

## 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 \* means the presentation by using the document camera, and the mark † means the presentation by using only the blackboard. If you talk by using your PC/tablet, no mark is written.
- The mark ★ 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.

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# Foundation of Mathematics and History of Mathematics

September 26th (Wed)

## 9:30–11:25

- 01-99-0001 1 Takashi Oyabu <sup>b</sup> Continuum hypothesis and constructible set, and other 5 talks . . . . . 5
- 01-01-0005 2 Teruyuki Yorioka (Shizuoka Univ.) Fragments of Martin’s Axiom in the extension with random forcing . . . . . 15
- 01-01-0006 3 Yukinobu Yajima (Kanagawa Univ.) Undecidability of the cardinality of  $C^*$ -embedded discrete subsets in products of natural numbers . . . . . 15  
Yasushi Hirata (Kanagawa Univ.)
- 01-01-0009 4 Toshimichi Usuba (Waseda Univ.) Extendible cardinals and the mantle . . . . . 15
- 01-01-0010 5 Shunsuke Okabe (Kobe Univ.) On width of automorphism groups of countable structures with stationary independence relations . . . . . 15
- 01-01-0013 6 Masanori Itai (Tokai Univ.) A remark on geometric isomorphism and Morita equivalence . . . . . 15
- 01-01-0015 7 Hiroataka Kikyo (Kobe Univ.) On Hrushovski’s “pseudoplanes” . . . . . 15
- 01-01-0018 8 Koichiro Ikeda (Hosei Univ.) On strictly stable generic structures . . . . . 15

## 14:15–16:15

- 01-99-0003 9 Masaaki Kumazawa On the relationship between the existence of commutative elements and the existence of infimums in BCK-algebras . . . . . 10  
(Mino-Jiyu Gakuen High School)
- 01-01-0011 10 Nobu-Yuki Suzuki (Shizuoka Univ.) Remarks on disjunction property and its weak variants in intermediate predicate logics . . . . . 15
- 01-01-0007 11 Taishi Kurahashi Arithmetical completeness of the modal logic **KD** . . . . . 15  
(Nat. Inst. of Tech., Kisarazu Coll.)
- 01-01-0016 12 Makoto Kikuchi (Kobe Univ.) On the Frege–Hilbert controversy over the foundations of geometry . . . 15
- 01-01-0021 13 Kohtaro Tadaki (Chubu Univ.) A refinement of quantum mechanics by algorithmic randomness III: Its consequences . . . . . 15
- 01-01-0019 14 Kazuyuki Tanaka (Tohoku Univ.) Modal  $\mu$ -calculus and its one-variable hierarchy . . . . . 15  
Li Wenjuan (Nanyang Tech. Univ.)
- 01-01-0014 15 Satoru Kuroda Forcing in bounded arithmetic for small complexity classes . . . . . 15  
(Gunma Pref. Women’s Univ.)
- 01-01-0012 16 Mika Shigemizu (Tokyo Metro. Univ.) Independent distributions on a multi-branching AND-OR tree of height 2 . . . . . 15  
Toshio Suzuki (Tokyo Metro. Univ.)  
Koki Usami (Tokyo Metro. Univ.)

## 16:30–17:30 Talk Invited by Section on Foundation and History of Mathematics

- 01-02-0002 Kojiro Higuchi (Nihon Univ.) Computable prestructures

## September 27th (Thu)

**9:00–10:50**

01-01-0002

17 Shigeru Masuda (Res. Workshop of Classical Fluid Dynamics) Poisson' "sloughs" in his final works in life, "A Study of Mathematical Physics" ..... 15

01-01-0003

18 Shigeru Masuda (Res. Workshop of Classical Fluid Dynamics) The celestial mechanics in conformity to the mathematical physics by Poisson ..... 15

01-01-0004

19 Shigeru Masuda (Res. Workshop of Classical Fluid Dynamics) The Poisson's integral owing to Legendre's formulae and his own ..... 15

01-99-0002

20 Shotaro Tanaka \* To express fractions into power series by Suida expansion ..... 15

01-01-0020

21 Ken Saito (Yokkaichi Univ.) Syntactic analysis of the whole text of Euclid's Elements (progress report) ..... 15

01-01-0008

22 Mitsuo Morimoto (Yokkaichi Univ./Sophia Univ.\*) Preliminary Volume, and Volumes 1, 2 and 3 of the Taisei Sankei ..... 15

01-01-0017

23 Toshio Harikae (Osaka Sangyo Univ.) On proportionality in "The Sea Island Mathematical Manual" ..... 15

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

01-02-0001

Kenichi Sato (Univ. of Electro-Comm.) SEKI Takakazu and his contemporary mathematicians

**12:00–12:30 Research Section Assembly****12:30–13:00 Mathematics History Team Meeting**

# Algebra

September 24th (Mon)

## 9:15–11:45

02-01-0028

- 1 Shinya Kumashiro (Chiba Univ.) The Gorenstein property and correspondences between trace ideals and birational finite extensions ..... 10  
Shiro Goto (Meiji Univ.\*)  
Ryotaro Isobe (Chiba Univ.)

02-01-0030

- 2 Ryotaro Isobe (Chiba Univ.) The structure of chains of Ulrich ideals in Cohen–Macaulay local rings of dimension one ..... 10  
Shiro Goto (Meiji Univ.\*)  
Shinya Kumashiro (Chiba Univ.)

02-01-0059

- 3 Hiroki Matsui (Nagoya Univ.) Remarks on a conjecture of Huneke and Wiegand ..... 10

02-01-0023

- 4 Akiyoshi Tsuchiya (Osaka Univ.) Edge rings with 3-linear resolutions ..... 10  
Takayuki Hibi (Osaka Univ.)  
Kazunori Matsuda  
 (Kitami Inst. of Tech.)

02-01-0036

- 5 Akiyoshi Tsuchiya (Osaka Univ.) Reflexive polytopes arising from edge polytopes ..... 10  
Takahiro Nagaoka (Kyoto Univ.)

02-01-0037

- 6 Akiyoshi Tsuchiya (Osaka Univ.) The depth of a reflexive polytope ..... 10  
Takayuki Hibi (Osaka Univ.)

02-01-0073

- 7 Hirota Higashidaira (Meiji Univ.) On the edge ideal of semi-unmixed bipartite graphs ..... 10

02-01-0016

- 8 Mitsuhiro Miyazaki Canonical and anticanonical analytic spreads of a Hibi ring ..... 10  
 (Kyoto Univ. of Edu.)

02-01-0017

- 9 Mitsuhiro Miyazaki Limit T-complexity of Ehrhart rings and limit Frobenius complexity of Hibi rings ..... 10  
 (Kyoto Univ. of Edu.)

02-01-0054

- 10 Kohsuke Shibata (Okayama Univ.) Alternative polarizations of strongly stable ideals, and their Alexander duals ..... 10  
Kohji Yanagawa (Kansai Univ.)

02-01-0031

- 11 Akiko Yazawa (Shinshu Univ.) The Lefschetz property for an algebra constructed from a graph ..... 10

02-01-0010

- 12 Tadahito Harima (Niigata Univ.)\* The strong Lefschetz property for complete intersections defined by products of linear forms ..... 10  
Akihito Wachi (Hokkaido Univ. of Edu.)  
Junzo Watanabe (Tokai Univ.\*)

02-01-0071

- 13 Maiko Ono (Okayama Univ.) On liftings of DG modules ..... 10  
Yuji Yoshino (Okayama Univ.)

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

02-02-0002

- Hideto Asashiba (Shizuoka Univ.)<sup>b</sup> 2-categorical covering theory and derived equivalences

## 15:30–17:10

02-01-0008

- 14 Masahisa Sato Projective module with unique maximal submodule ..... 10  
 (Aichi Univ./Univ. of Yamanashi\*)

02-01-0070

- 15 Ryoichi Kase (Okayama Univ. of Sci.) From support  $\tau$ -tilting posets to algebras ..... 10

02-01-0013

- 16 Toshiya Yurikusa (Nagoya Univ.) Combinatorial cluster expansion formulas from triangulated surfaces ..... 10

<a href="#">02-01-0020</a>	17 Yuya Mizuno (Shizuoka Univ.)	Torsion pairs for quivers and the Coxeter groups	10
<a href="#">02-01-0065</a>	18 <u>Takahide Adachi</u> (Osaka Pref. Univ.) Yuya Mizuno (Shizuoka Univ.)	Silting objects and $t$ -structures	10
<a href="#">02-01-0062</a>	19 Sota Asai (Nagoya Univ.)	The chamber structures of the Grothendieck groups coming from bricks	10
<a href="#">02-01-0048</a>	20 Mayu Tsukamoto (Osaka City Univ.)	On upper bound for global dimension of Auslander–Dlab–Ringel algebras	10
<a href="#">02-01-0051</a>	21 Yoshitomo Baba (Osaka Kyoiku Univ.)	On Harada rings and weak co- $H$ -sequences	10
<a href="#">02-01-0027</a>	22 <u>Ayako Itaba</u> (Tokyo Univ. of Sci.) Masaki Matsuno (Shizuoka Univ.)	Classifications of geometric algebras whose point schemes are elliptic curves	10

## September 25th (Tue)

**9:30–12:00**

<a href="#">02-01-0024</a>	23 Shuhei Tsujie (Hiroshima Kokusai Gakuin Univ.)	On chromatic symmetric functions of trivially perfect graphs and cographs	10
<a href="#">02-01-0043</a>	24 Tomoo Matsumura (Okayama Univ. of Sci.)	A tableau formula of the double Grothendieck polynomials associated to 321 avoiding permutations	10
<a href="#">02-01-0044</a>	25 Tatsuya Horiguchi (Osaka Univ.)	The cohomology rings of regular nilpotent Hessenberg varieties and Schubert polynomials	10
<a href="#">02-01-0060</a>	26 Yoshiteru Kurosawa (Numazu Nat. Coll. of Tech.)	Construction of relative invariants of prehomogeneous vector spaces associated with valued quivers of type $\mathbb{B}$	10
<a href="#">02-01-0012</a>	27 Genki Shibukawa (Kobe Univ.)	The Fibonacci numbers and Kostka numbers	10
<a href="#">02-01-0068</a>	28 Taiki Shibata (Okayama Univ. of Sci.)	On centers of Chevalley supergroups	10
<a href="#">02-01-0019</a>	29 Yasuyoshi Yonezawa (Nagoya Univ.)	Categorification of Howe representations of $U_q(\mathfrak{gl}_m)$ and the quiver Hecke algebra	10
<a href="#">02-01-0032</a>	30 Hiroyuki Nakaoka (Kagoshima Univ.)	On a unification of exact categories and triangulated categories	10
<a href="#">02-01-0042</a>	31 Takao Hayami (Hokkai-Gakuen Univ.)	On Hochschild cohomology ring and integral cohomology ring for the semidihedral group	10
<a href="#">02-01-0053</a>	32 Masahiro Wakatake (Kindai Univ.)	The unit group of a partial Burnside ring of a reducible Coxeter group of type A	10
<a href="#">02-01-0072</a>	33 Hiroki Sasaki (Shinshu Univ.)*	On module structures of source algebras of block ideals	10
<a href="#">02-01-0033</a>	34 <u>Masanori Sawa</u> (Kobe Univ.) Yukihiro Uchida (Tokyo Metro. Univ.)	Compact formulas for discriminants of classical quasi-orthogonal polynomials, with their applications	10

**13:00–14:00 Talk Invited by Algebra Section**

<a href="#">02-02-0004</a>	Yoshinori Yamasaki (Ehime Univ.)	On Schur multiple zeta functions	
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September 26th (Wed)

**9:15–11:25**

02-01-0026

- 35 Tabane Yashiro (Tokyo Denki Univ.) Discrete tomography for the L-shaped window ..... 10  
Ayane Minami (Tokyo Denki Univ.)

02-01-0046

- 36 Kazuhito Kozuka \* Reciprocity relations for  $p$ -adic Dedekind sums related to modular matrices ..... 10  
(Miyakonojo Nat. Coll. of Tech.)

02-01-0022

- 37 Debika Banerjee (IISER) \* Mean square of the double zeta function ..... 10  
Makoto Minamide (Yamaguchi Univ.)  
Yoshio Tanigawa

02-01-0063

- 38 Shota Inoue (Nagoya Univ.) A relation between the estimate of  $S(t)$  and the zero density estimate in short intervals ..... 10

02-01-0011

- 39 Maki Nakasuji (Sophia Univ.) Hook Schur type poly-Bernoulli numbers ..... 10  
Naoki Nakamura (Sophia Univ.)

02-01-0057

- 40 Minoru Hirose (Kyushu Univ.) Polynomial generalization of the regularization theorem for multiple zeta values ..... 10  
Hideki Murahara  
(Nakamura Gakuen Univ.)  
Shingo Saito (Kyushu Univ.)

02-01-0075

- 41 Ryota Umezawa (Nagoya Univ.) On multiple zeta values and log-sine integrals ..... 10

02-01-0003

- 42 Shigeru Iitaka (Gakushuin Univ.\*) Super perfect numbers with translation parameters  $m$  ..... 10

02-01-0009

- 43 Yasuo Matsuda On the symmetric recurrent formula ..... 10  
(Kurume Nat. Coll. of Tech.)

02-01-0035

- 44 Kota Saito (Nagoya Univ.) Arithmetic progressions in the graphs of slightly curved sequences .... 10  
Yuuya Yoshida (Nagoya Univ.)

02-01-0058

- 45 Fumitsuna Maruyama <sup>b</sup> On the cardinality of subsets of the matrix ring over certain residue ring ..... 10  
Yozo Deguchi  
Masao Toyozumi (Toyo Univ.)

**11:30–12:00 Research Section Assembly****14:15–15:15 Talk Invited by Algebra Section**

02-02-0003

- Takao Yamazaki (Tohoku Univ.) Motives and mixed Hodge structures with modulus

**15:30–17:40**

02-01-0064

- 46 Humihiko Watanabe \* Fundamental group of the complement of theta divisors ..... 10  
(Nat. Defense Acad. of Japan)

02-01-0006

- 47 Wataru Takeda (Nagoya Univ.) The finiteness of solutions of Diophantine equation over number fields ..... 10

02-01-0007

- 48 Yoshiyasu Ozeki (Kanagawa Univ.) Torsion of abelian varieties and Lubin–Tate extensions ..... 10

02-01-0015

- 49 Hiroataka Kodama (Kogakuin Univ.) A note on the Sturm bound for Siegel modular forms of type  $(k, 2)$  ..... 10

02-01-0061

- 50 Yuichi Sakai (Kyushu Univ.) Modular linear differential equations in general form ..... 10

02-01-0055	51 Fuminori Kawamoto (Gakushuin Univ.) Yasuhiro Kishi (Aichi Univ. of Edu.) Hiroschi Suzuki (Nagoya Univ.) Koshi Tomita (Meijo Univ.)	On some properties of the minimal elements with even period . . . . .	10
02-01-0056	52 Fuminori Kawamoto (Gakushuin Univ.) Yasuhiro Kishi (Aichi Univ. of Edu.) Hiroschi Suzuki (Nagoya Univ.) Koshi Tomita (Meijo Univ.)	A lower bound for the class number of certain real quadratic fields . . . . .	10
02-01-0004	53 Daisuke Shiomi (Yamagata Univ.)	On the $p$ -divisibility of class numbers of cyclotomic function fields with conductor of degree two . . . . .	10
02-01-0039	54 Kota Yamamoto (Nagoya Inst. of Tech.)	On iterated extensions of number fields arising from quadratic polyno- mial maps . . . . .	10
02-01-0018	55 Mamoru Sugamoto (apprhythm inc.) Akio Sugamoto (Ochanomizu Univ./Open Univ. of Japan)	Galois theory and quantum mechanics . . . . .	10
02-01-0047	56 Hajime Kaneko (Univ. of Tsukuba)	On the transcendence of the values of power series at algebraic integer points . . . . .	10
September 27th (Thu)			
<b>9:15–12:00</b>			
02-01-0066	57 Takeshi Torii (Okayama Univ.) Kazunori Nakamoto (Univ. of Yamanashi)	On the moduli of subalgebras of the full matrix ring of degree 3 (Part II) . . . . .	10
02-01-0067	58 Takeshi Torii (Okayama Univ.) Kazunori Nakamoto (Univ. of Yamanashi)	An application of Hochschild cohomology to the moduli of subalgebras of the full matrix ring . . . . .	10
02-01-0041	59 Yusuke Sato (Nagoya Univ.)	$\text{Hilb}^G(\mathbb{C}^4)$ and crepant resolutions of certain abelian group in $\text{SL}(4, \mathbb{C})$ . . . . .	10
02-01-0038	60 Masataka Tomari (Nihon Univ.)*	A condition for a weighted homogeneous singularity to have a reduced coordinate function . . . . .	10
02-01-0040	61 Takahiro Shibata (Kyoto Univ.)*	Ample canonical heights for endomorphisms on projective varieties . . .	10
02-01-0014	62 So Yamagata (Hokkaido Univ.)	Generalization of braid arrangement and its combinatorics . . . . .	10
02-01-0034	63 Riku Kudou (Waseda Univ.)	About counterexamples for Generalized Zariski Cancellation Problem . . . . .	10
02-01-0074	64 Makoto Enokizono (Osaka Univ.)	Slope equality of Eisenbud–Harris special fibrations of genus 4 . . . . .	10
02-01-0025	65 Hiromichi Fujiwara (Waseda Univ.)	On indecomposable vector bundles of rank two on a wighted projective line of type $(2, 2, 2, 2, 2; \lambda_1, \lambda_2)$ . . . . .	10
02-01-0050	66 Kimiko Yamada (Okayama Univ. of Sci.)	Obstructed stable sheaves on elliptic surfaces —canonical singularities— . . . . .	10
02-01-0052	67 Kimiko Yamada (Okayama Univ. of Sci.)	Obstructed stable sheaves on elliptic surfaces —not determined by degree-two terms— . . . . .	10
02-01-0001	68 Yusuke Suyama (Osaka Univ.)	Toric Fano varieties associated to building sets . . . . .	10
02-01-0002	69 Yusuke Suyama (Osaka Univ.)	Toric Fano varieties associated to graph cubeahedra . . . . .	10

**14:15–15:15 Talk Invited by Algebra Section**[02-02-0001](#)

Takuro Abe (Kyushu Univ.) Logarithmic vector fields and freeness of hyperplane arrangements

**15:30–16:40**[02-01-0021](#)70 Eunjeong Lee (KAIST/IBS)<sup>b</sup> Generic torus orbit closures in Schubert varieties ..... 10  
Mikiya Masuda (Osaka City Univ.)[02-01-0049](#)

71 Ryo Kawaguchi (Nara Medical Univ.) The properties of toric Castelnuovo varieties ..... 10

[02-01-0069](#)72 Norihiko Minami Covering Higher Fano varieties by rational varieties ..... 10  
(Nagoya Inst. of Tech.)[02-01-0029](#)

73 Taku Suzuki (Utsunomiya Univ.) Higher order families of lines on Fano manifolds ..... 10

[02-01-0005](#)

74 Tomohiro Iwami (Kyushu Inst. of Tech.)\* Bogomolov–Miyaoka–Yau type inequality for a coherent system associated to certain 3-fold ..... 10

[02-01-0045](#)

75 Yoshifumi Tsuchimoto (Kochi Univ.) Non-commutative Kähler projective varieties ..... 10



# Geometry

September 24th (Mon)

## 9:40–11:40

- 03-01-0004  
1 Saburoou Saitoh \* Division by zero calculus in figures —Our new space since Euclid—  
(Gunma Univ.\*/Inst. of Reproducing Kernels) (Draft) ..... 10  
Hiroshi Okumura
- 03-01-0005  
2 Saburoou Saitoh \* Applications of the division by zero calculus to Wasan geometry ..... 10  
(Gunma Univ.\*/Inst. of Reproducing Kernels)  
Hiroshi Okumura
- 03-01-0011  
3 Hajime Koba (Osaka Univ.) Mathematical modeling of diffusion system on an evolving double bubble ..... 12
- 03-01-0006  
4 Yuichiro Sato (Tokyo Metro. Univ.)  $d$ -minimal surfaces in three-dimensional singular semi-Euclidean space  $\mathbb{R}^{0,2,1}$  ..... 15
- 03-01-0028  
5 Joseph Cho (Kobe Univ.) Constant mean curvature surfaces and positon-like solutions ..... 15  
Yuta Ogata  
(Okinawa Nat. Coll. of Tech.)
- 03-01-0023  
6 Shintaro Akamine (Nagoya Univ.) Classification of timelike Thomsen surfaces and their deformations ... 15  
Joseph Cho (Kobe Univ.)  
Yuta Ogata  
(Okinawa Nat. Coll. of Tech.)
- 03-01-0014  
7 Kanako Enoyoshi (Ochanomizu Univ.) Principal curvatures of homogeneous hypersurfaces in a Grassmann manifold  $\widetilde{Gr}_3(\text{Im}\mathbb{O})$  by the  $G_2$ -action ..... 15
- 03-01-0013  
8 Kazumi Tsukada (Ochanomizu Univ.) Examples of transversally complex submanifolds of the associative Grassmann manifold ..... 10  
Kanakano Enoyoshi (Ochanomizu Univ.)
- 14:15–16:15**
- 03-01-0008  
9 Yoichi Maeda (Tokai Univ.) Embedding of  $SL(2, \mathbb{R})$  into the three-dimensional sphere and a hyperbolic pattern of symmetric matrices of  $SL(2, \mathbb{Z})$  ..... 10
- 03-01-0030  
10 Naoya Shimamoto (Univ. of Tokyo) Description of infinite orbits on multiple flag varieties: projective space case ..... 15
- 03-01-0027  
11 Keiichi Maeta (Univ. of Tokyo) The classification of indecomposable pseudo Riemannian symmetric spaces with signature  $(2, 2)$  which admit compact Clifford–Klein forms ..... 15
- 03-01-0025  
12 Akinori Gondo (Hiroshima Univ.) Cohomogeneity one actions of disconnected Lie groups on symmetric spaces of noncompact type ..... 10
- 03-01-0024  
13 Shinji Ohno (Nihon Univ.) Homegeneous biharmonic submanifolds in spheres ..... 15
- 03-01-0026  
14 Shinji Ohno (Nihon Univ.) Antipodal sets of generalized  $s$ -manifolds ..... 15  
Takashi Sakai (Tokyo Metro. Univ.)  
Yasunori Tereuchi
- 03-01-0020  
15 Makiko Sumi Tanaka Maximal antipodal sets of classical compact symmetric spaces I ..... 15  
(Tokyo Univ. of Sci.)  
Hiroyuki Tasaki (Univ. of Tsukuba)

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

03-02-0004

Yosuke Morita (Kyoto Univ.) On the cohomology of compact quotients of non-Riemannian homogeneous spaces

September 25th (Tue)

**10:10–10:25 Presentation Ceremony for the 2018 MSJ Geometry Prize****10:30–11:30 Award Lecture for the 2018 MSJ Geometry Prize**

03-02-0001

Shouhei Honda (Tohoku Univ.) Geometric analysis on metric measure spaces with Ricci bounds from below

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

03-02-0003

Tomoyuki Hisamoto (Nagoya Univ.) A variational aspect of the Kähler–Einstein problem

September 26th (Wed)

**9:50–11:40**

03-01-0015

16 Nobuhiko Otaba (Univ. Regensburg)\* Bifurcation for the constant scalar curvature equation and harmonic Riemannian submersions ..... 15  
Jimmy Petean (CIMAT)

03-01-0016

17 Nobuhiko Otaba (Univ. Regensburg) Scalar curvature and the multiconformal class of a direct product Riemannian manifold ..... 15  
Saskia Roos (MPIM)

03-01-0021

18 Kaoru Ikeda (Keio Univ.)<sup>b</sup> The symplectic structures on the Heisenberg groups and real characteristic classes ..... 15

03-01-0010

19 Noriaki Ikeda (Ritsumeikan Univ.) On the relation of Lie algebroids to constrained Hamiltonian systems and their BV/BFV formulation ..... 15

03-01-0019

20 Ryunosuke Ozawa (Osaka Univ.) Stability of Riemannian curvature dimension condition under concentration topology ..... 15  
Takumi Yokota (Kyoto Univ.)

03-01-0009

21 Asuka Takatsu (Tokyo Metro. Univ.)<sup>b</sup> Convergence of combinatorial Ricci flows on tori to degenerated circle patterns ..... 15

**14:15–16:15**

03-01-0007

22 Yoshito Ishiki (Univ. of Tsukuba) Quasi-symmetric invariant properties of Cantor metric spaces ..... 15

03-01-0022

23 Shu Takeuchi (Tohoku Univ.) Currents in metric spaces and flat distances ..... 15

03-01-0018

24 Keita Kunikawa (Tohoku Univ.) Stability and topology of translating solitons ..... 15  
Shunsuke Saito (Tohoku Univ.)

03-01-0003

25 Homare Tadano (Tokyo Univ. of Sci.) Some Cheeger–Gromov–Taylor type theorems for Finsler manifolds ... 15

03-01-0012

26 Hiroshi Sawai Vaisman structures and complex structures on LCK solvmanifolds ... 15  
(Numazu Nat. Coll. of Tech.)

03-01-0002

27 Yoshinori Hashimoto Twisted constant scalar curvature Kähler metrics with a large twist ..... 15  
(Univ. degli Studi di Firenze)

03-01-0001

28 Yasushi Homma (Waseda Univ.) The kernel of the Rarita–Schwinger operator on Riemannian spin manifolds ..... 15  
Uwe Semmelmann (Univ. Stuttgart)

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

03-02-0002

Hajime Fujita (Japan Women's Univ.) Index of Dirac-type operator on symplectic manifolds and its localization

# Complex Analysis

September 24th (Mon)

## 9:00–11:50

- [04-01-0001](#)  
1 Saburo Saitoh \* Division by zero calculus ..... 15  
(Gunma Univ.\*/Inst. of Reproducing Kernels)
- [04-01-0002](#)  
2 Saburo Saitoh \* The Descartes circles theorem and division by zero calculus ..... 15  
(Gunma Univ.\*/Inst. of Reproducing Kernels)  
Hiroshi Okumura
- [04-01-0014](#)  
3 Toshiyuki Sugawa (Tohoku Univ.) On the length of the shortest closed geodesics in a hyperbolic punctured  
Tanran Zhang (Soochow Univ.) sphere ..... 15
- [04-01-0023](#)  
4 Fumio Maitani Spans of meromorphic differentials restricted by boundary behavior ... 15
- [04-01-0026](#)  
5 Masakazu Shiba (Hiroshima Univ.\*) Closings of an open Riemann surface —Hydrodynamic period matrices,  
directional moduli and their applications ..... 15
- [04-01-0015](#)  
6 Katsuya Ishizaki (Open Univ. of Japan) Entire and meromorphic solutions of the functional equation  $f^n + g^n +$   
Naofumi Kimura (Open Univ. of Japan)  $h^n = 1$  and differential equations ..... 15
- [04-01-0028](#)  
7 Katsuhiko Matsuzaki (Waseda Univ.) Myrberg limit set and horospheric limit set ..... 15  
Kurt Falk  
(Christian-Albrechts-Univ. zu Kiel)
- [04-01-0016](#)  
8 Kentaro Hirata (Hiroshima Univ.) An estimate for positive solutions of a semilinear elliptic problem .... 15
- [04-01-0025](#)  
9 Joe Kamimoto (Kyushu Univ.) Non-polar singularities of local zeta functions in some smooth case ... 15  
Toshihiro Nose (Fukuoka Inst. of Tech.)
- [04-01-0027](#)  
10 Toshihiro Nose (Fukuoka Inst. of Tech.) Meromorphy of local zeta functions in smooth model cases ..... 15  
Joe Kamimoto (Kyushu Univ.)

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

- [04-02-0002](#)  
Gou Nakamura (Aichi Inst. of Tech.) Closed Riemann surfaces admitting extremal disks

## 15:30–16:20

- [04-01-0017](#)  
11 Shizuo Nakane Fiber Julia sets for maps with super-saddle fixed points ..... 15  
(Tokyo Polytechnic Univ.)
- [04-01-0004](#)  
12 Shigeki Matsutani Jacobi inversion formulae for a compact Riemann surface via Weier-  
(Sasebo Nat. Coll. of Tech.) strass normal form ..... 15  
Jiryo Komeda (Kanagawa Inst. of Tech.)  
Emma Previato (Boston Univ.)
- [04-01-0005](#)  
13 Shigeki Matsutani On  $\sigma$  function for the curve,  $y^3 = x(x-s)(x-b_1)(x-b_2)$  and its limit  
(Sasebo Nat. Coll. of Tech.) of  $s \rightarrow 0$  ..... 15  
Jiryo Komeda (Kanagawa Inst. of Tech.)  
Emma Previato (Boston Univ.)

## 16:35–17:35 Talk Invited by Complex Analysis Section

- [04-02-0001](#)  
Masataka Tomari (Nihon Univ.)\* On recent studies on normal two-dimensional complex singularities via  
resolution process

## September 25th (Tue)

**9:00–11:45**

04-01-0009

14 Masataka Iwai (Univ. of Tokyo) On the global generation of direct images of pluri-adjoint line bundles ..... 15

04-01-0010

15 Masataka Iwai (Univ. of Tokyo) Vanishing theorems of vector bundles with singular Hermitian metrics ..... 15

04-01-0011

16 Masataka Iwai (Univ. of Tokyo) Characterization of weakly positive torsion-free coherent sheaves by singular Hermitian metrics ..... 15

04-01-0019

17 Taiji Marugame (Academia Sinica) Self-dual Einstein ACH metric and CR GJMS operators in dimension three ..... 15

04-01-0008

18 Masanori Adachi (Shizuoka Univ.) On a hyperconvex manifold without non-constant bounded holomorphic functions ..... 10

04-01-0006

19 Yusaku Tiba (Ochanomizu Univ.) Cohomology of non-pluriharmonic loci ..... 15

04-01-0012

20 Takeo Ohsawa (Nagoya Univ.)<sup>b</sup>  $L^2$  proof of Nishino's rigidity theorem ..... 15

04-01-0013

21 Yukiata Abe (Univ. of Toyama)<sup>b</sup> Geometrically simple quasi-abelian varieties ..... 15

04-01-0003

22 Akio Kodama (Kanazawa Univ.)<sup>\*</sup> A group-theoretic characterization of the Fock–Bargmann–Hartogs domains ..... 15

04-01-0007

23 Satoru Shimizu (Tohoku Univ.)<sup>b</sup> A semi-local characterization of homogeneous bounded domains ..... 15

**13:15–14:20**

04-01-0024

24 Hiroaki Masaoka (Kyoto Sangyo Univ.) On a Heins-type theorem on open Riemann surfaces ..... 15

04-01-0018

25 Hidetaka Hamada A Schwarz lemma at the boundary for pluriharmonic mappings ..... 10  
(Kyushu Sangyo Univ.)

04-01-0020

26 Hidetaka Hamada A Schwarz lemma at the boundary on finite dimensional irreducible bounded symmetric domains ..... 15  
(Kyushu Sangyo Univ.)

04-01-0021

27 Ian Graham (Univ. of Toronto) A Schwarz lemma at the boundary on complex Hilbert balls and applications to starlike mappings ..... 15  
Hidetaka Hamada

(Kyushu Sangyo Univ.)

Gabriela Kohr (Babeş-Bolyai Univ.)

04-01-0022

28 Ian Graham (Univ. of Toronto) A boundary rigidity theorem for holomorphic self-mappings of Hilbert balls ..... 5  
Hidetaka Hamada

(Kyushu Sangyo Univ.)

Gabriela Kohr (Babeş-Bolyai Univ.)

# Functional Equations

September 24th (Mon)

## 9:15–12:00

- 05-01-0072  
1 Hiroshi Ogawara (Kumamoto Univ.) On solutions for a system of functional equations with triangular operators ..... 10
- 05-01-0080  
2 Saiei-Jaeyeong Matsubara-Heo (Kobe Univ.) Residue current approach to Ehrenpreis–Malgrange type theorem for linear partial differential equations with constant coefficients and commensurate time lags ..... 10
- 05-01-0045  
3 Saiei-Jaeyeong Matsubara-Heo (Kobe Univ.) Euler integral representations of GKZ hypergeometric functions and intersection theory of twisted cycles ..... 10
- 05-01-0076  
4 Koki Hirota (Ritsumeikan Univ.)<sup>b</sup> Real eigenvalues of the semiclassical Zakharov–Shabat operator with  $\mathcal{PT}$ -like symmetry ..... 10
- 05-01-0008  
5 Hideaki Matsunaga (Osaka Pref. Univ.)  
Rina Suzuki Classification of global behavior of a system of rational difference equations ..... 10
- 05-01-0032  
6 Hiroyuki Usami (Gifu Univ.)\*  
Kazuhiro Aoki (Gujo High School) Inverse problems for generalized cycloids ..... 10
- 05-01-0028  
7 Megumi Sano (Tokyo Tech) Minimization problems related to the critical Hardy inequalities with radial potential functions which are not monotone decreasing. .... 10
- 05-01-0037  
8 Naoki Hamamoto (Osaka City Univ.)  
Futoshi Takahashi (Osaka City Univ.) Hardy–Leray and Rellich–Leray inequalities for curl-free vector fields ..... 10
- 05-01-0034  
9 Futoshi Takahashi (Osaka City Univ.)  
Jaeyoung Byeon (KAIST) Hardy’s inequality in a limiting case on general bounded domains .... 10
- 05-01-0023  
10 Norisuke Ioku (Ehime Univ.)<sup>b</sup> Attainability of the best Sobolev constants in a ball ..... 10
- 05-01-0035  
11 Masataka Shibata (Tokyo Tech)  
Shinji Adachi (Shizuoka Univ.)  
Tatsuya Watanabe (Kyoto Sangyo Univ.) Asymptotic property of ground states for a class of quasilinear Schrödinger equation with  $H^1$ -critical growth ..... 10
- 05-01-0006  
12 Yohei Toyota (Osaka Univ.)  
Takashi Suzuki (Osaka Univ.) 2D Trudinger–Moser inequality for Boltzmann–Poisson equation with continuously distributed multi-intensities ..... 10
- 05-01-0067  
13 Kohji Ohtsuka (Hiroshima Kokusai Gakuin Univ.)  
Victor A. Kovtunenکو (Karl-Franzens-Univ. Graz) Shape sensitivity analysis via min-max differentiability and Generalized  $J$ -integral ..... 10

## 14:15–16:15

- 05-01-0068  
14 Junya Nishiguchi (Tohoku Univ.) Okamura’s distance function and a sufficient condition for the uniqueness of solutions for delay differential equations ..... 10
- 05-01-0060  
15 Yoshihiro Ueda (Kobe Univ.)  
Yuya Kiri (Azbil Corp.) Stability analysis for a general system of linear differential equations with discrete delays ..... 10
- 05-01-0018  
16 Albert Rodríguez Mulet (Hokkaido Univ.) Asymptotic behavior of eigenfrequencies of a thin elastic rod with non-uniform cross-section ..... 10

<a href="#">05-01-0081</a>	17 Shingo Takeuchi (Shibaura Inst. of Tech.)	$L^q$ -Lyapunov inequality for the one-dimensional $p$ -Laplacian . . . . .	10
<a href="#">05-01-0002</a>	18 Tetsutaro Shibata (Hiroshima Univ.)	Global and local structures of oscillatory bifurcation curves . . . . .	10
<a href="#">05-01-0054</a>	19 Shoichi Hasegawa (Tokyo Tech)	Intersection property of solutions to semilinear elliptic equations and its application to a Liouville-type result . . . . .	10
<a href="#">05-01-0012</a>	20 Satoshi Tanaka (Okayama Univ. of Sci.) Ryuji Kajikiya (Saga Univ.) Inbo Sim (Univ. of Ulsan)	Symmetry-breaking bifurcation of positive solutions to the Moore–Nehari differential equation . . . . .	10
<a href="#">05-01-0013</a>	21 Yūki Naito (Ehime Univ.) Yasuhito Miyamoto (Univ. of Tokyo)	Singular extremal solutions for supercritical elliptic equations in a ball . . . . .	10
<a href="#">05-01-0003</a>	22 Yuta Ishii (Tokyo Metro. Univ.) Kazuhiro Kurata (Tokyo Metro. Univ.)	Construction and stability analysis of one-peak symmetric stationary solutions for the Schnackenberg model with heterogeneity . . . . .	10

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

<a href="#">05-02-0003</a>	Katsuhisa Mimachi (Osaka Univ.)	Classical hypergeometric functions and related topics	
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September 25th (Tue)

**9:15–12:00**

<a href="#">05-01-0017</a>	23 Patrick van Meurs (Kanazawa Univ.)	Evolutionary convergence of positive and negative dislocations in 2D . . . . .	10
<a href="#">05-01-0026</a>	24 Shota Tateyama (Tohoku Univ.) Shigeaki Koike (Tohoku Univ.)	On $L^p$ -viscosity solutions of bilateral obstacle problems with unbounded ingredients . . . . .	10
<a href="#">05-01-0055</a>	25 Jumpei Inoue (Univ. of Electro-Comm.) Kousuke Kuto (Univ. of Electro-Comm.)	Optimal distribution of a species in the stationary logistic equation . . . . .	10
<a href="#">05-01-0052</a>	26 Kousuke Kuto (Univ. of Electro-Comm.) Yaping Wu (Capital Normal Univ.)	Bifurcation from infinity in a shadow system for the Shigesada–Kawasaki–Teramoto model . . . . .	10
<a href="#">05-01-0016</a>	27 Hiroshi Matsuzawa (Numazu Nat. Coll. of Tech.) Yuki Kaneko (Waseda Univ.)	Spreading and vanishing in a free boundary problem for nonlinear diffusion equations with a given forced moving boundary . . . . .	10
<a href="#">05-01-0066</a>	28 Yuki Kaneko (Waseda Univ.) Yoshio Yamada (Waseda Univ.)	Asymptotic profiles and speeds on spreading solutions to a free boundary problem for a reaction-diffusion equation . . . . .	10
<a href="#">05-01-0014</a>	29 Toshikazu Kuniya (Kobe Univ.) Jinliang Wang (Heilongjiang Univ.)	Asymptotic behavior of an SIR epidemic model with nonlocal diffusion . . . . .	10
<a href="#">05-01-0029</a>	30 Isamu Ohnishi (Hiroshima Univ.)	A mathematical study of the one-dimensional Keller and Rubinow model for Liesegang bands . . . . .	10
<a href="#">05-01-0030</a>	31 Isamu Ohnishi (Hiroshima Univ.)	On mathematical standard structure of a binary digit of memory in a cell and its application to biological or life science phenomena . . . . .	10
<a href="#">05-01-0038</a>	32 Masahiko Shimojyou (Okayama Univ. of Sci.) Jong Shenq Guo (Tamkang Univ.) Arnaud Ducrot (Univ. de Bordeaux)	Shadow system of a singular prey-predator system . . . . .	10

- 05-01-0039  
33 Masahiko Shimojyou Asymptotic behavior of global solutions to a singular prey-predator  
(Okayama Univ. of Sci.) model ..... 10  
Jong Shenq Guo (Tamkang Univ.)
- 05-01-0050  
34 Masaharu Taniguchi (Okayama Univ.) Axially non-symmetric traveling fronts in balanced bistable reaction-  
diffusion equations ..... 10
- 13:15–14:15 Talk Invited by Functional Equations Section**
- 05-02-0001  
Tatsuki Kawakami (Ryukoku Univ.) A semilinear elliptic equation with a dynamical boundary condition

## September 26th (Wed)

**9:15–12:00**

- 05-01-0044  
35 Naoto Kajiwara (Univ. of Tokyo) Global solvability of the Cahn–Hilliard equations with dynamic bound-  
ary conditions ..... 10
- 05-01-0024  
36 Fumihiko Onoue (Univ. of Tokyo) A varifold formulation of mean curvature flow with Dirichlet or dynamic  
Yoshikazu Giga (Univ. of Tokyo) boundary conditions ..... 10  
Keisuke Takasao (Kyoto Univ.)
- 05-01-0015  
37 Kohei Nakamura (Saitama Univ.) Interpolation inequalities between the deviation of curvature and the  
Takeyuki Nagasawa (Saitama Univ.) isoperimetric ratio with applications to geometric flows ..... 10
- 05-01-0022  
38 Norisuke Ioku (Ehime Univ.)<sup>b</sup> Critical dissipative estimate for a heat semigroup with the inverse square  
Takayoshi Ogawa (Tohoku Univ.) potential ..... 10
- 05-01-0073  
39 Asato Mukai (Univ. of Tokyo) Large time behavior of solutions of the heat equation with inverse square  
potential ..... 10
- 05-01-0051  
40 Kotaro Hisa (Tohoku Univ.) Existence of solutions for a fractional semilinear parabolic equation with  
Kazuhiro Ishige (Univ. of Tokyo) singular initial data ..... 10
- 05-01-0069  
41 Yukihiro Seki (Kyushu Univ.) On type II blow-up mechanisms in a semilinear heat equation with  
supercritical nonlinearity ..... 10
- 05-01-0027  
42 Masakazu Yamamoto (Niigata Univ.) Spatial decay of solutions to the quasi-geostrophic equation ..... 10  
Yuusuke Sugiyama  
(Univ. of Shiga Pref.)
- 05-01-0001  
43 Tobias Black (Univ. Paderborn) Global generalized solutions of a Keller–Segel–Stokes system with sin-  
Johannes Lankeit (Univ. Paderborn) gular sensitivity ..... 10  
Masaaki Mizukami  
(Tokyo Univ. of Sci.)
- 05-01-0056  
44 Fumitaka Wakabayashi (Waseda Univ.) The Keller–Segel system of parabolic-parabolic type in Morrey space  
..... 10
- 05-01-0061  
45 Akira Okada (Kyoto Univ.) Spatial analyticity of solutions to the drift-diffusion equation with initial  
data in homogeneous Besov space ..... 10
- 05-01-0074  
46 Hiroshi Wakui (Tohoku Univ.) Unboundedness for solutions to a degenerate drift-diffusion equation  
with the mass supercritical exponent ..... 10
- 05-01-0047  
47 Natsumi Yoshida (Ritsumeikan Univ.) Global asymptotic stability of rarefaction waves to the Cauchy problem  
for the generalized Korteweg–de Vries–Burgers–Kuramoto equation ... 10
- 05-01-0048  
48 Natsumi Yoshida (Ritsumeikan Univ.) Decay structure of solutions toward rarefaction waves to the Cauchy  
problem for the scalar conservation law with nonlinear viscosity ..... 10

**14:15–16:15**

05-01-0075

49 Fumihiko Hirose (Yamaguchi Univ.) On the energy estimate for Klein–Gordon type equations with time dependent singular mass ..... 10

05-01-0011

50 Hironori Michihisa (Hiroshima Univ.) Expanding methods for evolution operators of strongly damped wave equations ..... 10

05-01-0078

51 Hiroiyuki Takamura (Tohoku Univ.) \* Ning-An Lai (Lishui Univ.) Wave-like blow-up and lifespan estimate for solutions of nonlinear wave equations with strong time-decaying damping ..... 10

05-01-0063

52 Motohiro Sobajima (Tokyo Univ. of Sci.) On a test function method for blowup of solutions to semilinear damped wave equations ..... 10  
Masahiro Ikeda (RIKEN/Keio Univ.)

05-01-0064

53 Motohiro Sobajima (Tokyo Univ. of Sci.) Sharp lifespan estimates for solutions to two-dimensional semilinear heat equation in exterior domains ..... 10

05-01-0083

54 Takiko Sasaki (Meiji Univ.) The blow-up curve for semilinear wave equations with small spatial velocity ..... 10

05-01-0019

55 Haruya Mizutani (Osaka Univ.) Strichartz estimates for Schrödinger equations with slowly decaying potentials ..... 10

05-01-0053

56 Noriyoshi Fukaya (Tokyo Univ. of Sci.) Masahito Ohta (Tokyo Univ. of Sci.) Strong instability of standing waves for nonlinear Schrödinger equations with attractive inverse power potential ..... 10

05-01-0021

57 Hiroiyuki Hirayama (Univ. of Miyazaki) Masahiro Ikeda (RIKEN/Keio Univ.) Well-posedness for the nonlinear fourth order Schrödinger equations ..... 10**16:30–17:30 Talk Invited by Functional Equations Section**

05-02-0002

Neal Bez (Saitama Univ.)<sup>b</sup> Geometric estimates arising in the analysis of Zakharov systems

September 27th (Thu)

**9:15–12:00**

05-01-0057

58 Masaru Hamano (Saitama Univ.) Long time behavior of the solutions for the Schrödinger system with quadratic nonlinear terms in 5d ..... 10

05-01-0058

59 Tomoyuki Tanaka (Nagoya Univ.) On the local well-posedness of the third order Benjamin–Ono equation ..... 10

05-01-0062

60 Mamoru Okamoto (Shinshu Univ.) Asymptotic behavior of solutions to a higher-order KdV-type equation with critical nonlinearity ..... 10

05-01-0070

61 Felipe Linares (IMPA) Hayato Miyazaki (Tsuayama Nat. Coll. of Tech.) The initial value problem for the generalized KdV equation with low degree of nonlinearity ..... 10Gustavo Ponce (UCSB)

05-01-0059

62 Yohei Yamazaki (Hiroshima Univ.) Center stable manifolds around line solitary waves of Zakharov–Kuznetsov equation ..... 10

05-01-0036

63 Shinya Kinoshita (Nagoya Univ.) Hiroiyuki Hirayama (Univ. of Miyazaki) Sharp bilinear estimates and its application to a system of quadratic derivative nonlinear Schrödinger equations ..... 10

05-01-0042

64 Yoshihiro Ueda (Kobe Univ.) Reinhard Racke (Univ. Konstanz) Dissipative structures for thermoelastic plate equations with Cattneo’s law ..... 10



<a href="#">05-01-0041</a>	65 Yoshihiro Ueda (Kobe Univ.)	Optimal decay estimates of a regularity-loss type system with constraint condition . . . . .	10
<a href="#">05-01-0040</a>	66 Yoshihiro Ueda (Kobe Univ.) Renjun Duan (Chinese Univ. of Hong Kong) Shuichi Kawashima (Waseda Univ.)	New structural condition on decay property for symmetric hyperbolic systems with relaxation . . . . .	10
<a href="#">05-01-0043</a>	67 Yoshihiro Ueda (Kobe Univ.)	New stability criterion for the dissipative linear system . . . . .	10
<a href="#">05-01-0077</a>	68 Ken Furukawa (Univ. of Tokyo) Yoshikazu Giga (Univ. of Tokyo) Amru Hussein (TU Darmstadt) Matthias Hieber (TU Darmstadt) Takahito Kashiwabara (Univ. of Tokyo) Marc Wrona (TU Darmstadt)	On justification of hydrostatic approximation on the Primitive equation . . . . .	10
<a href="#">05-01-0009</a>	69 Hajime Koba (Osaka Univ.)	Mathematical modeling of diffusion and heat systems on an evolving surface with boundaries . . . . .	10
<a href="#">05-01-0010</a>	70 Hajime Koba (Osaka Univ.)	Mathematical modeling of compressible fluid system on an evolving surface with boundaries . . . . .	10
<a href="#">05-01-0007</a>	71 Kazuki Sato (Osaka Univ.) Hajime Koba (Osaka Univ.)	Energetic variational approaches for non-Newtonian fluid systems . . . . .	10
<b>14:15–16:15</b>			
<a href="#">05-01-0046</a>	72 Ryosuke Nakasato (Tohoku Univ.)	A regularity criterion for the density-dependent magnetohydrodynamics system in critical Besov spaces . . . . .	10
<a href="#">05-01-0004</a>	73 Ken Abe (Osaka City Univ.)	Vanishing viscosity of axisymmetric flows . . . . .	10
<a href="#">05-01-0005</a>	74 Ryo Kanamaru (Waseda Univ.)	Brezis–Gallouet–Wainger type inequalities and a priori estimates of time local strong solutions to Navier–Stokes equations . . . . .	10
<a href="#">05-01-0031</a>	75 Mitsuo Higaki (Kyoto Univ.) Yasunori Maekawa (Kyoto Univ.) Isabelle Gallagher (École Norm. Sup.)	On stationary two-dimensional flows around a fast rotating disk . . . . .	10
<a href="#">05-01-0033</a>	76 Hiroyuki Tsurumi (Waseda Univ.)	Ill-posedness of the stationary Navier–Stokes equations in scaling invariant homogeneous Besov spaces . . . . .	10
<a href="#">05-01-0082</a>	77 Shuichi Jimbo (Hokkaido Univ.) Erika Ushikoshi (Yokohama Nat. Univ.)	Hadamard variational formula for the multiple eigenvalue of the Stokes equations with friction slip boundary conditions . . . . .	10
<a href="#">05-01-0071</a>	78 Hirokazu Saito (Tokyo Univ. of Sci.)	Local solvability of the Navier–Stokes–Korteweg equations in the maximal regularity class . . . . .	10
<a href="#">05-01-0079</a>	79 Yoshihiro Shibata (Waseda Univ.) Miho Murata (Kanagawa Univ.)	Global well-posedness for the Navier–Stokes–Korteweg system in $\mathbb{R}^N$ . . . . .	10
<a href="#">05-01-0049</a>	80 Ryo Takada (Kyushu Univ.)	Strongly stratified limit for the 3D inviscid Boussinesq equations . . . . .	10
<b>16:30–17:30 Talk Invited by Functional Equations Section</b>			
<a href="#">05-02-0004</a>	Reika Fukuizumi (Tohoku Univ.)	Temperature effects in Bose–Einstein condensation	

# Real Analysis

September 26th (Wed)

## 9:00–12:00

- 06-01-0002  
1 Yoshifumi Ito (Tokushima Univ.\*) Axiomatic method of measure and integration (III). Definition and existence theorem of the Lebesgue measure ..... 15
- 06-01-0003  
2 Yoshifumi Ito (Tokushima Univ.\*) Axiomatic method of measure and integration (IV). Definition of the Lebesgue integral and its fundamental properties ..... 15
- 06-01-0022  
3 Yōhei Yamasaki Non-oriented volume and non-oriented integral in the  $C^0$  class ..... 15
- 06-01-0023  
4 Yōhei Yamasaki Minkowski content, the volume that admits the cartesian product property ..... 15
- 06-01-0031  
5 Ryoji Fukuda (Oita Univ.)  
Aoi Honda (Kyushu Inst. of Tech.)  
Yoshiaki Okazaki  
(Fuzzy Logic Systems Inst.) Convergence theorems for Pan and Lehrer integrals ..... 15
- 06-01-0036  
6 Ryoji Fukuda (Oita Univ.)  
Aoi Honda (Kyushu Inst. of Tech.)  
Yoshiaki Okazaki  
(Fuzzy Logic Systems Inst.) Convergence theorem of algebraic product inclusion-exclusion integral ..... 15
- 06-01-0020  
7 Tomonari Suzuki Contractive conditions on mappings on metric spaces ..... 15  
(Kyushu Inst. of Tech.)
- 06-01-0013  
8 Yasunori Kimura (Toho Univ.) Equilibrium problems on geodesic spaces and their resolvents ..... 15
- 06-01-0024  
9 Kengo Kasahara (Toho Univ.)  
Yasunori Kimura (Toho Univ.) Mann type iterative sequence for two resolvents in a complete CAT(1) space ..... 15
- 06-01-0029  
10 Toshikazu Watanabe Boundary value problems involving a fractional differential equation ..... 15  
(Tokyo Univ. of Information Sci.)
- 06-01-0035  
11 Sachiko Atsushiba Attractive point, fixed point and convergence theorems for generalized hybrid-type mappings ..... 15  
(Univ. of Yamanashi)
- 14:15–16:30**
- 06-01-0017  
12 Kota Saito (Nagoya Univ.) Construction of a one-dimensional set which asymptotically and omnidirectionally contains arithmetic progressions ..... 10
- 06-01-0005  
13 Takeshi Iida  
(Fukushima Nat. Coll. of Tech.)  
Yoshihiro Sawano (Tokyo Metro. Univ.) Orlicz-fractional maximal operators on weighted  $L^p$  spaces ..... 15
- 06-01-0006  
14 Minglei Shi (Ibaraki Univ.)  
Ryutaro Arai (Ibaraki Univ.)  
Eiichi Nakai (Ibaraki Univ.) Campanato spaces and commutators of generalized fractional integral operators on Orlicz spaces ..... 15
- 06-01-0009  
15 Ryota Kawasumi  
Eiichi Nakai (Ibaraki Univ.) Pointwise multipliers on weak Orlicz spaces ..... 15
- 06-01-0010  
16 Ryutaro Arai (Ibaraki Univ.)  
Eiichi Nakai (Ibaraki Univ.)  
Gaku Sadasue (Osaka Kyoiku Univ.) Fractional integrals on martingale Orlicz spaces ..... 15

<a href="#">06-01-0018</a>	17	<a href="#">Hiroyuki Tsurumi</a> (Waseda Univ.)	Counter examples of the bilinear estimates of the Hölder type inequality in homogeneous Besov spaces . . . . .	10
<a href="#">06-01-0011</a>	18	<a href="#">Yukio Kasahara</a> (Hokkaido Univ.) <a href="#">Nicholas H. Bingham</a> (Imperial Coll. London)	Matricial Baxter's theorem with a Nehari sequence . . . . .	10
<a href="#">06-01-0025</a>	19	<a href="#">Hiroyuki Saito</a> (Nihon Univ.) <a href="#">Hitoshi Tanaka</a> (Tsukuba Univ. of Tech.) <a href="#">Toshikazu Watanabe</a> (Tokyo Univ. of Information Sci.)	Composition of maximal operators with weighted Hausdorff content . . . . .	15
<a href="#">06-01-0032</a>	20	<a href="#">Youhei Tsutsui</a> (Shinshu Univ.)	A sparse bound for local smoothing operators . . . . .	15

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

<a href="#">06-02-0002</a>		<a href="#">Jun Kawabe</a> (Shinshu Univ.)	A unified approach to convergence theorems of distribution-based non-linear integrals	
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September 27th (Thu)

**9:15–12:00**

<a href="#">06-01-0001</a>	21	<a href="#">Masaaki Mizukami</a> (Tokyo Univ. of Sci.) <a href="#">Hirohiko Otsuka</a> (Tokyo Univ. of Sci.) <a href="#">Tomomi Yokota</a> (Tokyo Univ. of Sci.)	Boundedness in a chemotaxis-haptotaxis system with signal-dependent sensitivity . . . . .	15
<a href="#">06-01-0004</a>	22	<a href="#">Shunsuke Kurima</a> (Tokyo Univ. of Sci.)	A nonlocal Cahn–Hilliard equation on an unbounded domain . . . . .	15
<a href="#">06-01-0021</a>	23	<a href="#">Keiichiro Kagawa</a> (Waseda Univ.) <a href="#">Mitsuharu Ôtani</a> (Waseda Univ.)	Initial boundary value problem of the viscous Cahn–Hilliard equation . . . . .	15
<a href="#">06-01-0026</a>	24	<a href="#">Kosuke Kita</a> (Waseda Univ.) <a href="#">Mitsuharu Ôtani</a> (Waseda Univ.)	Bounds for global solutions of a reaction diffusion system . . . . .	15
<a href="#">06-01-0034</a>	25	<a href="#">Takanori Kuroda</a> (Waseda Univ.) <a href="#">Mitsuharu Ôtani</a> (Waseda Univ.)	Periodic solutions for complex Ginzburg–Landau equations in bounded domains . . . . .	15
<a href="#">06-01-0014</a>	26	<a href="#">Miu Takahashi</a> (Japan Women's Univ.) <a href="#">Toyohiko Aiki</a> (Japan Women's Univ.) <a href="#">Martijn Anthonissen</a> (Eindhoven Univ. of Tech.)	Numerical method for initial boundary value problem describing a real experiment related to Soret effect. . . . .	15
<a href="#">06-01-0015</a>	27	<a href="#">Ryota Nakayashiki</a> (Chiba Univ.)	Large-time behavior of the solutions to the system of grain boundary motion including dynamic boundary condition . . . . .	15
<a href="#">06-01-0033</a>	28	<a href="#">Yoshimasa Sasaki</a> (Niigata Univ.) <a href="#">Hiroyuki Ohwa</a> (Niigata Univ.)	On the existence and uniqueness of solutions to scalar conservation laws with discontinuous flux functions . . . . .	15
<a href="#">06-01-0027</a>	29	<a href="#">Hiroyuki Watanabe</a> (Oita Univ.)	Well-posedness for nonlocal parabolic-hyperbolic conservation laws with anisotropic diffusion terms . . . . .	15
<a href="#">06-01-0030</a>	30	<a href="#">Tsukasa Iwabuchi</a> (Tohoku Univ.)	The semigroup generated by the Dirichlet Laplacian of fractional order . . . . .	15

**14:15–16:00**

06-01-0037

31 Yutaka Tsuzuki (Hiroshima Shudo Univ.) Initial-boundary value problems for Vlasov–Poisson equations with angle error in a half-space ..... 15

06-01-0019

32 Risei Kano (Kochi Univ.) The existence of solutions for the non-linear hardening models ..... 15

06-01-0028

33 Kota Kumazaki (Nagasaki Univ.) Existence of a global solution for a moving boundary problem describing swelling ..... 15  
Adrian Muntean (Karlstad Univ.)

06-01-0016

34 Ken Shirakawa (Chiba Univ.) A class of optimal control problems for one-dimensional Kobayashi–Warren–Carter type systems ..... 15  
Noriaki Yamazaki (Kanagawa Univ.)  
Harbir Antil (George Mason Univ.)

06-01-0007

35 Noriaki Yamazaki (Kanagawa Univ.) Double quasi-variational evolution equations governed by time-dependent subdifferentials ..... 15  
Nobuyuki Kenmochi (Univ. of Warsaw)  
Ken Shirakawa (Chiba Univ.)

06-01-0008

36 Akio Ito Evolution inclusion on a real Hilbert space with quasi-variational structure for inner product —Existence of global-in-time solutions— ..... 15

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

06-02-0001

Toshiyuki Suzuki (Kanagawa Univ.) Semilinear Schrödinger evolution equations with inverse-square potentials

# Functional Analysis

September 24th (Mon)

## 10:30–12:00

- [07-01-0032](#)  
1 Hiroshi Inoue (Daiichi Univ. of Pharm.) Non-self-adjoint Hamiltonian based on generalized Riesz systems (1) ..... 10
- [07-01-0033](#)  
2 Hiroshi Inoue (Daiichi Univ. of Pharm.) Non-self-adjoint Hamiltonians based on generalized Riesz systems (2) ..... 10
- [07-01-0009](#)  
3 Takeo Kamizawa (Tokyo Univ. of Sci.) Criteria for the reducibilities of linear systems ..... 10
- [07-01-0003](#)  
4 Shuji Watanabe (Gunma Univ.)\* The second-order phase transition in the BCS-Bogoliubov model of superconductivity and its operator-theoretical proof ..... 15
- [07-01-0018](#)  
5 Kazuyuki Wada (Nat. Inst. of Tech., Hachinohe Coll.) Absence of wave operators for quantum walks ..... 15
- [07-01-0001](#)  
6 Hisashi Morioka (Doshisha Univ.)  
Etsuo Segawa (Tohoku Univ.) Detection of edge defects by embedded eigenvalues of quantum walks ..... 15

## 14:15–16:15

- [07-01-0028](#)  
7 Shu Nakamura (Univ. of Tokyo)  
Kouichi Taira (Univ. of Tokyo) Essential self-adjointness of pseudodifferential operators on Euclidean spaces ..... 15
- [07-01-0029](#)  
8 Yukihide Tadano (Univ. of Tokyo) Long-range scattering theory for discrete Schrödinger operators on hexagonal lattice ..... 15
- [07-01-0008](#)  
9 Masaki Kawamoto (Tokyo Univ. of Sci.) Klein–Gordon equations with homogeneous time-dependent electric fields ..... 15
- [07-01-0037](#)  
10 Takuya Watanabe (Ritsumeikan Univ.)  
Setsuro Fujiié (Ritsumeikan Univ.)  
André Martinez (Univ. Bologna) Semiclassical distribution of resonances near an energy-level crossing ..... 15
- [07-01-0026](#)  
11 Osanobu Yamada (Ritsumeikan Univ.)  
Takashi Okaji (Kyoto Univ.)  
Hubert Kalf (Math. Inst. der LMU München) A refined trace theorem and its application to uniform resolvent estimates of Dirac operators ..... 15
- [07-01-0024](#)  
12 Keisuke Asahara (Hokkaido Univ.)  
Daiju Funakawa (Hokkai-Gakuen Univ.) Spectral analysis of a generalized pair-interaction model ..... 15
- [07-01-0016](#)  
13 Takeru Hidaka (Kyushu Univ.)  
Fumio Hiroshima (Kyushu Univ.)  
Itaru Sasaki (Shinshu Univ.) On the existence of the ground state for the semi-relativistic Pauli–Fierz model ..... 15

## 16:30–17:30 Talk Invited by Functional Analysis Section

- [07-02-0001](#)  
Tadahiro Miyao (Hokkaido Univ.) Magnetism and operator inequalities

## September 25th (Tue)

**9:15–12:00**

07-01-0014

14 Junichi Fujii (Osaka Kyoiku Univ.)

On PM-property for the representing functions of power difference means ..... 15

07-01-0017

15 Yuki Seo (Osaka Kyoiku Univ.)

Quantum Tsallis relative entropy of negative order ..... 10

07-01-0020

16 Masatoshi Ito (Maebashi Inst. of Tech.)

Estimations of the weighted power mean by the Heron mean ..... 10

07-01-0021

17 Hiroaki Tohyama

(Maebashi Inst. of Tech.)

Hiroshi Isa (Maebashi Inst. of Tech.)

Eizaburo Kamei

Masayuki Watanabe

(Maebashi Inst. of Tech.)

Some relations among the  $n$ -th relative operator entropies and the  $n$ -th operator divergences II ..... 15

07-01-0002

18 Mitsuru Uchiyama

(Shimane Univ.\* / Ritsumeikan Univ.)

Lawrence G. Brown (Purdue Univ.)

Strongly operator convex functions ..... 15

07-01-0034

19 Kazufumi Kimoto (Univ. of Ryukyus)

Limit behavior of alpha determinants for normalized Laplacian matrices of complete graphs ..... 15

07-01-0027

20 Minoru Itoh (Kagoshima Univ.)

A description of an invariant theory using the Cayley–Hamilton theorem of higher order ..... 15

07-01-0015

21 Hiroshi Oda (Takushoku Univ.)

Separation of variables theorem for vector-valued polynomials on complex reductive Lie algebras ..... 15

07-01-0030

22 Hiroyoshi Tamori (Univ. of Tokyo)

Realization of minimal representations of real simple Lie groups ..... 15

07-01-0025

23 Nobukazu Shimeno

(Kwansei Gakuin Univ.)

Hobson’s formula in Dunkl analysis and its applications ..... 15

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

07-02-0003

Akihito Wachi (Hokkaido Univ. of Edu.)

Capelli identities and  $b$ -functions of prehomogeneous vector spaces

## September 26th (Wed)

**9:30–12:00**

07-01-0011

24 Kengo Matsumoto

(Joetsu Univ. of Edu.)

\* Flow equivalence of topological Markov shifts and extended Ruelle algebras ..... 15

07-01-0004

25 Yuhei Suzuki (Nagoya Univ.)

Eigenvalue set for etale groupoids and constructions of distinguished minimal actions ..... 15

07-01-0019

26 Norio Nawata (Osaka Kyoiku Univ.)

Infiniteness of central sequence  $C^*$ -algebras ..... 15

07-01-0006

27 Masatoshi Enomoto

Yasuo Watatani (Kyushu Univ.)

\* A bounded isomorphic invariant of two subspace systems ..... 15

07-01-0038

28 Yusuke Sawada (Nagoya Univ.)

On the constructions of minimal dilations of  $CP_0$ -semigroups ..... 15

07-01-0036

29 Michiya Mori (Univ. of Tokyo)

Isometries between projection lattices of von Neumann algebras ..... 15

07-01-0022

- 30 Hiroshi Ando (Chiba Univ.) Structure of bicentralizer algebras and inclusions of type III factors  
 Uffe Haagerup ..... 15  
 Cyril Houdayer (Univ. Paris-Sud)  
 Amine Marrakchi (Univ. Paris-Sud)

07-01-0031

- 31 Reiji Tomatsu (Hokkaido Univ.) On minimal actions of compact groups on full factors ..... 15

**14:15–15:00**

07-01-0013

- 32 Shizuo Miyajima (Tokyo Univ. of Sci.) Characterization of closed balls via metric projections, II ..... 10  
Isao Saito (Tokyo Univ. of Sci.)

07-01-0010

- 33 Osamu Hatori (Niigata Univ.) A geometric inequality and isometries on the positive cone ..... 15  
Toshikazu Abe (Ibaraki Univ.)

07-01-0023

- 34 Keiichi Watanabe (Niigata Univ.) Cauchy–Bunyakovsky–Schwarz type inequalities related to the Möbius  
 addition ..... 15

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

07-02-0002

- Takeshi Miura (Niigata Univ.) Surjective isometries on function spaces

## Statistics and Probability

September 24th (Mon)

### 9:30–12:00

- 08-01-0039  
1 Tamio Koyama (Rikkyo Univ.)<sup>b</sup> Parameter space of  $\mathcal{A}$ -hypergeometric distributions ..... 15
- 08-01-0005  
2 Hiroki Takahashi (Keio Univ.) Large Deviation Principle for arithmetic mean of digits in continued fraction expansion ..... 15
- 08-01-0004  
3 Hayato Takahashi (Waseda Univ.) Inclusion-exclusion principles on partially ordered sets and the distributions of the number of pattern occurrences in finite samples ..... 15
- 08-01-0036  
4 Erina Nasu (Yokohama Nat. Univ.)  
Masato Takei (Yokohama Nat. Univ.) On the width of the lowest horizontal crossing in two-dimensional percolation ..... 10
- 08-01-0037  
5 Noriyoshi Sakuma (Aichi Univ. of Edu.)  
Ryoichi Suzuki (Keio Univ.) A modified logarithmic Sobolev inequality for canonical Lévy processes and its applications ..... 10
- 08-01-0028  
6 Naoto Shimaru (Okayama Univ. of Sci.)  
Keizo Takashima (Okayama Univ. of Sci.) Partial sum of irrational rotations: mean ..... 15
- 08-01-0029  
7 Naoto Shimaru (Okayama Univ. of Sci.)  
Keizo Takashima (Okayama Univ. of Sci.) Partial sum of irrational rotations: variance ..... 10
- 08-01-0023  
8 Kiyoi Hoshino (Osaka Pref. Univ.) Identification from the SFCs of random functions Ogawa-integrable with respect to regular basis ..... 15
- 08-01-0018  
9 Takuya Murayama (Kyoto Univ.) Chordal Komatu–Loewner equation for a family of continuously growing hulls ..... 15

### 14:15–15:00

- 08-01-0010  
10 Tomoko Takemura (Nara Women's Univ.) Dirichlet forms corresponding to diffusion processes in a tube and the time changed process ..... 15
- 08-01-0015  
11 Atsushi Takeuchi (Osaka City Univ.) Convergence rates of extreme value distributions via the Stein equations ..... 15
- 08-01-0001  
12 Yuji Hamana (Kumamoto Univ.) On the first hitting time of the radial Ornstein–Uhlenbeck process ... 10

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

- 08-02-0001  
Kaneharu Tsuchida (Nat. Defense Acad. of Japan) Large deviation principles of additive functionals for symmetric Markov processes

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

- 08-02-0003  
Masato Hoshino (Kyushu Univ.) A relation between regularity structures and paracontrolled calculus

September 25th (Tue)

### 9:30–11:30

- 08-01-0021  
13 Yuki Chino (Leiden Univ.) Random walk in cooling random environment ..... 15
- 08-01-0038  
14 Takahiro Mori (Kyoto Univ.) Large deviations for intersection measures of some Markov processes ..... 15



08-01-0040			
15	<u>Yuki Ueda</u> (Hokkaido Univ.) Junki Morishita (Hokkaido Univ.)	Free infinite divisibility for the class of Generalized Power distributions with Free Poisson term	15
08-01-0030			
16	<u>Toshiyuki Katsuda</u> (Kwansei Gakuin Univ.)	Stability condition for a multiclass single-server queue with abandonment	15
08-01-0032			
17	<u>Yushi Hamaguchi</u> (Kyoto Univ.)	Finite-dimensional approximation of solutions of infinite-dimensional BSDEs	12
08-01-0033			
18	<u>Masayuki Kageyama</u> (Nagoya City Univ.)	MDPs with some risk utility functions	15

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

September 26th (Wed)

**9:40–12:00**

08-01-0016			
19	<u>Masanori Sawa</u> (Kobe Univ.) <u>Kazuki Yoshida</u> (Kobe Univ.) <u>Shohei Satake</u> (Kobe Univ.)	A construction of circulant almost orthogonal arrays of strength 3 and its applications in functional MRI experiments	15
08-01-0034			
20	<u>Shohei Satake</u> (Kobe Univ.) <u>Kazuki Yoshida</u> (Kobe Univ.) <u>Masanori Sawa</u> (Kobe Univ.)	On constructions and existence of circulant almost orthogonal arrays with strength 3	15
08-01-0024			
21	<u>Kazuki Matsubara</u> (ChuoGakuin Univ.) <u>Sanpei Kageyama</u> (Tokyo Univ. of Sci.)	Cyclically near-resolvable splitting-balanced block designs with block size $2 \times 2$	15
08-01-0027			
22	<u>Shoko Chisaki</u> (Tokyo Univ. of Sci.) <u>Nobuko Miyamoto</u> (Tokyo Univ. of Sci.) <u>Ryoh Fuji-Hara</u> (Univ. of Tsukuba*)	Combinatorial designs for dropout in deep learning	15
08-01-0019			
23	<u>Kou Fujimori</u> (Waseda Univ.)	The variable selection by the Dantzig selector for Cox's proportional hazards model	10
08-01-0035			
24	<u>Tomoyuki Nakagawa</u> (Tokyo Univ. of Sci.)	Objective priors for the robust Bayesian inference	15
08-01-0006			
25	<u>Ayaka Yagi</u> (Tokyo Univ. of Sci.) <u>Takashi Seo</u> (Tokyo Univ. of Sci.) <u>Yasunori Fujikoshi</u> (Hiroshima Univ.*)	Estimation of parameters in the growth curve model with monotone missing data pattern	15
08-01-0009			
26	<u>Koji Tsukuda</u> (Univ. of Tokyo) <u>Shuheji Mano</u> (Inst. of Stat. Math.)	Fisher information of multiple samples from the Poisson–Dirichlet populations	15

**12:15–12:30 Presentation Ceremony for the 2018 MSJ Analysis Prize****14:15–15:05**

08-01-0012			
27	<u>Hirofumi Wakaki</u> (Hiroshima Univ.)	Laplace approximation of the distribution function of the Bartlett–Nanda–Pillai test	15
08-01-0031			
28	<u>Yoshihide Kakizawa</u> (Hokkaido Univ.) <u>Gaku Igarashi</u> (Univ. of Tsukuba)	Bias correction of asymmetric kernel density estimators revisited	15
08-01-0007			
29	<u>Yoshihiko Maesono</u> (Kyushu Univ.) <u>Rizky Reza Fauzi</u> (Kyushu Univ.)	Mean residual life function estimators for nonnegative data by logarithmic transformation	10

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

08-02-0002

Shuhei Mano (Inst. of Stat. Math.) Partitions, hypergeometric systems, Dirichlet processes, and their statistical inferences

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

08-02-0004

Yan Liu (Kyoto Univ.) From prediction and interpolation problem to parameter estimation problem of time series

September 27th (Thu)

**9:40–11:30**

08-01-0013

30 Yuichi Goto (Waseda Univ.) Asymptotic theory and robustness of zero crossings estimator . . . . . 10  
Masanobu Taniguchi (Waseda Univ.)

08-01-0014

31 Yuichi Goto (Waseda Univ.) Discriminant analysis based on binary time series . . . . . 10  
Masanobu Taniguchi (Waseda Univ.)

08-01-0022

32 Yoshiyuki Tanida (Waseda Univ.) Empirical Bayesian estimators for time series . . . . . 10  
Masanobu Taniguchi (Waseda Univ.)

08-01-0011

33 Yugo Nakayama (Univ. of Tsukuba) Robust support vector machines for high-dimensional data . . . . . 15

08-01-0026

34 Aki Ishii (Tokyo Univ. of Sci.) Correlation test for high-dimensional data under the strongly spiked  
Kazuyoshi Yata (Univ. of Tsukuba) eigenvalue model . . . . . 15  
Makoto Aoshima (Univ. of Tsukuba)

08-01-0008

35 Kazuyoshi Yata (Univ. of Tsukuba) Consistency of high-dimensional mean vectors . . . . . 15  
Makoto Aoshima (Univ. of Tsukuba)

08-01-0003

36 Hirokazu Yanagihara (Hiroshima Univ.) High-dimensionality adjusted asymptotically loss efficient  $GC_p$  in normal multivariate linear models . . . . . 15

**14:15–15:05**

08-01-0020

37 Fumiya Akashi (Waseda Univ.) GEL method for tests of rotational symmetry on spheres . . . . . 15

08-01-0041

38 Shogo Kato (Inst. of Stat. Math.) A class of circulas obtained through a Fourier series based approach  
Arthur Pewsey (Univ. of Extremadura) . . . . . 15  
M. C. Jones (The Open Univ.)

08-01-0025

39 Eiichiro Funo (Kanto Gakuin Univ.) Decomposition of the Kullback–Leibler information on pooling incomplete samples . . . . . 10

# Applied Mathematics

September 24th (Mon)

## 9:00–12:00

- 09-01-0005  
1 Sho Fujimura (Fukuoka Univ.) On the number of perfect matchings of line graphs II ..... 10  
Shuji SHIRAISHI (Fukuoka Univ.)
- 09-01-0007  
2 Kohei Tanaka (Shinshu Univ.) Topological and combinatorial methods in motion planning problem ..... 15
- 09-01-0022  
3 Shohei Satake (Kobe Univ.) On quadratic residues and circulant almost orthogonal arrays ..... 15
- 09-01-0035  
4 Takuya Ikuta (Kobe Gakuin Univ.) Butson-type complex Hadamard matrices and association schemes on Galois rings of characteristic 4 ..... 10  
Akihiro Munemasa (Tohoku Univ.)
- 09-01-0039  
5 Sho Suda (Aichi Univ. of Edu.) The maximum number of diamonds in tournaments ..... 10  
Gary Greaves (Nanyang Tech. Univ.)
- 09-01-0032  
6 Tsuyoshi Miezaki (Univ. of Ryukyus) On the complete cycle index ..... 10  
Manabu Oura (Kanazawa Univ.)
- 09-01-0006  
7 Tsuyoshi Miezaki (Univ. of Ryukyus) On the Tutte polynomials in genus  $g$  ..... 10  
Manabu Oura (Kanazawa Univ.)  
Tadashi Sakuma (Yamagata Univ.)  
Hidehiro Shinohara (Yamagata Univ.)
- 09-01-0003  
8 Kiyoshi Yoshimoto (Nihon Univ.) Structures of edge-colored complete bipartite graphs ..... 15
- 09-01-0001  
9 Kiyoshi Ando A local condition for  $k$ -contractible edges ..... 15  
(Nat. Inst. of Information/JST ERATO)
- 09-01-0042  
10 Yumiko Ohno (Yokohama Nat. Univ.) Facial achromatic number of even triangulations on the sphere ..... 15  
Naoki Matsumoto (Seikei Univ.)
- 09-01-0045  
11 Kenta Ozeki (Yokohama Nat. Univ.) Hamiltonicity of 4-connected graphs with few crossing number ..... 15  
Carol Zamfirescu (Ghent Univ.)
- 09-01-0029  
12 Xiao-Nan Lu (Tokyo Univ. of Sci.) On separably existentially closed graphs ..... 15

## 14:20–16:30

- 09-01-0015  
13 Yusuke Yoshie (Tohoku Univ.) Stationary state of quantum walks on distance-regular graphs ..... 15  
Yusuke Higuchi (Showa Univ.)  
Etsuo Segawa (Tohoku Univ.)  
Mohamed Fuard Mohamed Sabri (Tohoku Univ.)
- 09-01-0021  
14 Seiken Saito (Nagoya Bunri Univ.) The inequalities of the radii of convergence of Ihara zeta-functions ... 10
- 09-01-0033  
15 Yusuke Higuchi (Showa Univ.) A dynamical system induced by discrete-time quantum walk ..... 15  
Mohamed Fuard Sabri (Tohoku Univ.)  
Etsuo Segawa (Tohoku Univ.)  
Yusuke Yoshie (Tohoku Univ.)
- 09-01-0034  
16 Yusuke Ide (JAIST) Spectral analysis of discrete-time quantum walks on cycle and path graphs ..... 15  
Choon-Lin Ho (Tamkang Univ.)  
Norio Konno (Yokohama Nat. Univ.)

09-01-0040		
17	<u>Daiju Funakawa</u> (Hokkai-Gakuen Univ.) Toru Fuda (Kokushikan Univ.) Satoshi Sasayama (Hokkaido Univ.) Akito Suzuki (Shinshu Univ.)	About the resonance of a 2-dimensional split-step quantum walk . . . . . 15
09-01-0046		
18	<u>Noriaki Teranishi</u> (Hokkaido Univ.) Itaru Sasaki (Shinshu Univ.) Akito Suzuki (Shinshu Univ.) Daiju Funakawa (Hokkai-Gakuen Univ.) Yasumichi Matsuzawa (Shinshu Univ.)	A note on time operators with respect to a unitary operator . . . . . 15
09-01-0025		
19	<u>Sho Kubota</u> (Tohoku Univ.) Yusuke Yoshie (Tohoku Univ.)	Periodicity of Grover walks on some trees . . . . . 10
09-01-0047		
20	<u>Takashi Komatsu</u> (Yokohama Nat. Univ.) Norio Konno (Yokohama Nat. Univ.)	Stationary measure induced by eigenvalue problem of quantum walk . . . . . 10
<b>16:40–17:40 Talk Invited by Applied Mathematics Section</b>		
09-02-0005	Norio Konno (Yokohama Nat. Univ.)	Quantum walk 2.0

## September 25th (Tue)

**9:00–12:00**

09-01-0017		
21	<u>Chie Nara</u> (Meiji Univ.) Jin-ichi Itoh (Sugiyama Jogakuen Univ.)	Continuous flatening of the 2-skeleton of the square faces in a hypercube . . . . . 15
09-01-0023		
22	<u>Atsuhiro Nakamoto</u> (Yokohama Nat. Univ.) Naoki Matsumoto (Seikei Univ.) Gen Kawatani (Tokyo Univ. of Sci.) Jorge Urrutia (UNAM)	Geometric quadrangulations of a polygon . . . . . 15
09-01-0026		
23	Kenta Noguchi (Tokyo Univ. of Sci.)	Connectivity and Hamiltonicity of 1-planar graphs . . . . . 15
09-01-0030		
24	<u>Naoki Matsumoto</u> (Seikei Univ.) Atsuki Nagao (Ochanomizu Univ.)	Feedback game on Eulerian graphs . . . . . 15
09-01-0038		
25	Syun Hiranuma (Yokohama Nat. Univ.) <u>Gen Kawatani</u> (Tokyo Univ. of Sci.) Naoki Matsumoto (Seikei Univ.)	Domatically full graphs obtained from Cartesian products of graphs . . . . . 15
09-01-0013		
26	<u>Shinya Fujita</u> (Yokohama City Univ.) Tommy Jensen (Aarhus Univ.) Boram Park (Ajou Univ.) Tadashi Sakuma (Yamagata Univ.)	On the weighted safe set problem on paths and cycles . . . . . 10
09-01-0050		
27	<u>Hideo Mitsuhashi</u> (Hosei Univ.) Norio Konno (Yokohama Nat. Univ.) Iwao Sato (Oyama Nat. Coll. of Tech.)	Left eigenvalues of quaternionic quantum walks on graphs . . . . . 15
09-01-0049		
28	Kei Saito (Yokohama Nat. Univ.)	Periodicity for the Fourier quantum walk on regular graphs . . . . . 15
09-01-0053		
29	Kei Saito (Yokohama Nat. Univ.)	Analysis of the stationary measure of quantum walk by position-evolution process . . . . . 15

- 09-01-0014  
30 Iwao Sato (Oyama Nat. Coll. of Tech.) The spectral analysis of the unitary matrix of a 2-tessellable staggered  
Norio Konno (Yokohama Nat. Univ.) quantum walk on a graph ..... 15  
Yusuke Ide (JAIST)

September 26th (Wed)

**10:00–12:00 Special Session “Mathematical problems in machine learning —focusing on the theory of deep learning”**

- 09-02-0001  
Sho Sonoda (RIKEN) Recent developments on deep neural network theory ..... 45  
09-02-0003  
Taiji Suzuki (Univ. of Tokyo) Generalization error theory of deep learning and its application to model  
analysis ..... 45

**14:15–16:20**

- 09-01-0043  
31 Jun O’Hara (Chiba Univ.) Regularization of the self-inductance ..... 15  
09-01-0041  
32 Akane Kawaharada Relation between spatio-temporal patterns generated by a nonlinear  
(Kyoto Univ. of Edu.) cellular automaton and a singular function ..... 10  
Takao Namiki (Hokkaido Univ.)  
09-01-0019  
33 Tatsuki Mori (Osaka Univ.) Numerical approach to existence and stability of stationary solutions to  
Takashi Suzuki (Osaka Univ.) a SKT cross-diffusion equation ..... 15  
Shoji Yotsutani (Ryukoku Univ.)  
09-01-0018  
34 Kazunori Matsui (Kanazawa Univ.) A pressure-Poisson problem with mixed boundary conditions ..... 15  
09-01-0024  
35 Yuki Chiba (Univ. of Tokyo) Nitsche’s method for Poisson equations with a Robin boundary condi-  
Norikazu Saito (Univ. of Tokyo) tion in a smooth domain ..... 15  
09-01-0028  
36 Toru Nakanishi (Univ. of Tokyo) Numerical analysis for the radially symmetric solutions of multidimen-  
Norikazu Saito (Univ. of Tokyo) sional semilinear heat equations by finite element method ..... 15  
09-01-0027  
37 Akitoshi Takayasu (Univ. of Tsukuba) Numerical validation of blow-up solutions for differential equations with  
Kaname Matsue exponential nonlinearity ..... 15  
(Kyushu Univ./Kyushu Univ.)  
09-01-0031  
38 Yoshitaka Watanabe (Kyushu Univ.) An improvement for verifying the existence and bounds of the inverse  
Takehiko Kinoshita of second-order elliptic operators ..... 15  
Mitsuhiro T. Nakao (Waseda Univ.)

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

- 09-02-0004  
Takeshi Fukao (Kyoto Univ. of Edu.) Abstract approach of evolution equation to partial differential equations  
with total mass conservation

September 27th (Thu)

**10:00–11:40**

- 09-01-0010  
39 Takeshi Gotoda (Hokkaido Univ.) Convergence of the filtered solutions to the 2D Euler equations with  
vortex sheet initial data ..... 15  
09-01-0036  
40 Yuuki Shimizu (Kyoto Univ.) Point vortex dynamics on minimal surfaces: 1. Theoretical analysis  
Koya Sakakibara (Kyoto Univ.) ..... 15  
09-01-0037  
41 Koya Sakakibara (Kyoto Univ.) Point vortex dynamics on minimal surfaces: Numerical analysis ..... 15  
Yuuki Shimizu (Kyoto Univ.)

09-01-0002

- 42 George Miyake (Ube Nat. Coll. of Tech.) An analysis of four coupled oscillators circuits in a ring by using the symmetry of the circuits ..... 10  
 Yuji Katsuta (Ube Nat. Coll. of Tech.)

09-01-0004

- 43 Fuminori Sakaguchi (Univ. of Fukui) An improvement of integer-type algorithm for eigenvalues of differential operators by means of the elimination of eigenfunctions ..... 15

09-01-0020

- 44 Yukihiro Nakata (Shimane Univ.) An explicit periodic solution of a delay differential equation ..... 15

**14:15–15:50**

09-01-0044

- 45 Kazuyuki Yagasaki (Kyoto Univ.) Chaos in randomly perturbed dynamical systems ..... 15

09-01-0048

- 46 Shoya Motonaga (Kyoto Univ.) Nonintegrability of parametrically forced nonlinear oscillators ..... 15  
 Kazuyuki Yagasaki (Kyoto Univ.)

09-01-0052

- 47 Yasuhiro Ishitsuka (Kyoto Univ.) Understanding of dynamical reconstruction based on delay embedding through Gröbner basis ..... 15  
 Naoto Nakano (Kyoto Univ.)

09-01-0008

- 48 Sungrim Seirin Lee (Hiroshima Univ.) Pattern formation induced by domain deformation ..... 15

09-01-0009

- 49 Takeshi Gotoda (Hokkaido Univ.) Mathematical modeling for epidermal desquamation ..... 15  
 Masaaki Uesaka (Hokkaido Univ.)  
 Yusuke Yasugahira (Hokkaido Univ.)  
 Yasuaki Kobayashi (Ochanomizu Univ.)  
 Hiroyuki Kitahata (Chiba Univ.)  
 Mitsuhiro Denda (Shiseido Co., Ltd.)  
 Masaharu Nagayama (Hokkaido Univ.)

09-01-0011

- 50 Takashi Suzuki (Osaka Univ.) Modeling angiogenesis —resolution of chemotactic paradox ..... 5

09-01-0012

- 51 Takashi Suzuki (Osaka Univ.) Modeling cell deformation —free boundaries and Liouville's theorem ... 5

**16:10–17:10 Talk Invited by Applied Mathematics Section**

09-02-0002

- Ippei Obayashi (RIKEN/Tohoku Univ.) Persistent homology —Analysis of the shape of data by the combination of mathematics and computer science

# Topology

September 24th (Mon)

## 9:20–12:00

10-01-0005

- 1 Haruko Miyazawa (Tsuda Coll.) Burnside groups and  $n$ -moves for links ..... 10  
 Kodai Wada (Waseda Univ.)  
 Akira Yasuhara (Waseda Univ.)

10-01-0006

- 2 Haruko Miyazawa (Tsuda Coll.) Generalized virtualization on welded links ..... 10  
 Kodai Wada (Waseda Univ.)  
 Akira Yasuhara (Waseda Univ.)

10-01-0001

- 3 Masakazu Teragaito (Hiroshima Univ.) Weight elements of the knot groups of some 3-strand pretzel knots  
 ..... 10

10-01-0010

- 4 Masaaki Suzuki (Meiji Univ.) Genera of two-bridge knots and epimorphisms of their knot groups ... 10  
 Anh T. Tran (Univ. of Texas at Dallas)

10-01-0012

- 5 Toshio Saito (Joetsu Univ. of Edu.) Tunnel number of knots and generalized tangles ..... 10

10-01-0027

- 6 Hideo Takioka (Osaka City Univ.)  $2n$ -moves and the  $\Gamma$ -polynomial for knots ..... 10

10-01-0008

- 7 Yasutaka Nakanishi (Kobe Univ.) Differences of Alexander polynomials for knots caused by a single cross-  
 ing change, II ..... 10

10-01-0028

- 8 Keiju Kato (Tokyo Tech) A mirroring formula for the interior polynomial of a bipartite graph  
 ..... 10

10-01-0013

- 9 Mikhail Khovanov (Columbia Univ.) Braid group actions from categorical symmetric Howe duality on de-  
 formed Webster algebras ..... 15  
 Aaron D. Lauda  
 (Univ. of Southern California)  
 Joshua Sussan (City Univ. of New York)  
 Yasuyoshi Yonezawa (Nagoya Univ.)

10-01-0011

- 10 Yasushi Kasahara On  $2g + 1$ -dimensional linear representations of mapping class groups  
 of genus  $g$  ..... 10  
 (Kochi Univ. of Tech.)

10-01-0009

- 11 Inasa Nakamura (Kanazawa Univ.) Simplifying branched covering surface-knots with a non-zero number of  
 branch points ..... 10

10-01-0022

- 12 Mizuki Fukuda (Tohoku Univ.) Gluck twist along branched twist spins ..... 10

10-01-0029

- 13 Motoo Tange (Univ. of Tsukuba)<sup>b</sup> 4-manifolds with  $E_8$  intersection form and their correction terms ..... 15

## 14:15–14:55

10-01-0021

- 14 Sukuse Abe (Osaka City Univ.) Quantum  $U_q(\mathfrak{g})$  invariants of genus 2 handlebody-knots ..... 15

10-01-0018

- 15 Wataru Yuasa (Kyoto Univ.)  $A_2$  colored polynomials of rigid vertex graphs ..... 10

10-01-0019

- 16 Wataru Yuasa (Kyoto Univ.)  $A_2$  skein representations of pure braid groups ..... 10

## 15:10–16:10 Talk Invited by Topology Section

10-02-0001

- Tadayuki Watanabe (Shimane Univ.) Characteristic classes for  $\text{Diff}(S^4)$  and clasper surgery for families

## September 25th (Tue)

**13:15–14:15**[10-01-0003](#)

- 17 Yoshikazu Yamagishi (Ryukoku Univ.) Voronoi tilings on Archimedean spiral lattices ..... 10  
 Takamichi Sushida (Hokkaido Univ.)

[10-01-0017](#)

- 18 Shunsuke Ichiki (Yokohama Nat. Univ.) Characterization of generic transversality ..... 15

[10-01-0024](#)

- 19 Takahiro Yamamoto Apparent contours of stable maps of compact surfaces with boundary  
 (Tokyo Gakugei Univ.) into the plane ..... 15

[10-01-0020](#)

- 20 Keisuke Teramoto (Kobe Univ.) On signs of cusps of Gauss maps of cuspidal edges with certain properties ..... 15

## September 26th (Wed)

**10:20–12:00**[10-01-0015](#)

- 21 Takashi Shimomura Applications of the Bratteli–Vershik model for zero-dimensional home-  
 (Nagoya Univ. of Economics) omorphisms ..... 10

[10-01-0016](#)

- 22 Takashi Shimomura \* Characterization of substitution map for minimal substitution subshifts  
 (Nagoya Univ. of Economics) ..... 10

[10-01-0023](#)

- 23 Hiroki Kodama (Univ. of Tokyo) Derivatives of flat functions ..... 15  
 Kazuo Masuda  
 Yoshihiko Mitsumatsu (Chuo Univ.)

[10-01-0004](#)

- 24 Mariko Ohara (Shinshu Univ.) On graded E-infinity rings and projective schemes ..... 15

[10-01-0025](#)

- 25 Koichi Inoue (Tokyo City Univ.) Symmetric polynomial and  $Q_m(w_n)$  ..... 15

[10-01-0002](#)

- 26 Tadayuki Haraguchi Homotopy structures of smooth CW complexes ..... 15  
 (Naragakuen Univ.)

**14:15–14:50**[10-01-0007](#)

- 27 Takahiro Matsuyuki (Tokyo Tech) Characteristic classes of fibrations and graph complexes ..... 15

[10-01-0026](#)

- 28 Takefumi Nosaka (Tokyo Tech) de Rham theory and cocycles of cubical sets from smooth quandles  
 ..... 15

**15:10–16:10 Talk Invited by Topology Section**[10-02-0002](#)

- Shizuo Kaji (Kyushu Univ.) On equivariant loop product



# Infinite Analysis

September 24th (Mon)

## 9:15–10:50

- [11-01-0004](#)  
1 Masaki Kato (Kobe Univ.) An addition type formula for the elliptic digamma function ..... 15
- [11-01-0002](#)  
2 Takanori Ayano (Osaka City Univ.)  
Victor Matveevich Buchstaber (Steklov Math. Inst.) Solutions of KdV-equation obtained by the degeneration of meromorphic functions on the sigma divisor of hyperelliptic curves of genus 3 ..... 15
- [11-01-0008](#)  
3 Takao Suzuki (Kindai Univ.) A similarity reduction of the Drinfeld–Sokolov hierarchy of type  $A$  corresponding to the partition of natural number  $(n+1, n+1, n+1)$  ..... 15
- [11-01-0006](#)  
4 Kouichi Takemura (Chuo Univ.) On  $q$ -deformations of the Heun equation ..... 15
- [11-01-0014](#)  
5 Yousuke Ohyama (Tokushima Univ.)  $q$ -Stokes phenomenon on a difference equation satisfied by  $q$ -hypergeometric series  ${}_3\phi_2(a_1, a_2, a_3; 0, 0; q, x)$  ..... 15
- [11-01-0013](#)  
6 Masahiko Ito (Univ. of Ryukyus)  
Masatoshi Noumi (Kobe Univ.) Elliptic extension of Gustafson’s  $q$ -beta integral of type  $G_2$  and its infinite product expression ..... 15

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

- [11-02-0002](#)  
Kohei Iwaki (Nagoya Univ.) Exact WKB analysis and topological recursion

## 14:15–16:25

- [11-01-0012](#)  
7 Yuma Mizuno (Tokyo Tech) Jacobian matrices of Y-seed mutations and mutation networks ..... 15
- [11-01-0001](#)  
8 Masanori Ando (Naragakuen Univ.) Inferior regular partitions and Glaisher correspondence ..... 15
- [11-01-0011](#)  
9 Ayumu Hoshino (Hiroshima Inst. of Tech.)  
Jun’ichi Shiraishi (Univ. of Tokyo) Matrix inversion for Koornwinder polynomials with one-column diagram ..... 15
- [11-01-0015](#)  
10 Kazuma Suetake (Nagoya Univ.)  
Hidetoshi Awata (Nagoya Univ.)  
Hiroaki Kanno (Nagoya Univ.) The  $(q, t)$ -KZ equation associated with the quantum toroidal algebra ..... 15
- [11-01-0005](#)  
11 Ryosuke Kodera (Kobe Univ.) On Guay’s evaluation map for affine Yangians ..... 15
- [11-01-0009](#)  
12 Toshio Nakatsu (Setsunan Univ.)  
Kanehisa Takasaki (Kindai Univ.) Hodge integrals and topological vertex ..... 15
- [11-01-0003](#)  
13 Atsuo Kuniba (Univ. of Tokyo)  
Vincent Pasquier (Univ. Paris-Saclay) Matrix product solutions to the reflection equation from three dimensional integrability ..... 15
- [11-01-0007](#)  
14 Masato Okado (Osaka City Univ.)  
Jae-Hoon Kwon (Seoul Nat. Univ.) KR crystals of the generalized quantum group of type  $A$  ..... 15

## 16:40–17:40 Talk Invited by Infinite Analysis Special Session

- [11-02-0001](#)  
Takeshi Ikeda (Okayama Univ. of Sci.) K-theoretic Paterson isomorphism