4^{(1)}$  ..... 15
- [11-01-0010](#)  
6 Takahiko Nobukawa (Kobe Univ.) Integral solutions and series solutions for the variant of the  $q$ -hypergeometric equation of degree three ..... 15  
Taikei Fujii (Kobe Univ.)
- [11-01-0011](#)  
7 Genki Shibukawa (Kobe Univ.) The generalized Zwegers'  $\mu$ -function and transformation formulas for the bilateral basic hypergeometric series ..... 15  
Satoshi Tsuchimi (Kobe Univ.)
- [11-01-0012](#)  
8 Hidetoshi Awata (Nagoya Univ.) Non-stationary difference equation, affine Laumon space and quantization of discrete Painlevé equation 1 ..... 15  
Koji Hasegawa (Tohoku Univ.)  
Hiroaki Kanno (Nagoya Univ.)  
Ryo Okawa (Osaka Metro. Univ./Kyoto Univ.)  
Shamil Shakirov (Univ. of Geneva)  
Jun'ichi Shiraishi (Univ. of Tokyo)  
Yasuhiko Yamada (Kobe Univ.)
- [11-01-0013](#)  
9 Hidetoshi Awata (Nagoya Univ.) Non-stationary difference equation, affine Laumon space and quantization of discrete Painlevé equation 2 ..... 15  
Koji Hasegawa (Tohoku Univ.)  
Hiroaki Kanno (Nagoya Univ.)  
Ryo Okawa (Osaka Metro. Univ./Kyoto Univ.)  
Shamil Shakirov (Univ. of Geneva)  
Jun'ichi Shiraishi (Univ. of Tokyo)  
Yasuhiko Yamada (Kobe Univ.)

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

- [11-02-0002](#)  
Saiei-Jaeyeong Matsubara-Heo Algebraic equations and hypergeometric equations  
(Kumamoto Univ./Kumamoto Univ.)

September 21st (Thu)

### 9:30–10:45

- [11-01-0009](#)  
10 Yas-Hiro Quano Causal inference in statistics and probability formulae for counterfact ..... 15  
(Suzuka Univ. of Med. Sci.)
- [11-01-0008](#)  
11 Allan John Gerrard Fundamentals of the nested algebraic Bethe ansatz ..... 15  
(Ochanomizu Univ.)

- [11-01-0014](#)  
 12 Masato Tanaka (Nagoya Univ.) A cocycle on the quantum deformation of the special linear group ···· 15
- [11-01-0003](#)  
 13 Hiroyuki Yamane (Univ. of Toyama) Hamiltonian cycles of Cayley graphs of Weyl groupoids ······ 15  
Takato Inoue (Univ. of Toyama)
- [11-01-0004](#)  
 14 Masato Okado (Osaka Metro. Univ.) Oscillator representations of quantum affine orthosymplectic superalgebras ······ 15  
Jae-Hoon Kwon (Seoul National Univ.)  
Sin-Myung Lee (Seoul National Univ.)
- 11:00–12:00 Talk Invited by Infinite Analysis Special Session**
- [11-02-0001](#)  
Makiko Sasada (Univ. of Tokyo) Discrete integrable systems from probabilistic perspectives