

## 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.

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# Foundation of Mathematics and History of Mathematics

March 15th (Wed)

## 9:30–10:15

01-01-0016

- 1 Kohtaro Tadaki (Chubu Univ.) An effectivization of the law of large numbers for algorithmically random sequences and its absolute speed limit of convergence . . . . . 15

01-01-0009

- 2 Yudai Suzuki (Tohoku Univ.) On the Weihrauch degrees between  $C_{\omega^\omega}$  and ATR . . . . . 15  
Keita Yokoyama (Tohoku Univ.)

## 10:30–11:30 Talk Invited by Section on Foundation and History of Mathematics

01-02-0002

- Makoto Fujiwara (Tokyo Univ. of Sci.) Hierarchy of semi-classical arithmetic and conservative extension theorems

## 14:15–14:30 Mathematics History Team Meeting

## 14:30–16:45

01-01-0018

- 3 Makoto Tamura (Osaka Sangyo Univ.) On the equations of “Continuation of Ancient Mathematics” . . . . . 15  
Toshio Harikae (Osaka Sangyo Univ.)

01-01-0007

- 4 Toshio Harikae (Osaka Sangyo Univ.) On restration of lost chinese text in Continuation of Ancient Mathematics . . . . . 15  
Makoto Tamura (Osaka Sangyo Univ.)

01-01-0006

- 5 Katsushi Waki (Yamagata Univ.) Evaluation of the accuracy of extracting graphic regions in a WASAN book . . . . . 15

01-01-0004

- 6 Tsukane Ogawa (Yokkaichi Univ.) Problems related to the uniqueness of mathematical thought in Oka Yuki-tada’s *Collection of Exquisite Formulae* . . . . . 15

01-01-0015

- 7 Hideyuki Majima (Ochanomizu Univ.\*) Supplement to the paper “Seki Takakazu, his life and bibliography” . . . . . 15

01-01-0017

- 8 Hideyuki Majima (Ochanomizu Univ.\*) Theoretical meaning of the calculation of Pi by Seki Takakazu and Takebe Katahiro . . . . . 15

01-01-0019

- 9 Hideyuki Majima (Ochanomizu Univ.\*) The year 2022, the memorial 314th year of Seki Takakazu and the 300th anniversary of “Takebe Katahiro’s Tetsujjutsu-Sankei” . . . . . 15

01-01-0013

- 10 Noriko Tanaka A study on stochastic representations for random motion . . . . . 15  
(Aichi Prefectural Asahigaoka High School)  
Nozomu Matsubara (Univ. of Tokyo\*)

## 17:00–18:00 Talk Invited by Section on Foundation and History of Mathematics

01-02-0001

- Tatsuhiko Kobayashi Finishing the editing of the new Seki Takakazu’s Collected Works  
(Maebashi Inst. of Tech.\*/Yokkaichi Univ.)

March 16th (Thu)

## 9:15–12:15

01-01-0001

- 11 Toshimichi Usuba (Waseda Univ.) Monotonicity of ultrafilter numbers . . . . . 15

01-01-0014

- 12 Kota Takeuchi (Univ. of Tsukuba) On the indivisibility of metric structures . . . . . 15

01-01-0008

- 13 Hirotaka Kikyō (Kobe Univ.) On the structure of Hrushovski’s pseudoplanes . . . . . 15

<a href="#">01-01-0011</a>			
14	Akito Tsuboi (Univ. of Tsukuba*)	Ramsey's theorem and coher sequences	10
<a href="#">01-01-0010</a>			
15	<u>Leonardo Pacheco</u> (Tohoku Univ.) Kazuyuki Tanaka (Tohoku Univ.)	Fixed-points in epistemic logic	15
<a href="#">01-01-0002</a>			
16	Taishi Kurahashi (Kobe Univ.)	Extensions of the Friedman–Goldfarb–Harrington theorem	15
<a href="#">01-01-0003</a>			
17	<u>Taishi Kurahashi</u> (Kobe Univ.) Haruka Kogure (Kanazawa Univ.)	Monotonic modal logics of provability predicates	15
<a href="#">01-01-0012</a>			
18	Sohei Iwata (Kobe Univ.)	The cut-elimination theorem for Sacchetti's logics	15
<a href="#">01-01-0005</a>			
19	<u>Yuya Okawa</u> (Chiba Univ.) Sohei Iwata (Kobe Univ.) Taishi Kurahashi (Kobe Univ.)	The logic $\mathbf{IL}^-(\mathbf{P})$	15

**12:15–12:30 Research Section Assembly**

# Algebra

March 15th (Wed)

## 9:00–12:00

- [02-01-0026](#)  
1 Daisuke Tambara      b A linear figure in the Cartesian plane satisfying a condition of rectangle  
..... 10
- [02-01-0049](#)  
2 Toshiyuki Abe (Ehime Univ.) Harada's conjecture II and Gramian determinants ..... 10
- [02-01-0038](#)  
3 Kenichiro Tanabe (Tokyo City Univ.) Fusion rules for the fixed point subalgebra of the vertex algebra associated with a non-degenerate and non-positive definite even lattice by an automorphism of order 2 ..... 15
- [02-01-0062](#)  
4 Takeshi Suzuki (Okayama Univ.) On hook formulas for cylindric skew diagrams ..... 15  
Yoshitaka Toyosawa
- [02-01-0017](#)  
5 Yutaka Yoshii (Ibaraki Univ.) Some results on certain subalgebras of the hyperalgebra of a simple algebraic group ..... 10
- [02-01-0025](#)  
6 Yuichiro Goto (Osaka Univ.) A remark on the number of quasi-hereditary structures ..... 15
- [02-01-0020](#)  
7 Kengo Miyamoto (Ibaraki Univ.) On  $\tau$ -tilting finiteness of symmetric algebras of polynomial growth ... 15  
Qi Wang (Tsinghua Univ.)
- [02-01-0057](#)  
8 Sota Asai (Osaka Univ.) The rigid parts of the elements of the real Grothendieck groups ..... 15  
Osamu Iyama (Univ. of Tokyo)
- [02-01-0001](#)  
9 Masahisa Sato On generalized Nakayama–Azumaya's Lemma ..... 10  
(Aichi Univ./Univ. of Yamanashi\*)
- [02-01-0008](#)  
10 Tsutomu Nakamura (Mie Univ.) Large tilting complexes and homomorphic images of Cohen–Macaulay rings ..... 15  
Michal Hrbek (Czech Acad. of Sci.)  
Jan Šťovíček (Charles Univ. in Prague)
- [02-01-0031](#)  
11 Akihiro Higashitani (Osaka Univ.) Effectiveness conjecture on equivariant Ehrhart theory and a kind of its counterexample ..... 15

## 14:15–14:50

- [02-01-0028](#)  
12 Masamichi Kuroda On the classification of monomial GAPN functions ..... 15  
(Nippon Bunri Univ.)  
Kentaro Mitsui (Kobe Univ.)
- [02-01-0009](#)  
13 So Yamagata (Fukuoka Univ.) On classification of  $r$ -sets and a sufficient condition for non-very genericity of arrangements ..... 15

## 15:00–16:00 Talk Invited by Algebra Section

- [02-02-0001](#)  
Naoki Fujita (Kumamoto Univ.) Schubert calculus and convex polytopes

## 16:15–17:15 Talk Invited by Algebra Section

- [02-02-0004](#)  
Hiroki Matsui (Tokushima Univ.) b Spectra of triangulated categories and reconstruction of schemes from their derived categories

## March 16th (Thu)

**9:10–12:00**

- [02-01-0014](#)  
14 Yuya Otake (Nagoya Univ.) Stable categories of  $n$ -spherical modules and  $n$ -torisonfree modules ... 10
- [02-01-0018](#)  
15 Ryo Ishizuka (Tokyo Tech) An explicit construction of perfectoid almost Cohen–Macaulay algebra  
Kazuma Shimomoto (Nihon Univ.) in mixed characteristic ... 15
- [02-01-0002](#)  
16 Shinnosuke Ishiro (Nihon Univ.) The canonical module of a local log-regular ring ... 15
- [02-01-0016](#)  
17 Koji Matsushita (Osaka Univ.) Conic divisorial ideals of toric rings and applications to stable set rings  
... 15
- [02-01-0041](#)  
18 Yuki Ishihara (Tokyo Univ. of Sci.) Computation of ideal operations with parameters ... 15
- [02-01-0010](#)  
19 Kyohei Hattori (Niigata Univ.) Rings of nilpotent elements of monomial derivations on polynomial rings  
Hideo Kojima (Niigata Univ.) ... 15
- [02-01-0011](#)  
20 Kaito Kimura (Nagoya Univ.) Asymptotic depths of localizations of modules ... 10
- [02-01-0032](#)  
21 Naoki Endo (Meiji Univ.) On the stratification of one-dimensional Cohen–Macaulay rings ... 15
- [02-01-0037](#)  
22 Tomohiro Okuma (Yamagata Univ.) The core of ideals in minimally elliptic singularities ... 15  
Ken-ichi Yoshida (Nihon Univ.)  
Kei-ichi Watanabe  
(Nihon Univ./Meiji Univ.)
- [02-01-0045](#)  
23 Ken-ichi Yoshida (Nihon Univ.) Gorensteinness for normal tangent cones of the maximal ideals in  
Tomohiro Okuma (Yamagata Univ.) Brieskorn hypersurfaces ... 15  
Kei-ichi Watanabe  
(Nihon Univ./Meiji Univ.)

**13:00–14:10**

- [02-01-0035](#)  
24 Yoshimune Koreeda (Hiroshima Univ.) Jet scheme of a singular surface of type  $D_4^1$  in characteristic 2 ... 13
- [02-01-0024](#)  
25 Hiroto Akaike (Osaka Univ.) Bounds for the order of automorphism groups of cyclic covering fibra-  
tions of an elliptic surface ... 13
- [02-01-0036](#)  
26 Ryosuke Masuya (Tokyo Metro. Univ.) On weak-bitangents for plane quartics and rational elliptic surfaces ... 13
- [02-01-0013](#)  
27 Tatsuki Yamaguchi (Univ. of Tokyo) Big Cohen–Macaulay test ideals in equal characteristic zero via ultra-  
products ... 13

## March 17th (Fri)

**9:00–12:00**

- [02-01-0044](#)  
28 Makoto Sakurai (Kaichi Gakuen) Dimensions of chiral conformal fields and quasi-coherent sheaves ... 13
- [02-01-0007](#)  
29 Tomohiro Iwami (Kyushu Inst. of Tech.) Majorana double solids for three-dimensional Miyaoka–Yau type in-  
equality with the associated third Chern classes ... 13
- [02-01-0015](#)  
30 Yuta Takahashi (Chuo Univ.) Fano 4-folds with nef tangent bundle in positive characteristic ... 13  
Kiwamu Watanabe (Chuo Univ.)
- [02-01-0043](#)  
31 Taro Yoshino (Univ. of Tokyo) On the degree of irrationality of complete intersections ... 13
- [02-01-0051](#)  
32 Yuki Mizuno (Waseda Univ.) Some examples of noncommutative projective Calabi–Yau schemes ... 13

<a href="#">02-01-0060</a>			
33	<a href="#">Akinari Hoshi</a> (Niigata Univ.) <a href="#">Aiichi Yamasaki</a> (Kyoto Univ.)	Birational classification for algebraic tori (I) .....	13
<a href="#">02-01-0059</a>			
34	<a href="#">Akinari Hoshi</a> (Niigata Univ.) <a href="#">Aiichi Yamasaki</a> (Kyoto Univ.)	Birational classification for algebraic tori (II) .....	13
<a href="#">02-01-0019</a>			
35	<a href="#">Masayuki Sukenaga</a> (Hiroshima Univ.)	Tropical lifting problem for the intersection of plane curves .....	13
<a href="#">02-01-0046</a>			
36	<a href="#">Michio Amano</a> (Meisei Univ.)	On kernels of certain homomorphisms of Witt vectors, II .....	10
<a href="#">02-01-0050</a>			
37	<a href="#">Daiki Kawabe</a> (Tohoku Univ.)	Chow motives of genus one fibrations .....	13
<a href="#">02-01-0003</a>			
38	<a href="#">Tetsuya Ando</a> (Chiba Univ.)	Symmetric quartic extremal inequalities of four variables and K3 surfaces .....	13
<a href="#">02-01-0005</a>			
39	<a href="#">Emiko Yorisaki</a> (Tokyo Metro. Univ.) <a href="#">Shinzo Bannai</a> (Okayama Univ. of Sci.) <a href="#">Hiro-o Tokunaga</a> (Tokyo Metro. Univ.)	Ramified and Split models of rational elliptic surfaces and bitangent lines for a quartic curve .....	10

#### 14:15–14:30 Presentation Ceremony for the 2023 MSJ Algebra Prize

#### 14:40–15:40 Award Lecture for the 2023 MSJ Algebra Prize

<a href="#">02-02-0003</a>	<a href="#">Yoshinori Gongyo</a> (Univ. of Tokyo)	On higher dimensional minimal model theory and its applications
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#### 16:00–17:00 Award Lecture for the 2023 MSJ Algebra Prize

<a href="#">02-02-0002</a>	<a href="#">Satoshi Wakatsuki</a> (Kanazawa Univ.)	Trace formulas and their applications
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March 18th (Sat)

#### 9:15–12:00

<a href="#">02-01-0012</a>			
40	<a href="#">Shigeru Iitaka</a> (Gakushuin Univ.*)	Super perfect numbers of the second kind .....	13
<a href="#">02-01-0021</a>			
41	<a href="#">Masato Kobayashi</a> (Kanagawa Univ.)	Balance for the divisor sum function .....	13
<a href="#">02-01-0034</a>			
42	<a href="#">Yuya Kanado</a> (Nagoya Univ.)	The relation between a generalized Fibonacci sequence and the length of Cunningham chains .....	13
<a href="#">02-01-0061</a>			
43	<a href="#">Shun-ichi Kurino</a> (Nihon Univ.) <a href="#">Masatoshi Nakano</a> (Kesennuma Coll. of Tech.)	The error term in the prime number theorem under the RH .....	10
<a href="#">02-01-0022</a>			
44	<a href="#">Shingo Sugiyama</a> (Nihon Univ.) <a href="#">Ade Irma Suriajaya</a> (Kyushu Univ.)	On a weighted density of zeros of Dirichlet $L$ -functions in a family .....	10
<a href="#">02-01-0023</a>			
45	<a href="#">Yasufumi Hashimoto</a> (Univ. of Ryukyus)	Universality theorem for the Selberg zeta function .....	13
<a href="#">02-01-0039</a>			
46	<a href="#">Takeshi Shinohara</a> (Nagoya Univ.)	On shuffle product of desingularized multiple zeta functions .....	13
<a href="#">02-01-0047</a>			
47	<a href="#">Masaki Kato</a> (Toyama Nat. Coll. of Tech.)	On $q$ -analogues of zeta functions of root systems .....	13
<a href="#">02-01-0048</a>			
48	<a href="#">Masahiro Mine</a> (Sophia Univ.)	Weak denseness theorem for the Hurwitz zeta-function with quadratic irrational parameter .....	13
<a href="#">02-01-0052</a>			
49	<a href="#">Keita Nakai</a> (Nagoya Univ.)	Universality for the iterated integrals for the logarithm of L-functions in the Selberg class .....	10
<a href="#">02-01-0054</a>			
50	<a href="#">Kazunari Sugiyama</a> (Chiba Inst. of Tech.)	The modularity of Siegel's zeta functions .....	13

**14:15–17:00**

02-01-0004

- 51 Wataru Takeda (Tokyo Univ. of Sci.) Quadratic relations for 9th variation Schur functions involving Plücker relations ..... 13  
 Maki Nakasuji  
 (Sophia Univ./Tohoku Univ.)  
 Yoshinori Yamasaki (Ehime Univ.)

02-01-0006

- 52 Yuta Takada (Hokkaido Univ.) Characteristic polynomials of isometries on even unimodular lattices ..... 13

02-01-0030

- 53 Genki Shibukawa (Kobe Univ.) Some monotonic properties of special values of the bivariate complete homogeneous symmetric polynomials ..... 10  
 Yoshiaki Goto  
 (Otaru Univ. of Commerce)

02-01-0040

- 54 Akinari Hoshi (Niigata Univ.) Hasse norm principle for  $M_{11}$  extensions ..... 13  
Kazuki Kanai (Niigata Univ.)  
 Aiichi Yamasaki (Kyoto Univ.)

02-01-0027

- 55 Tomoyoshi Ibukiyama (Osaka Univ.\*) Dimensions of paramodular forms with involutions ..... 10

02-01-0029

- 56 Tomoyoshi Ibukiyama (Osaka Univ.\*) Differential operators on Siegel modular forms and Laplace transforms ..... 13

02-01-0033

- 57 Yuichi Sakai (Kurume Inst. of Tech.) On modular-form solutions of a certain modular linear differential equations for cocompact groups ..... 13

02-01-0042

- 58 Shingo Sugiyama (Nihon Univ.) Integrality of Hecke eigenvalues of Hilbert and Siegel modular forms ..... 10  
 Kenji Sakugawa (Shinshu Univ.)

02-01-0053

- 59 Yuki Kato (Ube Nat. Coll. of Tech.) Almost mathematics and its algebraic  $K$ -theory from non-unital algebras viewpoint ..... 13

02-01-0055

- 60 Norihiko Minami SBNR (stably birationalized unramified sheaf) and Gersten type resolution for any motivic generalized cohomology theory ..... 13  
 (Nagoya Inst. of Tech.)

02-01-0056

- 61 Norihiko Minami Higher codimensional irrationality of counter examples of the integral Hodge conjecture ..... 13  
 (Nagoya Inst. of Tech.)

# Geometry

March 15th (Wed)

## 9:30–11:40

- 03-01-0004  
1 Antoni Kijowski (Okinawa Inst. of Sci. and Tech. Grad. Univ.) Asymptotically mean value harmonic functions ..... 15
- 03-01-0018  
2 Shigeaki Yokota (Tohoku Univ.) Geometry of geometric data set ..... 15
- 03-01-0005  
3 Daisuke Kazukawa (Kyushu Univ.)  
Hiroki Nakajima (Tohoku Univ.)  
Takashi Shioya (Tohoku Univ.) Topological aspects of the space of metric measure spaces ..... 15
- 03-01-0006  
4 Daisuke Kazukawa (Kyushu Univ.)  
Hiroki Nakajima (Tohoku Univ.)  
Takashi Shioya (Tohoku Univ.) Principal bundle structure of the space of metric measure spaces ..... 10
- 03-01-0025  
5 Takumi Matsuka (Tokyo Metro. Univ.) Free products of metric spaces and the coarse Baum–Connes conjecture ..... 15
- 03-01-0007  
6 Yoshito Ishiki (RIKEN) Continua in the Gromov–Hausdorff space ..... 15
- 03-01-0008  
7 Yoshito Ishiki (RIKEN) Metric trees in the Gromov–Hausdorff space ..... 15

## 14:15–16:00

- 03-01-0020  
8 Kentaro Yonemura (Kyushu Univ.) Embedding smooth quandles in Lie groups ..... 10
- 03-01-0017  
9 Yuuki Sasaki (Tokyo Nat. Coll. of Tech.) Some submanifolds of the associative Grassmann manifold ..... 15
- 03-01-0014  
10 Taro Kimura (Nat. Inst. of Tech., Tsuruoka Coll.)  
Katsuya Mashimo (Hosei Univ.) Biharmonic Cartan embeddings ..... 10
- 03-01-0012  
11 Osamu Ikawa (Kyoto Inst. Tech.)  
Katsuya Mashimo (Hosei Univ.) The geometry of orbits of  $\sigma$ -action induced by triality automorphism of  $Spin(8)$  ..... 15
- 03-01-0023  
12 Kazumi Tsukada (Ochanomizu Univ.\*) The complexification of Lie sphere geometry and totally complex submanifolds of the real Grassmann manifold ..... 15
- 03-01-0021  
13 Yusuke Sakane (Osaka Univ.\*) Existence and non-existence of Einstein metrics on compact homogeneous manifolds ..... 15

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

- 03-02-0003  
Daisuke Tarama (Ritsumeikan Univ.) On integrable geodesic flows over a semi-simple Lie group

March 16th (Thu)

## 9:30–12:00

- 03-01-0015  
14 Masaya Kawamura (Kagawa Nat. Coll. of Tech.) On a  $k$ -th Gauduchon metric on compact almost Hermitian manifolds ..... 15
- 03-01-0009  
15 Natsuo Miyatake (Kyushu Univ.)  
Hisashi Kasuya (Osaka Univ.) Uniformization of compact Sasakian manifolds using basic Higgs bundles ..... 15



<a href="#">03-01-0010</a>	16	Natsuo Miyatake (Kyushu Univ.)	Restriction of Donaldson's functional to diagonal metrics on Higgs bundles with not-holomorphic Higgs fields . . . . .	15
<a href="#">03-01-0011</a>	17	Natsuo Miyatake (Kyushu Univ.)	Some generalizations of the Hermitian–Einstein equation of cyclic Higgs bundles and their parabolic equations and the Dirichlet problem . . . . .	15
<a href="#">03-01-0022</a>	18	Koki Matsuzaka (Hokkaido Univ.) Masao Jinzenji (Okayama Univ.)	Recursion relation on moduli space of quasimaps in the case of Calabi–Yau hypersurface in $CP^{N-1}$ . . . . .	15
<a href="#">03-01-0002</a>	19	Kazushi Kobayashi (Osaka Univ.)	A gerby deformation of complex tori and the homological mirror symmetry . . . . .	15
<a href="#">03-01-0030</a>	20	Hayato Nakanishi (Chiba Univ.)	Homological mirror symmetry of toric Fano surfaces via Morse homotopy . . . . .	15
<a href="#">03-01-0001</a>	21	Yuto Yamamoto (IBS-CGP)	Period integrals of hypersurfaces via tropical geometry . . . . .	15
<b>13:00–14:00 Talk Invited by Geometry Section</b>				
<a href="#">03-02-0001</a>		Yoshinori Hashimoto (Osaka Metro. Univ.)	b Recent developments on constant scalar curvature Kähler metrics with cone singularities along a divisor	

### March 17th (Fri)

#### 9:30–11:40

<a href="#">03-01-0003</a>	22	Hiroaki Izumi (Hiroshima Univ.)	Significance of game theory and formulization of in-phase and anti-phase circadian rhythms . . . . .	15
<a href="#">03-01-0026</a>	23	Yoshiki Jikumaru (Kyushu Univ.) Kentaro Hayakawa (Kyoto Univ.) Kazuki Hayashi (Kyoto Univ.) Kenji Kajiwara (Kyushu Univ.) Yohei Yokosuka (Kagoshima Univ.)	On the Michell truss-like structure and discrete log-aesthetic curves based on integrable geometry . . . . .	15
<a href="#">03-01-0027</a>	24	Yoshihiko Suyama (Fukuoka Univ.) Nozomu Matsuura (Kurume Inst. of Tech.)	Extension and approximation of curvature surfaces in generic conformally flat hypersurfaces . . . . .	15
<a href="#">03-01-0019</a>	25	Satoshi Ishiwata (Yamagata Univ.) Hirosi Kawabi (Keio Univ.)	A discretization of a non-symmetric diffusion on a Riemannian manifold . . . . .	10
<a href="#">03-01-0013</a>	26	Ye Zhang (Okinawa Inst. of Sci. and Tech. Grad. Univ.)	Gradient estimates for the heat semigroup on step-two Carnot groups . . . . .	15
<a href="#">03-01-0031</a>	27	Yuichiro Taketomi (Osaka Metro. Univ.)	A maximal element of a moduli space of Riemannian metrics . . . . .	15
<a href="#">03-01-0029</a>	28	Yoshihiko Matsumoto (Osaka Univ.)	Renormalized energy of maps and conformal geodesics . . . . .	15
<b>14:15–14:55</b>				
<a href="#">03-01-0024</a>	29	Tomoshige Yukita (Waseda Univ.)	On nerves and growth rates of 2-dimensional Coxeter systems . . . . .	15
<a href="#">03-01-0028</a>	30	Akira Ushijima (Univ. of Hyogo)	Ceva's and Menelaus' theorems in the hyperbolic plane as Cayley–Klein geometry . . . . .	10
<b>15:10–16:10 Talk Invited by Geometry Section</b>				
<a href="#">03-02-0002</a>		Harish Seshadri (Indian Inst. of Sci., Bangalore)	On the diameter of Kähler manifolds with positive bisectional curvature	

# Complex Analysis

March 15th (Wed)

## 9:30–11:45

- 04-01-0004  
1 Saburo Saitoh (Gunma Univ.\*/Inst. of Reproducing Kernels) Complex analysis and theory of reproducing kernels ..... 10
- 04-01-0005  
2 Saburo Saitoh (Gunma Univ.\*/Inst. of Reproducing Kernels) Complex analysis and division by zero calculus ..... 15
- 04-01-0003  
3 Takanori Ayano (Osaka Metro. Univ.)  
Victor M. Buchstaber (Steklov Inst. of Math.) A relationship between hyperelliptic functions of genus 3 and elliptic functions ..... 15
- 04-01-0001  
4 Shingo Sugiyama (Nihon Univ.) The existence of equivariant functions and the Schwarzian derivative ..... 10
- 04-01-0002  
5 Yoshikazu Yamagishi (Ryukoku Univ.)  
Takuro Uezono (Mars Networks Corp.)  
Takamichi Sushida (Salesian Polytech.) Voronoi tiling and circle packing on spiral lattices with rotational symmetry ..... 10
- 04-01-0016  
6 Shun Kumagai (Tohoku Univ.) Voronoi decomposition of origamis ..... 15
- 04-01-0013  
7 Shinpei Baba (Osaka Univ.) Bending maps of Teichmüller spaces and character varieties ..... 15
- 04-01-0014  
8 Yohei Komori (Waseda Univ.) Applications of canonical polygons of Zieschang–Vogt–Coldewey ..... 15
- 04-01-0017  
9 Masashi Kisaka (Kyoto Univ.) Polynomial-like mappings and transcendental entire functions with irrationally indifferent fixed points ..... 15

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

- 04-02-0003  
Toshihiro Nakanishi (Shimane Univ.) Teichmüller space of the genus two surface and Kleinian groups

## 15:30–16:30 Award Lecture for the 2022 MSJ Analysis Prize

- 04-02-0002  
Katsuhiko Matsuzaki (Waseda Univ.) Curves and function spaces of absolutely continuous Teichmüller spaces

March 16th (Thu)

## 9:30–11:45

- 04-01-0010  
10 Kohei Ueno (Daido Univ.) Dynamics of superattracting skew products ..... 15
- 04-01-0006  
11 Shaolin Chen (Hengyang Normal Univ.)  
Hidetaka Hamada (Kyushu Sangyo Univ.)  
Jian-Feng Zhu (Huaqiao Univ.) Lipschitz constant of harmonic Bloch functions and composition operators on Bloch and Hardy type spaces ..... 15
- 04-01-0008  
12 Hidetaka Hamada (Kyushu Sangyo Univ.)  
Gabriela Kohr (Babeş-Bolyai Univ.)  
Mirela Kohr (Babeş-Bolyai Univ.) Fekete–Szegő problem for univalent mappings in one and higher dimensions ..... 15
- 04-01-0009  
13 Hidetaka Hamada (Kyushu Sangyo Univ.)  
Gabriela Kohr (Babeş-Bolyai Univ.) Loewner PDE in infinite dimensions ..... 15

04-01-0012

- 14 Shaolin Chen (Hengyang Normal Univ.) Some sharp Schwarz–Pick type estimates and their applications of  
Hidetaka Hamada harmonic and pluriharmonic functions ..... 15  
 (Kyushu Sangyo Univ.)

04-01-0015

- 15 Shaolin Chen (Hengyang Normal Univ.) Schwarz type lemmas and their applications in Banach spaces ..... 15  
Hidetaka Hamada  
 (Kyushu Sangyo Univ.)  
 Saminathan Ponnusamy  
 (Indian Inst. of Tech. Madras)  
 Ramakrishnan Vijayakumar  
 (Indian Inst. of Tech. Madras)

04-01-0011

- 16 Yuta Watanabe (Univ. of Tokyo)  $L^2$ -type Dolbeault isomorphisms and vanishing theorems for logarithmic  
 sheaves twisted by multiplier ideal sheaves ..... 15

04-01-0007

- 17 Takeo Ohsawa (Nagoya Univ.) On the Levi problem on Kähler manifolds under the negativity of  
 canonical bundles on the boundary ..... 15

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

04-02-0001

- Makoto Abe (Hiroshima Univ.) Domains over a Stein manifold satisfying the Oka–Grauert principle

# Functional Equations

March 15th (Wed)

## 9:30–12:00

05-01-0029

- 1 Yumiko Takei  
(Ibaraki Nat. Coll. of Tech.)

On the expression of Voros coefficients for the hypergeometric differential equation of type (1,1,1,2) in terms of the topological recursion, and its applications ..... 12

05-01-0036

- 2 Saiei-Jaeyeong Matsubara-Heo  
(Kumamoto Univ.)

The signature of the invariant hermitian form for a regular holonomic GKZ system ..... 12

- Yoshiaki Goto  
(Otaru Univ. of Commerce)

05-01-0038

- 3 Hidekazu Ito (Kanagawa Univ.)

Birkhoff normalization of a family of symplectic maps and superintegrability of Hamiltonian systems ..... 12

05-01-0027

- 4 Yutaka Kamimura  
(Tokyo Univ. of Marine Sci. and Tech.\*)

Two-component solitons via an energy dependent inverse scattering .. 12

05-01-0025

- 5 Yuki Hata (Osaka Pref. Univ.)  
Hideaki Matsunaga  
(Osaka Metro. Univ.)

Asymptotic stability in a linear differential equation with two delays ..... 12

05-01-0064

- 6 Masakazu Onitsuka  
(Okayama Univ. of Sci.)

On Ulam stability of two-dimensional linear differential systems ..... 10

05-01-0061

- 7 Hiroyuki Usami (Gifu Univ.)

Study on nonexistence results of positive solutions of ODEs without assuming monotonicities on nonlinear terms ..... 10

05-01-0003

- 8 Tetsutaro Shibata (Hiroshima Univ.)

Global and asymptotic behaviors of bifurcation curves of one-dimensional nonlocal elliptic equations ..... 12

05-01-0058

- 9 Naoki Hamamoto (Osaka Metro. Univ.)

The Poincaré constant for curl-free vector fields on a ball ..... 12

05-01-0019

- 10 Saburo Saitoh  
(Gunma Univ.\*/Inst. of Reproducing Kernels)

Functional equations and theory of reproducing kernels ..... 10

05-01-0020

- 11 Saburo Saitoh  
(Gunma Univ.\*/Inst. of Reproducing Kernels)

Representations of quotients  $g/f = h$  in terms of  $g=fh$  ..... 12

## 14:15–16:15

05-01-0034

- 12 Toshio Horiuchi (Ibaraki Univ.)

On general Caffarelli–Kohn–Nirenberg type inequalities involving non-doubling weights ..... 12

05-01-0014

- 13 Ryuji Kajikiya  
(Osaka Electro-Comm. Univ.)

Boundedness of critical points in the symmetric mountain pass lemma ..... 12

05-01-0053

- 14 Goro Akagi (Tohoku Univ.)  
Hiroyuki Miyakawa (Tohoku Univ.)

Maximal regularity of distributional solutions to degenerate elliptic systems for locally integrable data ..... 12

05-01-0046

- 15 Goro Akagi (Tohoku Univ.)  
Kotaro Sato (Tohoku Univ.)

On some quasistatic evolution equation arising from fracture mechanics ..... 12

05-01-0037

- 16 Tomoyuki Oka (Univ. of Tokyo)

Corrector results for space-time homogenization of fast diffusion equations without assumptions for smoothness of coefficients ..... 12

05-01-0026	17 Takashi Suzuki (Osaka Univ.)	Mathematical analysis for Brownian particle gas . . . . .	5
05-01-0068	18 Koichi Taniguchi (Tohoku Univ.) Noboru Chikami (Nagoya Inst. of Tech.) Masahiro Ikeda (RIKEN/Keio Univ.) Slim Tayachi (Univ. de Tunis El Manar)	Unconditional uniqueness and non-uniqueness of solutions for Hardy–Hénon parabolic equations . . . . .	10
05-01-0050	19 Masahiko Shimojo (Tokyo Metro. Univ.) Jong Shenq Guo (Tamkang Univ.) Amy Ai-Ling Poh (Univ. of Tokyo)	Spreading behavior of an SIR model with non-local dispersal . . . . .	10
05-01-0039	20 Masahiko Shimojo (Tokyo Metro. Univ.) Jong Shenq Guo (Tamkang Univ.)	Spreading behavior of a predator-prey system with fractional Laplacian . . . . .	12
<b>16:30–17:30 Award Lecture for the 2022 MSJ Analysis Prize</b>			
05-02-0003	Masaru Ikehata (Hiroshima Univ.)	Development of the time domain enclosure method	

### March 16th (Thu)

#### 9:15–12:00

05-01-0001	21 Masaaki Mizukami (Kyoto Univ. of Edu.) Yuya Tanaka (Tokyo Univ. of Sci.)	Non-simultaneous blow-up in a two-species chemotaxis-competition model with single production . . . . .	12
05-01-0002	22 Yuya Tanaka (Tokyo Univ. of Sci.)	Finite-time blow-up in a degenerate parabolic–elliptic Keller–Segel system with logistic source . . . . .	12
05-01-0006	23 Yutaro Chiyo (Tokyo Univ. of Sci.) Masaaki Mizukami (Kyoto Univ. of Edu.)	Boundedness of solutions to a chemotaxis system for tumor angiogenesis . . . . .	12
05-01-0054	24 Takeshi Suguro (Kyoto Univ.)	Well-posedness of the Cauchy problem of a parabolic-elliptic Keller–Segel system in uniformly local spaces . . . . .	12
05-01-0059	25 Tatsuya Hosono (Tohoku Univ.) Takayoshi Ogawa (Tohoku Univ.)	Global existence of solutions to the 4D attraction-repulsion chemotaxis system and applications of Brezis–Merle inequality . . . . .	12
05-01-0065	26 Tokuhiko Eto (Univ. of Tokyo)	On a discrete scheme for the mean curvature flow with prescribed contact angle . . . . .	10
05-01-0052	27 Kiichi Tashiro (Tokyo Tech)	On the construction of canonical generalized mean curvature flow by elliptic regularization . . . . .	10
05-01-0049	28 Tatsuya Miura (Tokyo Tech) Kensuke Yoshizawa (Kyushu Univ.)	Complete classification of planar $p$ -elasticae . . . . .	12
05-01-0031	29 Takeyuki Nagasawa (Saitama Univ.)	A lower estimate of the life-span and a blow-up rate for non-local curvature flows for plane curves . . . . .	10
05-01-0035	30 Tatsu-Hiko Miura (Hirosaki Univ.)	Error estimate for classical solutions to the heat equation in a moving thin domain and its limit equation . . . . .	12
05-01-0004	31 Hirokazu Ninomiya (Meiji Univ.)	Example of pattern formation by equal diffusion . . . . .	12
05-01-0005	32 Hirokazu Ninomiya (Meiji Univ.)	Dynamics of area-preserving curvature flow of a convex plane curve in an inhomogeneous medium . . . . .	12

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

05-02-0002

Takeyuki Nagasawa (Saitama Univ.) The decomposition of the Möbius energies and wave maps

March 17th (Fri)

**9:30–12:00**

05-01-0010

33 Yohei Sato (Saitama Univ.) Even ground state for nonlinear Schrödinger systems with repulsive interaction ..... 12

05-01-0032

34 Hiroyuki Hirayama (Univ. of Miyazaki) Existence and stability of ground states for the system of nonlinear Schrödinger equations with derivative nonlinearity ..... 12  
Masahiro Ikeda (RIKEN/Keio Univ.)

05-01-0062

35 Noriyoshi Fukaya (Tokyo Univ. of Sci.) Instability of stationary solutions for double power nonlinear Schrödinger equations in one dimension ..... 12  
Masayuki Hayashi (Kyoto Univ.)

05-01-0066

36 Yuji Sagawa (Chiba Inst. of Tech.) Finite time blow up solutions to the nonlinear Schrödinger equation with harmonic potential for arbitrary small initial data ..... 12  
Takuya Sato (Tohoku Univ.)  
Shota Kawakami (Saitama Univ.)

05-01-0015

37 Hiroyuki Hirayama (Univ. of Miyazaki) Well-posedness of the Cauchy problem for the two dimensional quadratic nonlinear Schrödinger equation with angular regularity ..... 12  
Shinya Kinoshita (Saitama Univ.)  
Mamoru Okamoto (Osaka Univ.)

05-01-0057

38 Shun Tsubara (Tohoku Univ.) Global well-posedness for the Sobolev critical nonlinear Schrödinger system in four space dimensions ..... 12  
Takayoshi Ogawa (Tohoku Univ.)

05-01-0055

39 Takuya Sato (Tohoku Univ.) The initial boundary value problem of nonlinear Schrödinger equations with a nonlinear Neumann boundary condition ..... 12  
Nakao Hayashi (Tohoku Univ.)  
Takayoshi Ogawa (Tohoku Univ.)

05-01-0048

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

05-01-0047

41 Masahiro Ikeda (RIKEN/Keio Univ.) Global dynamics below a threshold for the nonlinear Schrödinger equations with the Kirchhoff boundary and the repulsive Dirac delta boundary on a star graph ..... 12  
Takahisa Inui (Osaka Univ./Univ. of British Columbia)  
Masaru Hamano (Waseda Univ.)  
Ikkei Shimizu (Osaka Univ.)

05-01-0024

42 Junpei Kawakami (Kyoto Univ.) Averaging of strong magnetic nonlinear Schrödinger equations in energy space ..... 12

**14:15–16:15**

05-01-0060

43 Kenjiro Ishizuka (Kyoto Univ.) Long-time asymptotics of the one-dimensional damped nonlinear Klein–Gordon equation with a potential ..... 12

05-01-0021

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

05-01-0022

45 Satoshi Masaki (Osaka Univ.) On classification of complex-valued cubic nonlinear systems ..... 12

05-01-0041

46 Kimitoshi Tsutaya (Hiroshima Univ.) Blow up of solutions of semilinear wave equations with time-dependent damping ..... 12  
Yuta Wakasugi (Hiroshima Univ.)

05-01-0063

47 Ikki Fukuda (Shinshu Univ.) Large time behavior and optimal decay estimate for solutions to the Cauchy problem for the generalized KP–Burgers equation in 2D ..... 10  
Hiroyuki Hirayama (Univ. of Miyazaki)

- 05-01-0051  
48 Slim Ibrahim (Univ. of Victoria) Phase transition threshold and stability of magnetic skyrmions ..... 12  
Ikkei Shimizu (Osaka Univ.)
- 05-01-0040  
49 Masashi Ohnawa On the shallow water systems under periodic boundary conditions ... 12  
(Tokyo Univ. of Marine Sci. and Tech.)  
Masahiro Suzuki (Nagoya Inst. of Tech.)
- 05-01-0033  
50 Takashi Furuya (Shimane Univ.) Inverse medium scattering problems with Kalman filter techniques ... 10

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

- 05-02-0004  
Naoyasu Kita (Kumamoto Univ.)<sup>b</sup> On behaviors of solutions to nonlinear Schrödinger equations with complex coefficient in its nonlinearity

March 18th (Sat)

**9:30–12:00**

- 05-01-0044  
51 Naoyuki Iwata (Nagoya Inst. of Tech.) Stationary solutions of the Vlasov–Poisson system for a multicomponent  
Masahiro Suzuki (Nagoya Inst. of Tech.) plasma ..... 12
- 05-01-0007  
52 Masahiro Suzuki (Nagoya Inst. of Tech.) Stability and instability of stationary solutions of the Vlasov–Poisson  
Masahiro Takayama (Keio Univ.) system ..... 12  
Katherine Zhiyuan Zhang  
(New York Univ.)
- 05-01-0011  
53 Taichi Eguchi (Waseda Univ.) Energy equality of MHD system under a weaker condition on magnetic  
field ..... 12
- 05-01-0056  
54 Ryosuke Nakasato (Waseda Univ.)<sup>b</sup> Asymptotic stability for quasi-linear plasma models with Hall effects  
via energy methods on Fourier–Herz spaces ..... 12
- 05-01-0017  
55 Sonae Hadama (Kyoto Univ.) Stability of Fermi gas at zero temperature for the Hartree equation  
..... 12
- 05-01-0008  
56 Hajime Koba (Osaka Univ.) Mathematical modeling of inviscid multiphase flow system with surface  
flow ..... 10
- 05-01-0009  
57 Hajime Koba (Osaka Univ.) Mathematical modeling of inviscid multiphase flow system with phase  
transition ..... 10
- 05-01-0043  
58 Ken Furukawa (RIKEN) Data assimilation of the primitive equations in maximal  $L^p$ - $L^q$  settings  
..... 10
- 05-01-0023  
59 Kei Noda (Kyoto Univ.) Analyticity in space-time of solutions to evolution equations with mul-  
tilinear operator based on maximal regularity ..... 10
- 05-01-0016  
60 Yoshiki Iida (Waseda Univ.) Energy equality for the 3D inhomogeneous Navier–Stokes equations in  
Lorentz–Besov spaces ..... 12
- 14:15–16:15**
- 05-01-0028  
61 Motofumi Aoki (Tohoku Univ.) On the ill-posedness for the full system of the compressible Navier–  
Tsukasa Iwabuchi (Tohoku Univ.) Stokes equations ..... 12
- 05-01-0045  
62 Dáithí Ó hAodha (Tohoku Univ.) Optimality of the decay estimate of solutions to the linearised curl-free  
Tsukasa Iwabuchi (Tohoku Univ.) compressible Navier–Stokes equations ..... 12
- 05-01-0070  
63 Takahiro Okabe (Osaka Univ.) Forced rapidly dissipative Navier–Stokes flows ..... 12  
Lorenzo Brandolese (Univ. Lyon 1)

05-01-0030

- 64 Tomoyuki Nakatsuka (Matsuyama Univ.) On solvability of the time-periodic problem for the Navier–Stokes equation ..... 12

05-01-0012

- 65 Yuta Koizumi (Waseda Univ.) Toya Taniguchi (Waseda Univ.) Convergence of approximating solutions of the Navier–Stokes equations ..... 12

05-01-0013

- 66 Hiroki Ohyama (Kyushu Univ.) Keiji Yoneda (Kyushu Univ.) Fast rotation limit for the magnetohydrodynamics equations in a 3D layer ..... 10

05-01-0042

- 67 Takanari Egashira (Kyushu Univ.) Ryo Takada (Univ. of Tokyo) Large time behavior of solutions to the 3D rotating Navier–Stokes equations ..... 10

05-01-0069

- 68 Mikihiro Fujii (Kyushu Univ.) Global strong solutions to the compressible Navier–Stokes equation with the Coriolis force ..... 12

05-01-0067

- 69 Hirokazu Saito (Univ. of Electro-Comm.) On decay properties of solutions to the two-phase Stokes equations with surface tension and gravity ..... 10

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

05-02-0001

- Youhei Tsutsui (Kyoto Univ.) Convergence to the initial data and weighted estimates for the incompressible Navier–Stokes equations



# Real Analysis

March 17th (Fri)

## 9:00–11:45

06-01-0019

- 1 Masashi Toyoda (Toho Univ.) Fixed point theorem in a ball space and Caristi fixed point theorem ..... 15

06-01-0023

- 2 Sachiko Atsushiba (Tokyo Woman's Christian Univ.) Convergence theorems for families of monotone nonexpansive mappings in ordered Banach spaces ..... 15

06-01-0024

- 3 Yasunori Kimura (Toho Univ.) Approximation of common fixed points by modified shrinking projection methods ..... 15

06-01-0029

- 4 Koji Aoyama (Chiba Univ.) Mean convergence theorems with respect to attractive points in a Hilbert space ..... 15

06-01-0006

- 5 Naoya Hatano (Chuo Univ.) Proper embedding for Morrey–Lorentz spaces ..... 15

06-01-0011

- 6 Denny Iveral Hakim (Bandung Inst. of Tech.) Bourgain–Morrey spaces and its applications ..... 15  
Naoya Hatano (Chuo Univ.)  
Toru Nogayama (Chuo Univ.)  
Yoshihiro Sawano (Chuo Univ.)

06-01-0017

- 7 Toru Nogayama (Chuo Univ.) Complex interpolation for mixed Morrey spaces ..... 15

06-01-0018

- 8 Koichi Taniguchi (Tohoku Univ.) Boundedness of composition operators on Besov spaces ..... 15  
Masahiro Ikeda (RIKEN/Keio Univ.)  
Isao Ishikawa (Ehime Univ.)

06-01-0031

- 9 Takanobu Hara (Hokkaido Univ.) Strong barriers for weighted quasilinear equations ..... 15

## 14:15–15:25

06-01-0020

- 10 Toshiharu Kawasaki (Tamagawa Univ./Chiba Univ./Chiba Univ.) On the difference between the families of extended integrable functions and extended primitive functions ..... 15

06-01-0032

- 11 Ryoichi Kunisada On topologically invariant means and almost convergence ..... 15

06-01-0027

- 12 Takumi Terae (Tokyo Tech) An equality condition for supremum increments of distorted measures in non-additive measure theory ..... 15  
Toshiaki Murofushi (Tokyo Tech)

06-01-0033

- 13 Yoshiaki Okazaki (Fuzzy Logic Systems Inst.) Fréchet–Nikodym uniformity on a ring determined by a non-additive measure ..... 15  
Ryoji Fukuda (Oita Univ.)  
Aoi Honda (Kyushu Inst. of Tech.)

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

06-02-0002

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

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

06-02-0003

- Hitoshi Tanaka (Tsukuba Univ. of Tech.) Dyadic cubes analysis, dyadic rectangles analysis

## March 18th (Sat)

**9:00–12:00**

06-01-0021

- 14 Goro Akagi (Tohoku Univ.) Yoshihito Nakajima (Tohoku Univ.) Solvability of evolution equations involving time-fractional derivatives and applications ..... 15

06-01-0013

- 15 Kosuke Kita (Waseda Univ.) Ôtani Mitsuharu (Waseda Univ.) Mosco convergence of functionals associated with Laplacian under non-linear boundary conditions ..... 15

06-01-0025

- 16 Takanori Kuroda (Waseda Univ.) Mitsuharu Ôtani (Waseda Univ.) Asymptotic behaviors of complex solutions for the semilinear heat equation with arbitrarily large initial energy ..... 15

06-01-0026

- 17 Shohei Kohatsu (Tokyo Univ. of Sci.) Tomomi Yokota (Tokyo Univ. of Sci.) Behavior of weak solutions to a Keller–Segel system with gradient dependent chemotactic coefficient ..... 15

06-01-0001

- 18 Yutaro Chiyo (Tokyo Univ. of Sci.) Boundedness and stabilization in a quasilinear attraction-repulsion chemotaxis system ..... 15

06-01-0030

- 19 Tobias Black (Paderborn Univ.) Mario Fuest (Leibniz Univ. Hannover) Johannes Lankeit (Leibniz Univ. Hannover) Masaaki Mizukami (Kyoto Univ. of Edu.) Possible points of blow-up in a chemotaxis system with environmental dependent logistic source ..... 15

06-01-0022

- 20 Yoshiho Akagawa (Gifu Nat. Coll. of Tech.) Risei Kano (Kochi Univ.) Takeshi Fukao (Kyoto Univ. of Edu.) A quasi-variational inequality in plasticity model ..... 15

06-01-0010

- 21 Akiko Morimura (Japan Women's Univ.) Toyohiko Aiki (Japan Women's Univ.) On existence and uniqueness of solutions to the moisture transport model in porous materials ..... 15

06-01-0009

- 22 Chiharu Kosugi (Japan Women's Univ.) Toyohiko Aiki (Japan Women's Univ.) Omega-limit sets for the strong solutions to initial and boundary value problems for compressible elastic curves ..... 15

06-01-0028

- 23 Kota Kumazaki (Nagasaki Univ.) Adrian Muntean (Karlstads Univ.) A multiscale model describing the wetting-drying phenomenon in porous materials ..... 15

**14:15–16:45**

06-01-0012

- 24 Daiki Mizuno (Chiba Univ.) Ken Shirakawa (Chiba Univ.) Well-posedness and regularity results for a class of total variation flows of pseudo-parabolic types ..... 15

06-01-0015

- 25 Shodai Kubota (Kanagawa Univ.) Periodic solutions for Warren–Kobayashi–Lobkovsky–Carter type systems of grain boundary motions ..... 15

06-01-0005

- 26 Hiroshi Watanabe (Oita Univ.) Ken Shirakawa (Chiba Univ.) Salvador Moll (Univ. València) Existence of solutions to a phase-field model of 3D-grain boundary motion ..... 15

06-01-0007

- 27 Ken Shirakawa (Chiba Univ.) Shodai Kubota (Kanagawa Univ.) Optimal inner-heat controls of Warren–Kobayashi–Lobkovsky–Carter type systems under higher dimensional settings ..... 15

06-01-0014

- 28 Takeshi Fukao (Kyoto Univ. of Edu.) Pierluigi Colli (Univ. of Pavia) Luca Scarpa (Politecnico di Milano) The Cahn–Hilliard system of LW model with forward-backward dynamic boundary condition ..... 15

06-01-0004

- 29 Noriaki Yamazaki (Kanagawa Univ.) Approximation of singular optimal control problems for doubly quasi-variational evolution inclusions ..... 15  
 Nobuyuki Kenmochi (Chiba Univ.\*)  
 Ken Shirakawa (Chiba Univ.)

06-01-0002

- 30 Akio Ito Tumor invasion model with quasi-variational structural porous medium diffusion ..... 15

06-01-0008

- 31 Toshitaka Matsumoto (Shizuoka Univ.) Generation of evolution operators under a generalized stability condition ..... 15  
 Naoki Tanaka (Shizuoka Univ.)

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

06-02-0001

- Shunsuke Kurima (Tokyo Univ. of Sci.) Time discretization methods for phase field systems

# Functional Analysis

March 15th (Wed)

## 9:30–12:00

07-01-0023

- 1 Yoritaka Iwata (Kansai Univ.) Generalization of von Neumann equation based on the logarithmic representation of unbounded operators ..... 15

07-01-0016

- 2 Shuji Watanabe (Gunma Univ.) A new operator-theoretical treatment of the BCS gap equation of superconductivity and its application to the second-order phase transition ..... 15

07-01-0033

- 3 Takashi Aoki (Kindai Univ.\*)  
Ryuichi Ishimura (Chiba Univ.\*)  
Yasunori Okada (Chiba Univ.) Differential operator representations of continuous homomorphisms on some spaces of entire functions ..... 15

07-01-0007

- 4 Fumio Hiroshima (Kyushu Univ.) Positivity improving for the translation invariant Nelson model ..... 15

07-01-0010

- 5 Itaru Sasaki (Shinshu Univ.)  
Yasumichi Matsuzawa (Shinshu Univ.)  
Shinnosuke Izumi (Shinshu Univ.)  
Kota Imura  
(Nagano Pref. Fujimi High School) Analyticity of the ground state for the pair interaction model ..... 15

07-01-0027

- 6 Naoya Yoshida (Ritsumeikan Univ.) Bohr–Sommerfeld quantization condition for self-adjoint Dirac operators ..... 15

07-01-0003

- 7 Kyohei Itakura (Univ. of Tokyo) On resonances for inverted harmonic oscillators ..... 15

07-01-0012

- 8 Kota Ujino (Kyushu Univ.) Exact Hausdorff dimension of the spectral measure for the graph Laplacian on a sparse tree ..... 15

07-01-0014

- 9 Kota Ujino (Kyushu Univ.) No eigenvectors embedded in the singular continuous spectrum of Schrödinger operators ..... 15

## 14:15–16:15

07-01-0001

- 10 Hiroki Yagisita (Kyoto Sangyo Univ.) Variational formulation and self-adjointness of Laplace operator in infinite dimensional space  $\mathbb{R}^\infty$  ..... 10

07-01-0002

- 11 Hiroki Yagisita (Kyoto Sangyo Univ.) Analytic semigroup of infinite dimensional interacting Brownian motion on  $\mathbb{R}^\infty$  ..... 5

07-01-0021

- 12 Kiyoshi Mochizuki  
(Chuo Univ./Tokyo Metro. Univ.\*)  
Hideo Nakazawa  
(Nippon Medical School) The principle of limiting amplitude for dissipative wave equations in magnetic fields ..... 15

07-01-0031

- 13 Hirokazu Ohya (Salesian Polytech.) Embedding properties for some Weighted Sobolev spaces with growing weight ..... 15

07-01-0032

- 14 Kenta Higuchi (Ehime Univ.)  
Takuya Watanabe (Ritsumeikan Univ.) Two-level adiabatic transition probability for small avoided crossings generated by tangential intersections ..... 15

07-01-0020

- 15 Yoshihisa Miyanishi (Shinshu Univ.) Spectrum of the Neumann–Poincaré operator on thin domains ..... 10

07-01-0024

- 16 Yoshihiro Anahara (Yokohama Nat. Univ.) Limit theorem for quantum walk on one dimensional lattice with inflows and outflows ..... 15  
 Norio Konno (Yokohama Nat. Univ.)  
 Morioka Hisashi (Ehime Univ.)  
 Etsuo Segawa (Yokohama Nat. Univ.)

07-01-0022

- 17 Kenta Higuchi (Ehime Univ.) Resonance expansion for finitely perturbed free quantum walks on the line ..... 15  
 Hisashi Morioka (Ehime Univ.)  
 Etsuo Segawa (Yokohama Nat. Univ.)

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

07-02-0001

- Toshimitsu Takaesu (Gunma Univ.) On the spectral analysis of interacting quantum field systems

March 16th (Thu)

**9:30–12:00**

07-01-0036

- 18 Takashi Satomi (Univ. of Tokyo) Inequality for the convolutions on unimodular locally compact groups and the optimal constant of related inequalities ..... 15

07-01-0029

- 19 Toshihisa Kubo (Ryukoku Univ.) On the standardness of homomorphisms between generalized Verma modules for  $\mathfrak{sl}(3, \mathbb{C})$  ..... 15

07-01-0038

- 20 Hiroshi Oda (Takushoku Univ.) Inversion formula for Opdam–Cherednik transform associated with a root system of type  $BC$  ..... 15

07-01-0037

- 21 Koichi Kaizuka (Nippon Medical School) Some remarks on the Dirac operator on symmetric spaces ..... 15

07-01-0026

- 22 Ryosuke Nakahama (NTT Inst. for Funda. Math.) Computation of weighted Bergman inner products on block off-diagonal matrices in bounded symmetric domains for  $Sp(2r, \mathbb{R})$  ..... 15

07-01-0015

- 23 Yuichiro Tanaka (Univ. of Tokyo) A unitary trick for the multiplicity-freeness property ..... 15

07-01-0039

- 24 Víctor Pérez-Valdés (Univ. of Tokyo) Construction and classification of conformally equivariant differential symmetry breaking operators from a vector bundle over  $S^3$  to a line bundle over  $S^2$  ..... 15

07-01-0018

- 25 Hideto Nakashima (Inst. of Stat. Math.) Decomposition formulas for gamma matrices of zeta functions associated with homogeneous cones ..... 15

**13:10–14:10 Talk Invited by Functional Analysis Section**

07-02-0002

- Takashi Hashimoto (Tottori Univ.) Quantization of the moment map on symplectic vector spaces and minimal representation

March 17th (Fri)

**9:30–12:00**

07-01-0025

- 26 Shiho Oi (Niigata Univ.) Algebraic reflexivity of isometry groups of Lipschitz algebras ..... 15

07-01-0034

- 27 Yuta Enami (Niigata Univ.) Surjective isometries on the Banach algebra of analytic functions with Takeshi Miura (Niigata Univ.)  $C^n$ -boundary values ..... 12

07-01-0004

- 28 Takeshi Miura (Niigata Univ.) Tingley’s problem for uniformly closed function algebras ..... 15  
 Daisuke Hirota (Niigata Univ.)

<a href="#">07-01-0030</a>			
29	<a href="#">Takashi Sano</a> (Yamagata Univ.) Kazuki Takeuchi (Yamagata Univ.)	Inertia of Kraus matrices	10
<a href="#">07-01-0009</a>			
30	Masaru Nagisa (Ritsumeikan Univ./Chiba Univ.)	The $p$ -norm of some matrices	10
<a href="#">07-01-0006</a>			
31	<a href="#">Hiroaki Tohyama</a> (Maebashi Inst. of Tech.) Eizaburo Kamei Masayuki Watanabe (Maebashi Inst. of Tech.)	Operator inequalities related to Young's inequality	15
<a href="#">07-01-0019</a>			
32	<a href="#">Takeaki Yamazaki</a> (Toyo Univ.) Hiroyuki Osaka (Ritsumeikan Univ.)	Limit of iterated induced Aluthge transformations of centered operators	15
<a href="#">07-01-0013</a>			
33	Hiroyuki Osaka (Ritsumeikan Univ.) Tomasz Młȳnik (Univ. of Gdańsk) Marcin Marciniak (Univ. of Gdańsk)	On a class of $K$ -entanglement witnesses	15
<a href="#">07-01-0011</a>			
34	Yuki Seo (Osaka Kyoiku Univ.)	On data processing inequality for quantum $\mathfrak{h}_\alpha$ -Rényi divergences of positive order	15
<b>14:15–15:30</b>			
<a href="#">07-01-0017</a>			
35	Hiroshi Inoue (Kyushu Sangyo Univ.)	An unbounded generalization of Tomita's observable algebras II	15
<a href="#">07-01-0035</a>			
36	Kei Ito (Univ. of Tokyo)	Cartan subalgebras of $C^*$ -algebras associated with complex dynamical systems	10
<a href="#">07-01-0028</a>			
37	Ryoya Arimoto (Kyoto Univ.)	On the type of the von Neumann algebra of an open subgroup of the Neretin group	15
<a href="#">07-01-0005</a>			
38	Satoshi Goto (Sophia Univ.)	On flat part commuting squares	10
<b>15:45–16:45</b>	<b>Talk Invited by Functional Analysis Section</b>		
<a href="#">07-02-0003</a>			
	Masaru Nagisa (Ritsumeikan Univ./Chiba Univ.)	Non-linear traces on the algebra of compact operators and majorization	

## Statistics and Probability

March 15th (Wed)

### 10:00–11:30

- 08-01-0006  
1 Naoki Kubota (Nihon Univ.) Lipschitz-type estimates for the time constant of the frog model . . . . . 15
- 08-01-0004  
2 Takumu Ooi (Kyoto Univ.) Convergence of time-changed  $\alpha$ -stable processes by GMC . . . . . 15
- 08-01-0019  
3 Mikio Hirokane (Osaka Univ.) A limit theorem for generalized tempered stable processes and their quadratic variations with stable index tending to two . . . . . 15  
Masaaki Fukasawa (Osaka Univ.)
- 08-01-0008  
4 Yuki Suzuki (Keio Univ.) A diffusion process with a symmetric stable potential on the negative side in  $\mathbb{R}$  . . . . . 15  
Hiroshi Takahashi (Keio Univ.)  
Yozo Tamura
- 08-01-0005  
5 Yuki Suzuki (Keio Univ.) Limit theorems for a diffusion process with a non-selfsimilar random potential . . . . . 15
- 08-01-0007  
6 Shigeyoshi Ogawa (Ritsumeikan Univ.) Another representation of the mean value theorem for noncausal stochastic integrals . . . . . 10

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

- 08-02-0001  
Shuta Nakajima (Meiji Univ.) First-passage percolation and its related topics

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

- 08-02-0002  
Song Liang (Waseda Univ.) A mechanical model of Brownian motion

March 16th (Thu)

### 10:20–11:10

- 08-01-0011  
7 Haruyoshi Tanaka (Wakayama Med. Univ.) On dimension estimates in nonconformal graph iterated function systems via asymptotic perturbation . . . . . 15
- 08-01-0009  
8 Ryoji Takano (Osaka Univ.) Large deviation principle for the Lyons–Victoir extension . . . . . 15
- 08-01-0002  
9 Hiroki Yagisita (Kyoto Sangyo Univ.) Any Gibbs measure on infinite-dimensional space  $\mathbb{R}^\infty$  defines a regular Dirichlet form with local property on compact space  $(\mathbb{R} \cup \{\infty\})^\infty$  . . . . . 10
- 08-01-0013  
10 Yuta Nakagawa (Kyoto Univ.) Density of states for Schrödinger operators associated with Gibbs point processes and nonpositive potentials . . . . . 10

### 11:20–11:50 Research Section Assembly

March 17th (Fri)

### 9:50–11:35

- 08-01-0016  
11 Teruo Tanaka (Hiroshima City Univ.) Prophet inequalities for finite stage multiparameter optimal stopping problems . . . . . 10
- 08-01-0017  
12 Toshiharu Fujita (Kyushu Inst. of Tech.) Markov decision process with converging branch system —Multiplicative reward system— . . . . . 10
- 08-01-0003  
13 Hayato Takahashi (Random Data Lab.) Posterior distributions weakly converge to Martin-Löf random parameters . . . . . 15

- [08-01-0012](#)  
14 Hayato Takahashi (Random Data Lab.) Some explicit formulae for the distributions of words ..... 15
- [08-01-0014](#)  
15 Shoko Chisaki (Osaka Inst. of Tech.) Optimality of spanning bipartite block designs II ..... 15  
Shinji Kuriki (Osaka Pref. Univ.\*)  
Ryoh Fuji-Hara (Univ. of Tsukuba\*)  
Nobuko Miyamoto (Tokyo Univ. of Sci.)
- [08-01-0010](#)  
16 Nobuhiro Taneichi An index for selecting the multinomial goodness-of-fit test statistics and its applications ..... 15  
(Hokkaido Univ. of Edu.)  
Yuri Sekiya (Hokkaido Univ. of Edu.)
- [08-01-0015](#)  
17 Eri Kurita (Tokyo Univ. of Sci.) On the null distribution of multivariate normality test statistics using multivariate skewness ..... 15  
Takashi Seo (Tokyo Univ. of Sci.)
- 14:25–15:25 Talk Invited by Statistics and Probability Section**
- [08-02-0003](#)  
Takeru Matsuda Shrinkage estimation: from vector to matrix  
(Univ. of Tokyo/RIKEN)
- 15:40–16:40 Talk Invited by Statistics and Probability Section**
- [08-02-0004](#)  
Yuma Uehara (Kansai Univ.) Information criteria for jump diffusion models

March 18th (Sat)

**10:00–11:10**

- [08-01-0020](#)  
18 Ayaka Yagi (Tokyo Univ. of Sci.) On the test for adequacy in growth curve model with two-step monotone missing data ..... 15  
Toya Ozaki (Tokyo Univ. of Sci.)  
Takashi Seo (Tokyo Univ. of Sci.)
- [08-01-0018](#)  
19 Yuta Koike (Univ. of Tokyo) A high-dimensional central limit theorem for sums of i. i. d log-concave random vectors ..... 15  
Xiao Fang  
(Chinese Univ. of Hong Kong)
- [08-01-0021](#)  
20 Koichi Yamagata Efficiency of estimators for locally asymptotically normal quantum statistical models ..... 15  
(Nat. Inst. of Informatics)  
Akio Fujiwara (Osaka Univ.)
- [08-01-0022](#)  
21 Keita Nakamura (Tokyo Univ. of Sci.) Symmetry in square contingency tables using aitchison geometry ..... 15  
Tomoyuki Nakagawa  
(Tokyo Univ. of Sci.)  
Kouji Tahata (Tokyo Univ. of Sci.)



# Applied Mathematics

March 15th (Wed)

## 9:50–11:50

09-01-0031

- 1 Yuho Tanaka (Waseda Univ.) Jacobi polynomials and design theory ..... 15  
Tsuyoshi Miezaki (Waseda Univ.)  
Manabu Oura (Kanazawa Univ.)  
Himadri Shekhar Chakraborty  
 (Shahjalal Univ. of Sci. Tech.)

09-01-0029

- 2 Sho Suda (Nat. Defense Acad. of Japan) Uniqueness of an association scheme related to the 4-(11, 5, 1)-design ..... 10  
Alexander L. Gavriluk  
 (Shimane Univ.)

09-01-0039

- 3 Norifumi Ojiro (Toyota Tech. Inst.) LCD property and reversibility in quasi-cyclic codes ..... 15  
Hajime Matsui (Toyota Tech. Inst.)

09-01-0041

- 4 Shohei Satake (Meiji Univ.) On high-girth arc-transitive expander graphs ..... 15  
Hyungrok Jo (Yokohama Nat. Univ.)

09-01-0033

- 5 Shinya Fujita (Yokohama City Univ.) Connectivity keeping paths in highly connected graphs ..... 15

09-01-0005

- 6 Sho Fujimura (Fukuoka Univ.) On the generation of all Euler trails for an Eulerian graph with  $2^n$  edges ..... 10  
Shuji SHIRAIISHI (Fukuoka Univ.)

09-01-0011

- 7 Tomoya Machide An application of systems of Boolean polynomial equations to list color problems ..... 15  
 (Nat. Inst. of Informatics)

09-01-0030

- 8 Tadashi Takahashi (Konan Univ.) On the proof of lemma in the learning model using Groebner basis ..... 10  
Tomohiro Washino (Konan Univ.)

## 14:15–15:25

09-01-0008

- 9 Shuhei Tsujie (Hokkaido Univ. of Edu.) Graph embedding and the product of transpositions associated with edges ..... 15  
Ryo Uchiyumi (Hokkaido Univ.)

09-01-0024

- 10 Yumi Yamada (Univ. of Tsukuba) The root distributions of Ehrhart polynomials of free sums of lattice polytopes ..... 15  
Masahiro Hachimori  
 (Univ. of Tsukuba)  
Akihiro Higashitani (Osaka Univ.)

09-01-0014

- 11 Akihiro Higashitani (Osaka Univ.) Classification of skew polynomial algebras by switching of matrices and its associated simplicial complexes ..... 15  
Kenta Ueyama (Hiroshima Univ.)

09-01-0038

- 12 Hirotake Kurihara (Yamaguchi Univ.) Construction of homogeneous Lagrangian subalgebras using rooted trees ..... 15  
Takahiro Hashinaga (Saga Univ.)

## 15:45–16:45 Talk Invited by Applied Mathematics Section

09-02-0003

- Kenta Noguchi (Tokyo Univ. of Sci.) Graphs on closed surfaces, expressly triangulations and quadrangulations

## March 16th (Thu)

**10:00–11:45**

09-01-0002

- 13 Iwao Sato (Oyama Nat. Coll. of Tech.) Metzler/Zeta correspondence ..... 15  
 Yusuke Ide (Nihon Univ.)  
 Takashi Komatsu  
 (Math. Res. Inst. Calc for Industry/Hiroshima Univ.)  
 Norio Konno (Yokohama Nat. Univ.)

09-01-0003

- 14 Iwao Sato (Oyama Nat. Coll. of Tech.) Alternating walk/Zeta correspondence ..... 15  
 Takashi Kmatsu  
 (Math. Res. Inst. Calc for Industry/Hiroshima Univ.)  
 Norio Konno (Yokohama Nat. Univ.)

09-01-0007

- 15 Yoshihiro Anahara Convergence speed for quantum walks on one dimensional lattice with  
 (Yokohama Nat. Univ.) inflows and outflows ..... 15  
 Etsuo Segawa (Yokohama Nat. Univ.)  
 Morioka Hisashi (Ehime Univ.)

09-01-0027

- 16 Akihiro Narimatsu Perfect state transfer, equitable partition and continuous-time quantum  
 (Univ. of Fukuchiyama) walk based search ..... 15  
 Yusuke Ide (Nihon Univ.)

09-01-0020

- 17 Satoshi Yabuoku Enumeration of connected bipartite graphs with given Betti number  
 (Kitakyushu Nat. Coll. of Tech.) ..... 15  
 Taro Hasui (Kyushu Univ.)  
 Tomoyuki Shirai (Kyushu Univ.)

09-01-0012

- 18 Hiroyuki Yamagishi The best constant of the discrete  $\ell^p$  Sobolev inequality on the complete  
 (Tokyo Metro. Coll. of Ind. Tech.) graph ..... 15  
 Kohtaro Watanabe  
 (Nat. Defense Acad. of Japan)

**13:00–14:10**

09-01-0032

- 19 Xiao-Nan Lu (Gifu Univ.) Covering arrays guaranteeing a passing test ..... 15

09-01-0022

- 20 Akira Saito (Nihon Univ.) Two upper bounds on secure domination number ..... 15  
 Shingo Degawa (Nihon Univ.)  
 Aiki Masuda (Nihon Univ.)  
 Hiroki Nishida (Nihon Univ.)

09-01-0037

- 21 Yuichi Yoshida (Kitami Inst. of Tech.) On the three graph invariants related to matching of finite simple graphs  
 Kazunori Matsuda ..... 15  
 (Kitami Inst. of Tech.)

09-01-0009

- 22 Robert E. L. Aldred (Univ. of Otago) Distance restricted matching extension in 5-connected graphs on sur-  
 Jun Fujisawa (Keio Univ.) faces which are not triangulation ..... 15

## March 17th (Fri)

**9:50–11:50**

09-01-0046

- 23 Hironari Miyoshi (Saitama Univ.) Derivation of Brownian motion from the Goldstein–Taylor model ..... 15

09-01-0028

- 24 Itsuki Watanabe (Waseda Univ.) High-density limit of controlled density-dependent Markov processes  
 ..... 15

- 09-01-0021  
25 Antoine Diez (Kyoto Univ.) Scaling limits and emergent phenomena in a system of body-oriented particles ..... 15
- 09-01-0025  
26 Jumpei Nagase (Shibaura Inst. of Tech./ZOZO Research) Permutation invariant deep neural network model for representing hierarchical sets ..... 15  
Yuki Saito (ZOZO Research)  
Tetsuya Ishiwata (Shibaura Inst. of Tech.)
- 09-01-0004  
27 Tsuyoshi Yoneda (Hitotsubashi Univ.) Pointwise convergence theorem of mini-batch gradient descent in terms of deep neural network ..... 15
- 09-01-0034  
28 Makoto Okumura (Hokkaido Univ.) Numerical simulations of a mathematical model of hair follicle formation ..... 15  
Yasuaki Kobayashi (Hokkaido Univ.)  
Masaharu Nagayama (Hokkaido Univ.)  
Hironobu Fujiwara (RIKEN)  
Yasugahira Yusuke (Hitachi, Ltd.)  
Kota Ohno (Chuo Univ.)
- 09-01-0044  
29 Karel Svadlenka (Kyoto Univ.) Variational analysis of finite strain elastoplasticity for structured materials ..... 15

#### 14:15–14:40 Presentation Ceremony for the 2022 Applied Mathematics Prize

#### 14:45–16:30

- 09-01-0016  
30 Takuya Tsuchiya (Hachinohe Inst. of Tech.) Numerical accuracy and stability of semilinear Klein–Gordon equation in de Sitter spacetime ..... 15  
Makoto Nakamura (Osaka Univ.)
- 09-01-0017  
31 Takuya Tsuchiya (Hachinohe Inst. of Tech.) On behaviors of solutions of semilinear Klein–Gordon equation in contracting de Sitter spacetime ..... 15  
Makoto Nakamura (Osaka Univ.)
- 09-01-0015  
32 Kota Takeda (Kyoto Univ.) Computing an invariant measure of the  $N$ -vortex problem on the sphere by Hamiltonian Monte Carlo ..... 15  
Takashi Sakajo (Kyoto Univ.)
- 09-01-0006  
33 Hiroshi Fujiwara (Kyoto Univ.) On a Cauchy-type singular integral equation for x-ray computerized tomography with partial measurement ..... 15  
Kamran Sadiq (Johann Radon Inst. for Comput. Appl. Math.)  
Alexandru Tamasan (Univ. Central Florida)
- 09-01-0023  
34 Toshimasa Ishige (Chiba Univ.) Rigorous numerics for finding the monodromy of Picard–Fuchs differential equations for a family of K3 toric hypersurfaces ..... 15  
Akitoshi Takayasu (Univ. of Tsukuba)
- 09-01-0013  
35 Takehiko Kinoshita (Saga Univ.) Convergence order estimations of approximate inverse operator norm for second-order elliptic linear operators ..... 15  
Yoshitaka Watanabe (Kyushu Univ.)  
Mitsuhiro T. Nakao (Waseda Univ.)

#### 16:45–17:45 Talk Invited by Applied Mathematics Section

- 09-02-0002  
Koya Sakakibara (Okayama Univ. of Sci./RIKEN) Structure-preserving numerical analysis of interfacial phenomena

March 18th (Sat)

**9:50–11:50**

09-01-0010

36 Toshikazu Kuniya (Kobe Univ.) Hopf bifurcation in a delayed epidemic model with quarantine . . . . . 15

09-01-0040

37 Yoshiki Takeguchi (Kyoto Univ.)  
Kazuyuki Yagasaki (Kyoto Univ.) Optimal control of the SEIR epidemic model using a dynamical systems approach . . . . . 15

09-01-0045

38 Sohei Tasaki (Hokkaido Univ.)  
Hiroki Nagai Mathematical analysis of dedifferentiation in the intestinal epithelial cell community . . . . . 15

(Univ. of Tokyo/Tohoku Univ.)

Luis Augusto Eijy Nagai  
(Univ. of Tokyo)Ryuichiro Nakato (Univ. of Tokyo)Masayuki Miura (Univ. of Tokyo)Yu-ichiro Nakajima

(Univ. of Tokyo/Tohoku Univ.)

09-01-0043

39 Kaname Matsue Correspondence between asymptotic expansions of blow-up solutions for ODEs and dynamics at infinity . . . . . 15

(Kyushu Univ./Kyushu Univ.)

Hiroyuki Ochiai (Kyushu Univ.)Hisatoshi Kodani (Kyushu Univ.)Akitoshi Takayasu (Univ. of Tsukuba)

09-01-0035

40 Yikan Liu (Hokkaido Univ.) Initial-boundary value problems for coupled systems of time-fractional diffusion equations . . . . . 15

09-01-0018

41 Tomoyuki Miyaji (Kyoto Univ.) A conjecture on the asymptotic reflection rule of a self-propelled particle . . . . . 15Robert Sinclair

09-01-0019

42 Hiroshi Ishii (Kyoto Univ.) Pattern dynamics depending on integral kernel shape in reaction-diffusion equations with sufficiently weak nonlocal effect . . . . . 15**14:15–15:05**

09-01-0026

43 Kota Ohno (Chuo Univ.) Stability of traveling wave in nonlocally coupled oscillator system . . . . . 15Toshiyuki Ogawa (Meiji Univ.)

09-01-0036

44 Ayuki Sekisaka (Meiji Univ.) Stability problem of segmented pattern for oscillatory reaction-diffusion systems . . . . . 15Toshiyuki Ogawa (Meiji Univ.)

09-01-0042

45 Toshiyuki Ogawa (Meiji Univ.) Turing instability on compact metric graph . . . . . 15Shunsuke Kobayashi

(Univ. of Miyazaki)

**15:20–16:20 Talk Invited by Applied Mathematics Section**

09-02-0001

Kei Nishi (Kyoto Sangyo Univ.) Pulse dynamics in a three-component reaction-diffusion system

# Topology

March 15th (Wed)

## 9:30–12:00

10-01-0001

- 1 Shintaro Kuroki (Okayama Univ. of Sci.) Orlik–Raymond type classification of simply connected 6-dimensional torus manifolds with vanishing odd degree cohomology ..... 15

10-01-0016

- 2 Masakazu Nasu The limits of resolving directions of automorphisms of sofic systems ..... 15

10-01-0020

- 3 Takeo Shirane (Tokushima Univ.)  
Meirav Amram (Shamoon Coll. of Eng.)  
Shinzo Bannai (Okayama Univ. of Sci.)  
Uriel Sinichkin (Tel Aviv Univ.)  
Hiro-o Tokunaga (Tokyo Metro. Univ.) Splitting invariants and a  $\pi_1$ -equivalent Zariski pair of conic-line arrangements ..... 15

10-01-0024

- 4 Kaori Yamazaki (Takasaki City Univ. of Econ.) Extensions of continuous increasing functions ..... 10

10-01-0026

- 5 Naoki Fukasawa (Tokyo Metro. Univ.) Persistent cohomology and computation of cup length function ..... 15

10-01-0027

- 6 Yu Tajima (Hokkaido Univ.)  
Masahiko Yoshinaga (Osaka Univ.) Magnitude homotopy type of graphs and Mayer–Vietoris type theorem ..... 15

10-01-0028

- 7 Shuichi Harako (Univ. of Tokyo) The modular class of an orientable  $\rho$ -Q-manifold ..... 15

10-01-0022

- 8 Shun Wakatsuki (Nagoya Univ.)  
Takahiro Matsushita (Univ. of Ryukyus) Independence complexes of grid graphs ..... 10

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

10-02-0002

- Noboru Ogawa (Tokai Univ.) Liouville and Weinstein structures on convex symplectic manifolds

## 15:40–17:30

10-01-0029

- 9 Naotsugu Chinen (Nat. Defense Acad. of Japan) Isometry groups of symmetric products of  $(\mathbb{R}^k)_p^q$  ..... 15

10-01-0031

- 10 Atsuhide Mori (Osaka Dent. Univ.) Mutual Bayesian learning for manifolds ..... 15

10-01-0032

- 11 Shunsuke Kano (Tohoku Univ.)  
Tsukasa Ishibashi (Tohoku Univ.) Unbounded  $\mathfrak{sl}_3$ -laminations and their shear coordinates ..... 15

10-01-0036

- 12 Katsuhisa Koshino (Kanagawa Univ.) A characterization of compact sets in  $L^p$ -spaces and its application ..... 15

10-01-0037

- 13 Masanori Adachi (Shizuoka Univ.)  
Yoshifumi Matsuda (Aoyama Gakuin Univ.)  
Hiraku Nozawa (Ritsumeikan Univ.) Harmonic measures and rigidity for surface group actions on the circle ..... 15

## March 16th (Thu)

**9:30–12:00**

10-01-0038

14 Takahiro Yamamoto (Tokyo Gakugei Univ.) Fiber singularities of continuous maps ..... 15

10-01-0012

15 Naoki Hamada (KLab Inc.) Kenta Hayano (Keio Univ.) Hiroshi Teramoto (Kansai Univ.) Classification and recognition of constraint function-germs and feasible set-germs in multiobjective optimization ..... 15

10-01-0003

16 Erika Kuno (Osaka Univ.) Uniform hyperbolicity of nonseparating curve graphs of nonorientable surface ..... 10

10-01-0004

17 Erika Kuno (Osaka Univ.) Mitsuaki Kimura (Kyoto Univ.) Uniform hyperbolicity of fine curve graphs of nonorientable surfaces ..... 10

10-01-0006

18 Ryoma Kobayashi (Ishikawa Nat. Coll. of Tech.) Nao Imoto Action on non-separating simple closed curves by the level 2 mapping class group of a non-orientable closed surface ..... 10

10-01-0008

19 Ryoma Kobayashi (Ishikawa Nat. Coll. of Tech.) Nao Imoto The group generated by squares of Dehn twists about non-separating simple closed curves of a non-orientable closed surface ..... 15

10-01-0009

20 Genki Omori (Tokyo Univ. of Sci.) A finite presentation for the balanced superelliptic handlebody group ..... 15

10-01-0010

21 Genki Omori (Tokyo Univ. of Sci.) A small generating set for the balanced superelliptic handlebody group ..... 10

**13:00–14:00**

10-01-0015

22 Teruaki Kitano (Soka Univ.) Tatsuro Shimizu (Tokyo Denki Univ.) On the torus sum formula of Reidemeister torsion defined by Morse–Smale flows ..... 10

10-01-0002

23 Masakazu Teragaito (Hiroshima Univ.) Hyperbolic L-space knots and their Upsilon invariants ..... 10

10-01-0025

24 Teruhisa Kadokami (Kanazawa Univ.) The Ma–Qiu index and the Nakanishi index for a fibered knot are equal, and  $\omega$ -solvability ..... 15

## March 17th (Fri)

**9:30–12:00**

10-01-0021

25 Eri Matsudo (Nihon Univ.) Kanako Oshiro (Sophia Univ.) Gaishi Yamagishi (Sophia Univ.) Minimum numbers of Dehn colors and  $\mathcal{R}$ -palette graphs ..... 10

10-01-0023

26 Kazuhiro Ichihara (Nihon Univ.) Katsumi Ishikawa (Kyoto Univ.) Masaaki Suzuki (Meiji Univ.) Eri Matsudo (Nihon Univ.) Two-tone colorings and surjective dihedral representations for links ... 10

10-01-0005

27 Takefumi Nosaka (Tokyo Tech) Symmetric rack cocycle invariants of closed 3-manifolds ..... 10

10-01-0007

28 Shosaku Matsuzaki (Int. Affairs Ashikaga Univ.) Tomo Murao (Waseda Univ.) Spatial surfaces and multiple group rack cocycle invariants ..... 10

<a href="#">10-01-0033</a>			
29	<a href="#">Yuta Taniguchi</a> (Osaka Univ.) Kokoro Tanaka (Tokyo Gakugei Univ.)	A central extension of the $n$ -quandle of a knot .....	15
<a href="#">10-01-0034</a>			
30	<a href="#">Kokoro Tanaka</a> (Tokyo Gakugei Univ.) <a href="#">Yuta Taniguchi</a> (Osaka Univ.)	Knot quandles and knot groups for 2-knots .....	10
<a href="#">10-01-0030</a>			
31	<a href="#">Kodai Wada</a> (Kobe Univ.)	Finite type invariants of ribbon 2-dimensional string links with generalized Brunnian properties .....	10
<b>14:20–15:20 Talk Invited by Topology Section</b>			
<a href="#">10-02-0001</a>			
	<a href="#">Atsushi Ishii</a> (Univ. of Tsukuba)	Alexander type invariants of groups, quandles and MCQs	
<b>15:40–17:00</b>			
<a href="#">10-01-0041</a>			
32	<a href="#">Yohei Wakamaki</a> (Osaka Univ.)	Corks of some rational surfaces .....	15
<a href="#">10-01-0013</a>			
33	<a href="#">Nobutaka Asano</a> (Tsuyama Nat. Coll. of Tech.) <a href="#">Hironobu Naoe</a> (Chuo Univ.) <a href="#">Masaki Ogawa</a> (Saitama Univ.)	Some lower bounds for the Kirby–Thompson invariant of 4-manifolds .....	15
<a href="#">10-01-0018</a>			
34	<a href="#">Tsukasa Isoshima</a> (Tokyo Tech) <a href="#">Masaki Ogawa</a> (Saitama Univ.)	Trisections of the 4-sphere obtained by Gluck twisting .....	15
<a href="#">10-01-0035</a>			
35	<a href="#">Takahiro Oba</a> (Osaka Univ.)	Symplectic submanifolds in dimension 6 from Lefschetz fibrations .....	15

## Infinite Analysis

March 17th (Fri)

**9:45–10:45**

11-01-0006

- 1 Yuichi Ueno (Kogakkan Univ./Kobe Univ.) Polynomial Hamiltonians for quantum Garnier system in two variables ..... 10

11-01-0002

- 2 Nobutaka Nakazono (Tokyo Univ. of Agri. and Tech.) Consistency around a cube property of Hirota's discrete KdV equation ..... 15

11-01-0001

- 3 Takao Suzuki (Kindai Univ.) An affine Weyl group action on the basic hypergeometric series arising from the  $q$ -Garnier system ..... 15

11-01-0008

- 4 Yousuke Ohyama (Tokushima Univ.) Boundary behavior of  $q$ -Painlevé equation of type  $A_4^{(1)}$  ..... 15

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

11-02-0001

- Rei Inoue (Chiba Univ.) Cluster realization of Weyl groups and its applications to representation theory

March 18th (Sat)

**10:00–10:45**

11-01-0009

- 5 Nao Komiyama (Nagoya Univ.) Associators and the Grothendieck–Teichmüller group in mould theory ..... 10

11-01-0005

- 6 Atsuo Kuniba (Univ. of Tokyo) Shuichiro Matsuike (Univ. of Tokyo) Akihito Yoneyama (Univ. of Tokyo) New solutions to the tetrahedron equation associated with quantized six-vertex models ..... 15

11-01-0007

- 7 Toshiki Nakashima (Sophia Univ.) Geometric crystal on unipotent variety and crystal of modified quantum algebra ..... 15

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

11-02-0002

- Travis Scrimshaw (Hokkaido Univ.) Krystal theory