

## 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  $\mathfrak{b}$  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

September 15th (Thu)

## 10:35–12:00

01-01-0018

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

01-01-0017

- 2 Kenshi Miyabe (Meiji Univ.) Subclasses of weakly computable reals that form real closed fields .... 15

01-01-0005

- 3 Koichiro Ikeda (Hosei Univ.) On regular generic structures ..... 15

01-01-0011

- 4 Hiroataka Kikyo (Kobe Univ.) On generic structures defined by log-like functions ..... 15

01-01-0019

- 5 Akito Tsuboi (Univ. of Tsukuba\*) Some comments on the difference between forking and dividing ..... 10

## 14:15–14:30 Research Section Assembly

## 14:45–16:15

01-01-0001

- 6 Kenta Tsukaura (Univ. of Tsukuba) Huge cardinal and Prikry forcing ..... 15

01-01-0008

- 7 Tatsuya Goto (Kobe Univ.) Goldstern's principle about unions of measure 0 sets ..... 15

01-01-0007

- 8 Diego A. Mejía (Shizuoka Univ.) Cardinal characteristics associated with the ideal of strong measure zero sets ..... 15

01-01-0002

- 9 Rin Miyauchi (Waseda Univ.) The continuum function on the countable unions of countable sets ... 15  
Toshimichi Usuba (Waseda Univ.)

01-01-0013

- 10 Daisuke Ikegami (Shibaura Inst. of Tech.) Preservation of AD via forcings ..... 15

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

01-02-0001

- Tatsuji Kawai (JAIST) Real numbers from a point-free perspective

September 16th (Fri)

## 10:30–12:00

01-01-0003

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

01-01-0016

- 12 Yutaka Katō (Tokyo Tech) Semantics and cut-elimination for the provability modal logic GLS ... 15  
Ryo Kashima (Tokyo Tech)

01-01-0004

- 13 Yuya Okawa (Chiba Univ.) Simplified Veltman frames for sublogics of the interpretability logic **IL** ..... 15

01-01-0006

- 14 Nobu-Yuki Suzuki (Shizuoka Univ.) Remarks on intermediate predicate logics enjoying prenex normal form theorem ..... 15

01-01-0009

- 15 Hiromasa Hori (Nagoya Univ.) Equivalence of infinite and cyclic proof systems for propositional logics ..... 15  
Koji Nakazawa (Nagoya Univ.)  
Makoto Tatsuta (Nat. Inst. of Informatics)

**14:15–15:55**

01-01-0010

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

01-01-0012

- 17 Katsushi Waki (Yamagata Univ.) Extraction of graphic regions within WASAN books ..... 10

01-01-0014

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

01-01-0020

- 19 Mitsuo Morimoto (Yokkaichi Univ./Sophia Univ.\*) On the *Sekisan Shidensho* (2) ..... 15

01-01-0021

- 20 Tsukane Ogawa (Yokkaichi Univ.) Inductive methodology in the ‘Myouku Shu’ written by Oka Yukitada ..... 15

01-01-0015

- 21 Makoto Tamura (Osaka Sangyo Univ.) On the solution of cubic equations in China ..... 15

**16:00–16:15 Mathematics History Team Meeting****16:25–17:25 Talk Invited by Section on Foundation and History of Mathematics**

01-02-0002

- Harald Kuemmerle (German Inst. for Japanese Stud.) A re-evaluation of “civil mathematicians” in Ogura Kinnosuke’s historiography

# Algebra

September 13th (Tue)

## 9:30–12:00

02-01-0032

- 1 Shinichi Tajima (Niigata Univ.\*) Efficient symbolic computation of Jordan chains and generalized eigenspaces  
Katsuyoshi Ohara (Kanazawa Univ.) (1) ..... 10  
Akira Terui (Univ. of Tsukuba)

02-01-0033

- 2 Shinichi Tajima (Niigata Univ.\*) Efficient symbolic computation of Jordan chains and generalized eigenspaces  
Katsuyoshi Ohara (Kanazawa Univ.) (2) ..... 10  
Akira Terui (Univ. of Tsukuba)

02-01-0006

- 3 Koji Matsushita (Osaka Univ.) Torsionfreeness for divisor class groups of toric rings of integral polytopes ..... 13

02-01-0007

- 4 Sora Miyashita (Osaka Univ.)<sup>b</sup> Levelness versus nearly Gorensteinness of homogeneous domains ..... 13

02-01-0045

- 5 Mitsuhiro Miyazaki Almost Gorenstein property of the Ehrhart ring of the stable set polytope of a cycle graph and Hibi–Tsuchiya’s conjecture ..... 13  
(Kyoto Univ. of Edu.)

02-01-0066

- 6 Kohsuke Shibata Minimal free resolutions of Specht ideals for  $(n - d, d)$  ..... 13  
(Yonago Nat. Coll. of Tech.)  
Kohji Yanagawa (Kansai Univ.)

02-01-0036

- 7 Ken-ichi Yoshida (Nihon Univ.) Gorensteinness for normal tangent cones of elliptic ideals ..... 13  
Tomohiro Okuma (Yamagata Univ.)  
Kei-ichi Watanabe (Nihon Univ.)

02-01-0070

- 8 Naoki Endo (Meiji Univ.) Reflexive modules over the endomorphism algebras of reflexive trace  
Shiro Goto (Meiji Univ.) ideals ..... 13

02-01-0008

- 9 Shinya Kumashiro Upper bound on the colength of the trace of the canonical module  
(Oyama Nat. Coll. of Tech.) ..... 13

## 14:15–16:45

02-01-0034

- 10 Toshiya Yurikusa (Tohoku Univ.) Acyclic cluster algebras with dense  $g$ -vector fans ..... 10

02-01-0023

- 11 Yuichiro Goto (Osaka Univ.) Connectedness of quasi-hereditary structures ..... 13

02-01-0010

- 12 Satoshi Usui (Tokyo Univ. of Sci.) Characterization of eventually periodic modules in the singularity categories, and its application ..... 13

02-01-0057

- 13 Hideto Asashiba Approximation by interval-decomposables and interval resolutions of  
(Shizuoka Univ./Kyoto Univ./Osaka Metro. Univ.) 2D persistence modules ..... 13  
Emerson Gaw Escobar (Kobe Univ.)  
Ken Nakashima (Okayama Univ.)  
Michio Yoshiwaki (Osaka Metro. Univ.)

02-01-0025

- 14 Kazuo Ozeki (Yamaguchi Univ.) The first Hilbert coefficient of stretched ideals ..... 13

02-01-0055

- 15 Takahide Adachi (Yamaguchi Univ.) Generalization of HRS-tilt ..... 13  
Haruhisa Enomoto  
(Osaka Metro. Univ.)  
Mayu Tsukamoto (Yamaguchi Univ.)

|                            |                                                                          |                                                                           |    |
|----------------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------|----|
| <a href="#">02-01-0021</a> | 16 Masaki Matsuno (Shizuoka Univ.)                                       | The classification of twisted algebras of 3-dimensional Sklyanin algebras | 13 |
| <a href="#">02-01-0024</a> | 17 Haigang Hu (Shizuoka Univ.)<br>Izuru Mori (Shizuoka Univ.)            | Quantum quadratic complete intersections                                  | 13 |
| <a href="#">02-01-0049</a> | 18 Mayu Tsukamoto (Yamaguchi Univ.)<br>Takahide Adachi (Yamaguchi Univ.) | Cotorsion pairs and silting subcategories in extriangulated categories    | 13 |

**17:00–18:00 Talk Invited by Algebra Section**

|                            |                           |                                                                     |  |
|----------------------------|---------------------------|---------------------------------------------------------------------|--|
| <a href="#">02-02-0002</a> | Aaron Chan (Nagoya Univ.) | Algebras associated to surface dissections and their tilting theory |  |
|----------------------------|---------------------------|---------------------------------------------------------------------|--|

## September 14th (Wed)

**9:30–12:00**

|                            |                                                                                     |                                                                                |    |
|----------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|----|
| <a href="#">02-01-0062</a> | 19 Cid Reyes-Bustos<br>(NTT Inst. for Funda. Math.)                                 | Spectra and Ihara zeta function of group-subgroup pair graphs                  | 10 |
| <a href="#">02-01-0068</a> | 20 Kiyoto Yoshino (Tohoku Univ.)                                                    | Equiangular lines with common angle $\arccos(1/3)$                             | 13 |
| <a href="#">02-01-0028</a> | 21 Liron Speyer<br>(Okinawa Inst. of Sci. and Tech. Grad. Univ.)                    | Schurian-infinite blocks of type $A$ Hecke algebras                            | 13 |
| <a href="#">02-01-0029</a> | 22 Yuta Kozakai (Tokyo Univ. of Sci.)                                               | On tilting complexes over blocks covering cyclic blocks                        | 10 |
| <a href="#">02-01-0040</a> | 23 Naoki Fujita (Kumamoto Univ.)                                                    | Essential bases of irreducible representations and Newton–Okounkov bodies      | 13 |
| <a href="#">02-01-0037</a> | 24 Taiki Shibata (Okayama Univ. of Sci.)<br>Ryota Wakao (Okayama Univ. of Sci.)     | On classification of pointed Hopf superalgebras of low dimension               | 10 |
| <a href="#">02-01-0038</a> | 25 Hirotake Kurihara (Yamaguchi Univ.)<br>Akihiro Higashitani (Osaka Univ.)         | New invariants for finite generalized Alexander quandles and their application | 13 |
| <a href="#">02-01-0053</a> | 26 Kenichi Shimizu<br>(Shibaura Inst. of Tech.)                                     | A formula of the Nakayama functor of the dual tensor category                  | 13 |
| <a href="#">02-01-0013</a> | 27 Katsusuke Nabeshima<br>(Tokyo Univ. of Sci.)<br>Shinichi Tajima (Niigata Univ.*) | On Noetherian operators of zero-dimensional ideals                             | 13 |

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

|                            |                              |                           |  |
|----------------------------|------------------------------|---------------------------|--|
| <a href="#">02-02-0001</a> | Naoki Genra (Univ. of Tokyo) | Feigin–Semikhatov duality |  |
|----------------------------|------------------------------|---------------------------|--|

## September 15th (Thu)

**9:30–11:30**

|                            |                                                        |                                                                                                                                |    |
|----------------------------|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|----|
| <a href="#">02-01-0003</a> | 28 Tomohiro Iwami (Kyushu Inst. of Tech.) <sup>b</sup> | Strong approximation property related to three-dimensional Miyaoka–Yau type inequality with the associated third Chern classes | 13 |
| <a href="#">02-01-0004</a> | 29 Ryo Ohashi (Yokohama Nat. Univ.)                    | Fast enumeration of superspecial hyperelliptic curves of genus 4 with automorphism group $V_4$                                 | 13 |
| <a href="#">02-01-0051</a> | 30 Hirokazu Nasu (Tokai Univ.)                         | On the primary obstructions to deforming curves on a threefold                                                                 | 13 |

|                            |                                       |                                                                                                             |    |
|----------------------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------|----|
| <a href="#">02-01-0052</a> | 31 Hirokazu Nasu (Tokai Univ.)        | Obstructions to deforming space curves lying on a smooth cubic surface                                      | 13 |
| <a href="#">02-01-0017</a> | 32 Akihiro Higashitani (Osaka Univ.)  | Combinatorial mutation equivalence of two toric degenerations of Grassmannians arising from matching fields | 13 |
| <a href="#">02-01-0056</a> | 33 Ryo Kawaguchi (Nara Medical Univ.) | A lower bound for the $i$ th sectional geometric genus of polarized toric varieties                         | 13 |
| <a href="#">02-01-0026</a> | 34 Shou Yoshikawa (RIKEN)             | Quasi- $F$ -splitting                                                                                       | 13 |

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

#### 14:15–17:15

|                            |                                                                                                |                                                                                                            |    |
|----------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|----|
| <a href="#">02-01-0002</a> | 35 Atsuhira Nagano (Kanazawa Univ.)                                                            | A family of lattice polarized K3 surfaces which contains the family of Kummer surfaces                     | 13 |
| <a href="#">02-01-0022</a> | 36 Naoki Mikoshiba (Tokyo Denki Univ.)                                                         | Hodge cycles on abelian varieties of $D_n$ -type                                                           | 13 |
| <a href="#">02-01-0064</a> | 37 Makoto Miura (Kyoto Univ.)                                                                  | Geometric transitions for Calabi–Yau hypersurfaces                                                         | 13 |
| <a href="#">02-01-0009</a> | 38 Kotaro Kawatani (Osaka Metro. Univ./Yamato Univ.)                                           | Non-existence of stability conditions on linear triangulated categories                                    | 13 |
| <a href="#">02-01-0044</a> | 39 Hiroki Matsui (Tokushima Univ.)                                                             | Spectra of derived categories and reconstruction of algebraic varieties                                    | 13 |
| <a href="#">02-01-0005</a> | 40 Shingo Okuyama (Kagawa Nat. Coll. of Tech.)                                                 | Partially additive rings and partial group schemes over $\mathbb{F}_1$                                     | 13 |
| <a href="#">02-01-0012</a> | 41 <u>Norihiro Nakashima</u> (Nagoya Inst. of Tech.)<br>Shuhei Tsujie (Hokkaido Univ. of Edu.) | Conditions for the extended Shi arrangements and the extended Catalan arrangements to be hereditarily free | 13 |
| <a href="#">02-01-0065</a> | 42 Norihiko Minami (Nagoya Inst. of Tech.)                                                     | A type 1 local uniformization theorem for arbitrary geometric valuations                                   | 13 |
| <a href="#">02-01-0063</a> | 43 Norihiko Minami (Nagoya Inst. of Tech.)                                                     | Two applications of the birational motive to the retract $(-i)$ -rationality                               | 13 |
| <a href="#">02-01-0031</a> | 44 Ryosuke Shimada (Univ. of Tokyo)                                                            | On some simple geometric structure of affine Deligne–Lusztig varieties for $\mathrm{GL}_n$                 | 13 |

### 17:30–18:30 Talk Invited by Algebra Section

|                            |                                                |                                                              |
|----------------------------|------------------------------------------------|--------------------------------------------------------------|
| <a href="#">02-02-0003</a> | Takashi Kishimoto (Saitama Univ.) <sup>b</sup> | Equivariant completions of vector groups into Fano varieties |
|----------------------------|------------------------------------------------|--------------------------------------------------------------|

## September 16th (Fri)

#### 9:30–12:00

|                            |                                                                                                            |                                                                                                             |    |
|----------------------------|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|----|
| <a href="#">02-01-0046</a> | 45 <u>Shin Nakano</u> (Gakushuin Univ.)<br>Kotaro Kato                                                     | On ideal class groups of quintic cyclic fields                                                              | 10 |
| <a href="#">02-01-0060</a> | 46 Aiki Kimura (Tohoku Univ.)                                                                              | The duality relations derived from the derivation relations for multiple zeta values                        | 13 |
| <a href="#">02-01-0020</a> | 47 <u>Wataru Takeda</u> (Tokyo Univ. of Sci.)<br>Yasuo Ohno (Tohoku Univ.)<br>Maki Nakasuji (Sophia Univ.) | An interpolation of the generalized duality formula for the Schur multiple zeta values to complex functions | 13 |

|                    |                                                                                                                                                |                                                                                                                        |    |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|----|
| 02-01-0069         | 48 Naho Kawasaki (Tohoku Univ.)                                                                                                                | An explicit formula of the relation between multiple zeta functions of Arakawa–Kaneko and Euler–Zagier types . . . . . | 10 |
| 02-01-0035         | 49 Masataka Ono (Waseda Univ.)<br>Shuji Yamamoto (Univ. of Tokyo)                                                                              | Kaneko–Zagier conjecture for general integer indices . . . . .                                                         | 13 |
| 02-01-0027         | 50 Hirotaka Kobayashi (Nagoya Univ.)                                                                                                           | On an entire function derived from higher derivatives of Hardy’s $Z$ -function . . . . .                               | 13 |
| 02-01-0030         | 51 Shota Inoue (Tokyo Tech)<br>Junxian Li (Univ. Bonn)                                                                                         | Joint value distribution of $L$ -functions on the critical line . . . . .                                              | 13 |
| 02-01-0039         | 52 Masahiro Mine (Sophia Univ.)                                                                                                                | Discrepancy estimates for the Hurwitz zeta-functions and Mahler’s classification . . . . .                             | 13 |
| 02-01-0050         | 53 Kenta Endo (Nagoya Univ.)                                                                                                                   | Universality theorem for the iterated integrals of the logarithm of the Riemann zeta-function . . . . .                | 13 |
| <b>14:15–17:00</b> |                                                                                                                                                |                                                                                                                        |    |
| 02-01-0001         | 54 Yasuaki Gyoda (Univ. of Tokyo)                                                                                                              | Positive integer solutions to $(x+y)^2 + (y+z)^2 + (z+x)^2 = 12xyz$ and generalized markov cluster algebra . . . . .   | 13 |
| 02-01-0015         | 55 Shigeru Iitaka (Gakushuin Univ.*)<br>Yukimasa Saito<br>(Azabu Junior High School)                                                           | Generalization of perfect numbers . . . . .                                                                            | 13 |
| 02-01-0041         | 56 Tadaaki Igawa<br>Debika Banerjee<br>(Indraprastha Inst. of Information Tech. Delhi)<br>Makoto Minamide (Yamaguchi Univ.)<br>Yoshio Tanigawa | On averages of indexes of congruence subgroups in the modular group . . . . .                                          | 10 |
| 02-01-0042         | 57 Ryota Tajima (Kyushu Univ.)                                                                                                                 | A $p$ -adic property of mock modular forms whose shadows have complex multiplication . . . . .                         | 10 |
| 02-01-0054         | 58 Yuichi Sakai (Kurume Inst. of Tech.)<br>Kiyokazu Nagatomo<br>Don Zagier (Max Plank Inst. for Math.)                                         | Modular linear differential equations and generalized Rankin–Cohen brackets . . . . .                                  | 13 |
| 02-01-0014         | 59 Daniel Duverney (Baggio Eng. School)<br>Takeshi Kurosawa (Tokyo Univ. of Sci.)<br>Iekata Shiokawa (Keio Univ.*)                             | Irrationality exponents of certain series generated by continued fraction with folding lemma . . . . .                 | 13 |
| 02-01-0059         | 60 Shintaro Murakami (Hiroshima Univ.)<br>Yohei Tachiya (Hiroshima Univ.)                                                                      | Linear independence of certain gap series with monomial exponents . . . . .                                            | 10 |
| 02-01-0011         | 61 Kota Saito (Univ. of Tsukuba)<br>Wataru Takeda (Tokyo Univ. of Sci.)                                                                        | Topological properties and algebraic independence of sets of prime-representing constants . . . . .                    | 12 |
| 02-01-0047         | 62 Haruki Ide (Keio Univ.)<br>Taka-aki Tanaka (Keio Univ.)                                                                                     | Algebraic independence properties of certain entire functions with many variables . . . . .                            | 10 |
| 02-01-0048         | 63 Haruki Ide (Keio Univ.)                                                                                                                     | Algebraic independence results for certain families of analytic functions generated by linear recurrences . . . . .    | 10 |
| 02-01-0043         | 64 Satoshi Kumabe (Kyushu Univ.)                                                                                                               | Supercongruences for fourth Appell function . . . . .                                                                  | 10 |

**17:15–18:15 Talk Invited by Algebra Section**

|            |                                |                                                       |
|------------|--------------------------------|-------------------------------------------------------|
| 02-02-0004 | Makoto Kawashima (Nihon Univ.) | On arithmetic properties of the Siegel $G$ -functions |
|------------|--------------------------------|-------------------------------------------------------|

# Geometry

September 13th (Tue)

## 9:30–11:45

03-01-0019

- 1 Yu Ohno (Hokkaido Univ.)<sup>b</sup> A characterization of the alpha-connections on the statistical manifold of multivariate normal distributions ..... 15  
Shimpei Kobayashi (Hokkaido Univ.)

03-01-0032

- 2 Shinobu Fujii Subspace arrangements associated with symmetric Clifford systems ... 15  
(Chitose Inst. of Sci. and Tech.)

03-01-0008

- 3 Masahiro Morimoto Geometry of orbits of path group actions induced by Hermann actions ..... 15  
(Osaka Metro. Univ.)

03-01-0036

- 4 Kurando Baba (Tokyo Univ. of Sci.) Double Satake diagrams and canonical forms in compact symmetric triads with applications to Hermann actions ..... 15  
Osamu Ikawa (Kyoto Inst. Tech.)

03-01-0044

- 5 Kyoji Sugimoto (Tokyo Univ. of Sci.) Para-real forms of para-Hermitian symmetric spaces and real forms of pseudo-Hermitian symmetric spaces ..... 15

03-01-0007

- 6 Soma Ohno (Waseda Univ.) Infinitesimal deformations of Killing spinors on nearly parallel  $G_2$  manifolds ..... 15

03-01-0033

- 7 Yusuke Sakane (Osaka Univ.\*) On non-naturally reductive Einstein metrics on  $SU(N)$  ..... 15

## 14:15–16:15

03-01-0018

- 8 Yoshiki Jikumaru (Kyushu Univ.) Geometry of hanging membranes in architectural surface design ..... 15

03-01-0010

- 9 Shin Kaneda (Hiroshima Univ.) Nonorientable maximal surfaces and their singular points ..... 15

03-01-0012

- 10 Rika Akiyama (Tokyo Metro. Univ.) Chern–Federer submanifolds in Riemannian space forms ..... 15  
Takashi Sakai (Tokyo Metro. Univ.)  
Yuichiro Sato  
(Kogakuin Univ./Tokyo Metro. Univ.)

03-01-0024

- 11 Hiroataka Kiyohara (Hokkaido Univ.) Characterization of minimality of timelike minimal surfaces in the three-dimensional Heisenberg group ..... 15  
Shimpei Kobayashi (Hokkaido Univ.)

03-01-0002

- 12 Shintaro Akamine (Nihon Univ.) Extension of Krust theorem and deformations of minimal surfaces .... 15  
Hiroki Fujino (Nagoya Univ.)

03-01-0031

- 13 Pham Hoang Ha On the total weight of a number of totally ramified values of the Gauss map of a complete minimal surface with finite total curvature ..... 15  
(Hanoi National Univ.)  
Yu Kawakami (Kanazawa Univ.)  
Mototsugu Watanabe  
(Takaoka special support school)

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

03-02-0001

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

September 14th (Wed)

## 10:10–10:25 Presentation Ceremony for the 2022 MSJ Geometry Prize

## 10:30–11:30 Award Lecture for the 2022 MSJ Geometry Prize

03-02-0002

- Hiroshi Iriyeh (Ibaraki Univ.) A solution of Mahler’s conjecture of three dimensional symmetric convex bodies  
Masataka Shibata (Meijo Univ.)

**13:15–14:15 Award Lecture for the 2022 MSJ Geometry Prize**

03-02-0003

Tatsuki Kuwagaki (Kyoto Univ.)<sup>b</sup> Geometry and algebraic analysis of sheaf quantization

September 15th (Thu)

**9:30–11:45**

03-01-0042

- 14 Takumi Gomyou (Nagoya Univ.) Maximization of the first eigenvalue of a finite graph and Nadirashvili-type theorem ..... 15  
 Shin Nayatani (Nagoya Univ.)

03-01-0013

- 15 Tetsuya Nagano (Univ. of Nagasaki) The study to quantify of the estrangement for non-reversible geodesics in Finsler space ..... 15

03-01-0023

- 16 Hiroshi Tsuji (Osaka Univ.) Blaschke–Santaló inequality and inverse Santaló inequality via heat semigroup ..... 15

03-01-0011

- 17 Takeru Asaka (Univ. of Tokyo) Earthquake theorem for cluster algebras of finite type ..... 15  
 Shunsuke Kano (Tohoku Univ.)  
 Tsukasa Ishibashi (Tohoku Univ.)

03-01-0041

- 18 Shunsuke Kano (Tohoku Univ.) Asymptotic behavior of earthquake maps for cluster algebras of finite type ..... 15  
 Takeru Asaka (Univ. of Tokyo)  
 Tsukasa Ishibashi (Tohoku Univ.)

03-01-0043

- 19 Ramón Barral Lijó (Ritsumeikan Univ.) Leaves of chaotic, compact foliated spaces ..... 15  
 Hiraku Nozawa (Ritsumeikan Univ.)  
 Jesús Antonio Álvarez López  
 (Univ. of Santiago de Compostela)  
 Carlos Meniño (Univ. de Vigo)

03-01-0001

- 20 Yuya Kodama (Tokyo Metro. Univ.) A generalization of the Lodha–Moore group ..... 15

**14:15–16:15**

03-01-0027

- 21 Yoshito Ishiki (RIKEN) On dense subsets in spaces of metrics ..... 15

03-01-0028

- 22 Yoshito Ishiki (RIKEN) Branching geodesics of the Gromov–Hausdorff distance ..... 15

03-01-0029

- 23 Yoshito Ishiki (RIKEN) Fractal dimensions and topological embeddings of the Hilbert cube into the Gromov–Hausdorff space ..... 15

03-01-0039

- 24 Homare Tadano (Yamaguchi Univ.) Boju–Funar type theorems via  $m$ -Bakry–Émery Ricci curvature with  $m \leq 1$  ..... 15

03-01-0040

- 25 Homare Tadano (Yamaguchi Univ.) Bonnet–Myers type theorems via  $m$ -Bakry–Émery Ricci curvature with  $\varepsilon$ -range ..... 15

03-01-0004

- 26 Tomohiro Fukaya (Tokyo Metro. Univ.) A topological product decomposition of Busemann space ..... 15

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

03-02-0004

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

## September 16th (Fri)

**9:30–12:00**

03-01-0037

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

03-01-0038

- 28 Mamoru Doi (Kagawa Univ.) On applications of differential geometric global smoothings of simple normal crossing complex surfaces with trivial canonical bundle ..... 15

03-01-0035

- 29 Naoto Yotsutani (Kagawa Univ.) Diffeomorphism classes of the doubling Calabi–Yau threefolds ..... 15

03-01-0034

- 30 Koki Matsuzaka (Hokkaido Univ.) Period integrals and intersection numbers of moduli space of quasimaps in the case of Calabi–Yau hypersurface in  $CP^{N-1}$  ..... 15

03-01-0006

- 31 Yuta Watanabe (Univ. of Tokyo) Bogomolov–Sommese type vanishing theorem for holomorphic vector bundles equipped with positive singular Hermitian metrics ..... 15

03-01-0020

- 32 Masaya Kawamura (Kagawa Nat. Coll. of Tech.) Compact almost Hermitian manifolds with quasi-negative curvature and the almost Hermitian curvature flow ..... 15

03-01-0009

- 33 Taito Tauchi (Kyushu Univ.) Existence of a conjugate point in the incompressible Euler flow on a three-dimensional ellipsoid ..... 15
- Tsuyoshi Yoneda (Hitotsubashi Univ.)
- Leandro A. Lichtenfelz (Wake Forest Univ.)

03-01-0025

- 34 Tomohiro Asano (Kanazawa Univ.) Completeness of derived interleaving distances for sheaves and  $C^0$  symplectic geometry ..... 15
- Yuichi Ike (Univ. of Tokyo)

**14:15–16:30**

03-01-0026

- 35 Akifumi Sako (Tokyo Univ. of Sci.) Category of quantizations and its application to inverse problem ..... 15

03-01-0030

- 36 Naoyuki Kanomata (Tokyo Univ. of Sci.) Exact solution of the multipoint correlation function in the  $\Phi_2^3$  finite matrix model ..... 15
- Akifumi Sako (Tokyo Univ. of Sci.)

03-01-0021

- 37 Noriaki Ikeda (Ritsumeikan Univ.) Homotopy momentum sections on pre-multisymplectic manifold ..... 15
- Yuji Hirota (Azabu Univ.)

03-01-0014

- 38 Shota Hamanaka  $C^0, C^1$  limit theorems for total scalar curvatures ..... 15
- (Mitsubishi Electric Corp. Adv. Tech. R&D Center)

03-01-0016

- 39 Tomoki Fujii (Tokyo Univ. of Sci.) Graphical translating solitons for the inverse mean curvature flow and isoparametric functions ..... 15

03-01-0017

- 40 Keita Kunikawa (Utsunomiya Univ.) Gaussian heat kernel estimates of Bamler–Zhang type along super Ricci flow ..... 15
- Yohei Sakurai (Saitama Univ.)

03-01-0015

- 41 Kei Kondo (Okayama Univ.) Reeb’s sphere theorem for Lipschitz functions ..... 15

# Complex Analysis

September 13th (Tue)

## 9:30–12:00

|                            |                                                                                   |                                                                                                             |    |
|----------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|----|
| <a href="#">04-01-0008</a> | 1 Sei-Ichiro Ueki (Yokohama Nat. Univ.)                                           | Isometries of analytic Besov-type Bergman–Orlicz spaces . . . . .                                           | 15 |
| <a href="#">04-01-0003</a> | 2 Rikio Yoneda (Kanazawa Univ.)                                                   | Invertibility of Toeplitz operators on the Bergman spaces with harmonic symbols . . . . .                   | 15 |
| <a href="#">04-01-0010</a> | 3 <u>Ryoya Fukasaku</u> (Kyushu Univ.)<br>Shinichi Tajima (Niigata Univ.*)        | Efficient algorithms for computing univariate residues . . . . .                                            | 15 |
| <a href="#">04-01-0005</a> | 4 Takanori Ayano (Osaka Metro. Univ.)                                             | Hurwitz integrality of the power series expansion of the sigma function for the telescopic curves . . . . . | 15 |
| <a href="#">04-01-0020</a> | 5 Md Shafiful Alam (Univ. of Barishal)<br><u>Toshiyuki Sugawa</u> (Tohoku Univ.)  | On geometric deduction of the solutions to generalized modular equations . . . . .                          | 15 |
| <a href="#">04-01-0015</a> | 6 Yohei Komori (Waseda Univ.)                                                     | Angle parameters for hyperelliptic Riemann surfaces . . . . .                                               | 10 |
| <a href="#">04-01-0009</a> | 7 Ryo Matsuda (Kyoto Univ.)                                                       | Geodesics on the Teichmüller space of a Riemann surface with $\mathbb{Z}$ action . . . . .                  | 15 |
| <a href="#">04-01-0002</a> | 8 <u>Hidetoshi Masai</u> (Tokyo Tech)<br>Greg McShane (Inst. Fourier)             | Deformation of complex structures on 4 punctured sphere along a Teichmüller geodesic . . . . .              | 15 |
| <a href="#">04-01-0013</a> | 9 <u>Katsuhiko Matsuzaki</u> (Waseda Univ.)<br>Huaying Wei (Jiangsu Normal Univ.) | Chordal Loewner chains and Teichmüller spaces on the half-plane . . . .                                     | 15 |

## 14:15–15:15

|                            |                                       |                                                                                                             |    |
|----------------------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------|----|
| <a href="#">04-01-0007</a> | 10 Shunji Horiguchi                   | Extended Mandelbrot sets of $f(z) = (z^m + c)^n$ . . . . .                                                  | 15 |
| <a href="#">04-01-0014</a> | 11 Takayuki Watanabe (Kyoto Univ.)    | On the stochastic bifurcations regarding random iterations of polynomials of the form $z^2 + c_n$ . . . . . | 15 |
| <a href="#">04-01-0004</a> | 12 Yūsuke Okuyama (Kyoto Inst. Tech.) | Uniform perfectness in non-archimedean dynamics . . . . .                                                   | 15 |
| <a href="#">04-01-0006</a> | 13 Yūsuke Okuyama (Kyoto Inst. Tech.) | Reduction, quantization, and degeneration in non-archimedean and complex dynamics . . . . .                 | 15 |

## 15:30–16:30 Talk Invited by Complex Analysis Section

|                            |                               |                                                       |
|----------------------------|-------------------------------|-------------------------------------------------------|
| <a href="#">04-02-0001</a> | Kazuya Tohya (Kanazawa Univ.) | Revisiting the Stothers–Mason theorem with Nevanlinna |
|----------------------------|-------------------------------|-------------------------------------------------------|

September 14th (Wed)

## 9:30–12:00

|                            |                                                                                   |                                                                                                                           |    |
|----------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|----|
| <a href="#">04-01-0018</a> | 14 Takumi Yagi (Kyoto Univ.)                                                      | Perturbations of quadratic Hénon maps with a semi-parabolic fixed point . . . . .                                         | 15 |
| <a href="#">04-01-0021</a> | 15 Satoshi Ogawa (Osaka Metro. Univ.)                                             | Linearization along a certain Levi-flat hypersurface with a $S^1$ -bundle structure . . . . .                             | 15 |
| <a href="#">04-01-0001</a> | 16 <u>Tatsuhiro Honda</u> (Senshu Univ.)<br>Hidetaka Hamada (Kyushu Sangyo Univ.) | Composition operators from the $\alpha$ -Bloch space into the $\beta$ -Bloch space in several complex variables . . . . . | 15 |

04-01-0016

- 17 Junjiro Noguchi On analytic Ax–Schanuel — I ..... 10  
 (Univ. of Tokyo\*/Tokyo Tech\*)

04-01-0017

- 18 Junjiro Noguchi On analytic Ax–Schanuel — II ..... 15  
 (Univ. of Tokyo\*/Tokyo Tech\*)

04-01-0022

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

04-01-0019

- 20 Kazuko Matsumoto Hartogs’ analyticity theorem for  $C^2$ -mappings and maximum principle  
 (Tokyo Univ. of Sci.) for  $q$ -convex functions ..... 15

04-01-0012

- 21 Ioannis D. Platis (Univ. of Crete) On the Kähler cone of the Heisenberg group ..... 15  
Lijie Sun (Yamaguchi Univ.)

04-01-0011

- 22 Takeo Ohsawa (Nagoya Univ.)<sup>b</sup> Existence theorems on complex manifolds which are complete at infinity  
 ..... 15

### 13:30–14:30 Talk Invited by Complex Analysis Section

04-02-0002

- Shinichi Tajima (Niigata Univ.\*) Complex and algebraic analysis of singularities, and algorithms

# Functional Equations

September 13th (Tue)

## 9:45–12:00

05-01-0005

- 1 Ichiro Tsukamoto (Toyo Univ.) On asymptotically linear solutions of  $x'' = \pm e^{\alpha\lambda t} x^{1+\alpha}$  ..... 10

05-01-0063

- 2 Shunya Adachi (Kumamoto Univ.) Monodromy invariant Hermitian forms for second order Fuchsian differential equations ..... 10

05-01-0018

- 3 Shuhei Mano (Inst. of Stat. Math.) A sum formula of GKZ-hypergeometric polynomials with matrices associated with chordal graphs at specific values ..... 10  
Nobuki Takayama (Kobe Univ.)

05-01-0043

- 4 Shinji Sasaki (Shibaura Inst. of Tech.) Borel summability of WKB-theoretic transformation near a double turning point ..... 10

05-01-0033

- 5 Takashi Aoki (Kinki Univ.\*) Exact WKB analysis for the Pearcey system with a large parameter ..... 10  
Takao Suzuki (Kinki Univ.)  
Shofu Uchida (Kinki Univ.)

05-01-0004

- 6 Masafumi Yoshino (Hiroshima Univ.) Movable singular point of solution of some Hamiltonian system ..... 10

05-01-0010

- 7 Kazuki Ishibashi A nonoscillation theorem for damped linear differential equations with a proportional derivative controller ..... 10  
(Hiroshima Nat. Coll. of Maritime Tech.)

05-01-0046

- 8 Hiroshi Ogawara (Kumamoto Univ.) Differential transcendence of solutions for second order linear  $q$  difference equations ..... 10

05-01-0021

- 9 Masato Hashizume (Hiroshima Univ.) A power type approximation of the Moser–Trudinger inequality ..... 10  
Norisuke Ioku (Tohoku Univ.)

05-01-0020

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

## 14:15–16:45

05-01-0003

- 11 Tetsutaro Shibata (Hiroshima Univ.) Oscillatory bifurcation problems for ODEs with logarithmic nonlinearity ..... 10

05-01-0011

- 12 Tatsuki Mori (Musashino Univ.) Secondary bifurcation and the direction of bifurcation of stationary solutions to a phase field model ..... 10  
Sohei Tasaki (Hokkaido Univ.)  
Tohru Tsujikawa (Univ. of Miyazaki\*)  
Shoji Yotsutani (Ryukoku Univ.\*)

05-01-0001

- 13 Ryuji Kajikiya Bifurcation of solutions for the sublinear Moore–Nehari differential equation ..... 10  
(Osaka Electro-Comm. Univ.)

05-01-0044

- 14 Yuki Osada (Tokyo Metro. Univ.) A singular perturbation problem for a nonlinear Schrödinger system with three wave interaction ..... 10

05-01-0045

- 15 Satoshi Tanaka (Tohoku Univ.) Existence and multiplicity of positive solutions to the scalar-field equation on large annuli in the 3-sphere ..... 10  
Kotaro Watanabe  
(Nat. Defense Acad. of Japan)  
Naoki Shioji (Yokohama Nat. Univ.)

05-01-0016

- 16 Yuki Naito (Hiroshima Univ.) Singular solutions for semilinear elliptic equations with general supercritical growth ..... 10  
Yasuhito Miyamoto (Univ. of Tokyo)

|                                                                 |    |                                                                                                                            |                                                                                                            |    |
|-----------------------------------------------------------------|----|----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|----|
| 05-01-0047                                                      | 17 | Jumpei Inoue (Waseda Univ.)                                                                                                | On the optimal habitat profile for the Dirichlet problem of a logistic equation . . . . .                  | 10 |
| 05-01-0069                                                      | 18 | Shuhei Kitano (Waseda Univ.)                                                                                               | $W^{\sigma,p}$ a priori estimates for fully nonlinear integral equations . . . . .                         | 10 |
| 05-01-0067                                                      | 19 | Shuhei Kitano (Waseda Univ.)                                                                                               | ABP maximum principles for fully nonlinear integral equations with unbounded inhomogeneous terms . . . . . | 10 |
| 05-01-0019                                                      | 20 | Yasuhiro Fujita (Univ. of Toyama)<br>Norikazu Yamaguchi (Univ. of Toyama)<br>Antonio Siconolfi<br>(Sapienza Univ. di Roma) | Hamilton–Jacobi flows and nowhere differentiability of initial data . . . .                                | 10 |
| 05-01-0008                                                      | 21 | Takashi Suzuki (Osaka Univ.)                                                                                               | Differentiability of eigenvalues concerning domain perturbations . . . . .                                 | 5  |
| <b>17:00–18:00 Talk Invited by Functional Equations Section</b> |    |                                                                                                                            |                                                                                                            |    |
| 05-02-0002                                                      |    | Daisuke Yamakawa<br>(Tokyo Univ. of Sci.)                                                                                  | Geometry and symmetry of isomonodromic deformations                                                        |    |

September 14th (Wed)

**9:45–12:00**

|                                                                 |    |                                                                                                |                                                                                                                                         |    |
|-----------------------------------------------------------------|----|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|----|
| 05-01-0050                                                      | 22 | Kazuya Hirose (Hokkaido Univ.)<br>Nao Hamamuki (Hokkaido Univ.)                                | A dynamical approach to lower gradient estimates for viscosity solutions of Hamilton–Jacobi equations . . . . .                         | 10 |
| 05-01-0028                                                      | 23 | Kuniyasu Misu (Hokkaido Univ.)                                                                 | A game-theoretic approach to the asymptotic behavior of solutions to an obstacle problem for the mean curvature flow equation . . . . . | 10 |
| 05-01-0053                                                      | 24 | Ryunosuke Mori (Meiji Univ.)<br>Eita Tomimatsu (Tokyo Tech)<br>Yoshihiro Tonegawa (Tokyo Tech) | On a strong solution to a generalized mean curvature flow with a transport term in the sense of Brakke’s formulation . . . . .          | 10 |
| 05-01-0049                                                      | 25 | Keisuke Takasao<br>(Kyoto Univ./Kyoto Univ.)                                                   | Existence of weak solution to volume preserving mean curvature flow in all dimensions . . . . .                                         | 10 |
| 05-01-0073                                                      | 26 | Ryo Ito (Kanagawa Univ.)<br>Hirokazu Ninomiya (Meiji Univ.)                                    | Unbounded traveling wave solutions for reaction-diffusion equations . .                                                                 | 10 |
| 05-01-0002                                                      | 27 | Yu Ichida (Meiji Univ.)                                                                        | Radially symmetric stationary solutions for certain chemotaxis systems based on compactification in phase space . . . . .               | 10 |
| 05-01-0048                                                      | 28 | Jumpei Inoue (Waseda Univ.)<br>Kousuke Kuto (Waseda Univ.)<br>Homare Sato (Waseda Univ.)       | Full cross-diffusion limit in the stationary SKT model with Dirichlet boundary conditions . . . . .                                     | 10 |
| 05-01-0072                                                      | 29 | Yuki Tsukamoto (Meiji Univ.)                                                                   | A convergence of reaction-diffusion approximation . . . . .                                                                             | 10 |
| 05-01-0025                                                      | 30 | Yuta Ishii (Ibaraki Nat. Coll. of Tech.)                                                       | The existence and stability of multi-peak solutions to the Gierer–Meinhardt model on $Y$ -shaped metric graph . . . . .                 | 10 |
| 05-01-0026                                                      | 31 | Yuta Ishii (Ibaraki Nat. Coll. of Tech.)                                                       | The existence and stability of multi-peak solutions to the Schnakenberg model on star shaped metric graph . . . . .                     | 10 |
| <b>13:30–14:30 Talk Invited by Functional Equations Section</b> |    |                                                                                                |                                                                                                                                         |    |
| 05-02-0004                                                      |    | Masataka Shibata (Meijo Univ.)                                                                 | Asymptotic behavior of positive solutions for a class of quasilinear elliptic equations with $H^1$ -critical growth                     |    |

## September 15th (Thu)

**9:45–12:00**

05-01-0041

- 32 Kota Ikeda (Meiji Univ.) Stability analysis of a uniform flow in a mathematical model of camphor boats ..... 10

05-01-0075

- 33 Yuki Kaneko (Japan Women's Univ.) Asymptotic behaviors of radially symmetric solutions for a free boundary problem of a reaction-diffusion equation with positive bistable nonlinearity ..... 10  
Hiroshi Matsuzawa (Kanagawa Univ.)  
Yoshio Yamada (Waseda Univ.)

05-01-0007

- 34 Masaaki Mizukami Occurrence of blow-up phenomena by chemotactic effects in a two-species chemotaxis-competition model ..... 10  
(Kyoto Univ. of Edu.)  
Yuya Tanaka (Tokyo Univ. of Sci.)  
Tomomi Yokota (Tokyo Univ. of Sci.)

05-01-0066

- 35 Florian Salin (Tohoku Univ.) Existence of energy solutions to fractional nonlinear diffusion equations posed on bounded domains ..... 10  
Goro Akagi (Tohoku Univ.)

05-01-0012

- 36 Dáithí Ó hAodha (Tohoku Univ.) The optimal decay estimate of solutions to the surface quasi-geostrophic equation ..... 10  
Tsukasa Iwabuchi (Tohoku Univ.)

05-01-0056

- 37 Tsukasa Iwabuchi (Tohoku Univ.) Semigroups generated by fractional Laplacian and Sobolev spaces on arbitrary domains ..... 10  
Reinhard Farwig (TU Darmstadt)

05-01-0024

- 38 Yutaka Kamimura Energy dependent inverse scattering and exploding soliton ..... 10  
(Tokyo Univ. of Marine Sci. and Tech.\*)

05-01-0035

- 39 Yohei Yamazaki (Kyushu Univ.) Center stable manifold for ground states of nonlinear Schrödinger equations with internal modes ..... 10  
Masaya Maeda (Chiba Univ.)

05-01-0031

- 40 Tomoharu Kinoshita (Waseda Univ.) Infinitely many solutions for nonlinear Schrödinger equations under Berestycki–Lions condition ..... 10

05-01-0064

- 41 Masayuki Hayashi (Kyoto Univ.) Traveling waves for a nonlinear Schrödinger system with quadratic interaction ..... 10  
Noriyoshi Fukaya (Tokyo Univ. of Sci.)  
Takahisa Inui  
(Osaka Univ./Univ. of British Columbia)

**14:15–16:45**

05-01-0022

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

05-01-0065

- 43 Wataru Nakahashi (Tokyo Univ. of Sci.) Non-smoothness of the fundamental solutions of Schrödinger equations in three dimensions with super-quadratic potential ..... 10  
Keiichi Kato (Tokyo Univ. of Sci.)

05-01-0023

- 44 Naoki Matsui (Tokyo Univ. of Sci.) Minimal-mass blow-up solutions for inhomogeneous nonlinear Schrödinger equations with potentials ..... 10

05-01-0036

- 45 Yuji Sagawa (Chiba Inst. of Tech.) Upper and lower  $L^2$ -decay bounds for a class of derivative nonlinear Schrödinger equations ..... 10  
Chunhua Li (Yanbian Univ.)  
Yoshinori Nishii (Tokyo Univ. of Sci.)  
Hideaki Sunagawa  
(Osaka Metro. Univ.)

05-01-0037

- 46 Takuya Sato (Tohoku Univ.) Optimal  $L^2$ -decay of solutions to dissipative nonlinear Schrödinger equations with a critical cubic nonlinearity ..... 10  
Naoyasu Kita (Kumamoto Univ.)

05-01-0055

- 47 Kouichi Taira (Ritsumeikan Univ.) Strichartz estimates for Schrödinger equations with slowly decreasing potentials in dimension two ..... 10

|                                                                 |                                                                                                                                  |                                                                                                                                       |    |
|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|----|
| 05-01-0015                                                      | 48 Toshiyuki Suzuki (Kanagawa Univ.)                                                                                             | Nonlinear Schrödinger equations with some singular electromagnetic potentials of the critical scaling . . . . .                       | 10 |
| 05-01-0051                                                      | 49 Hayato Miyazaki (Kagawa Univ.)<br>Masaki Kawamoto (Ehime Univ.)                                                               | Long-range scattering for a critical homogeneous type nonlinear Schrödinger equation with time-decaying harmonic potentials . . . . . | 10 |
| 05-01-0074                                                      | 50 Alex Hernandez Ardila<br>(Univ. Federal de Minas Gerais)<br>Masaru Hamano (Waseda Univ.)<br>Masahiro Ikeda (RIKEN/Keio Univ.) | Global dynamics of mass-energy threshold for NLS with an inverse-power potential . . . . .                                            | 10 |
| 05-01-0017                                                      | 51 Haruya Mizutani (Osaka Univ.)<br>Zijun Wan<br>(Central China Normal Univ.)<br>Xiaohua Yao<br>(Central China Normal Univ.)     | The $L^p$ -boundedness of wave operators for fourth-order Schrödinger operators in one space dimension . . . . .                      | 10 |
| 05-01-0058                                                      | 52 Ryosuke Nakasato (Waseda Univ.)                                                                                               | Global well-posedness and time-decay of solutions for the compressible quantum MHD model with Hall effect . . . . .                   | 10 |
| <b>17:00–18:00 Talk Invited by Functional Equations Section</b> |                                                                                                                                  |                                                                                                                                       |    |
| 05-02-0003                                                      | Hiroaki Kikuchi (Tsuda Coll.)                                                                                                    | Ground state of double power nonlinear Schrödinger equations in three space dimensions                                                |    |

September 16th (Fri)

**9:45–12:00**

|            |                                                                                                                               |                                                                                                                     |    |
|------------|-------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|----|
| 05-01-0039 | 53 Naofumi Mori<br>(Tokyo Univ. of Marine Sci. and Tech.)<br>Mari Okada (Yamaguchi Univ.)<br>Shuichi Kawashima (Waseda Univ.) | Decay property for symmetric hyperbolic system with memory-type diffusion . . . . .                                 | 10 |
| 05-01-0040 | 54 Naofumi Mori<br>(Tokyo Univ. of Marine Sci. and Tech.)<br>Mari Okada (Yamaguchi Univ.)<br>Shuichi Kawashima (Waseda Univ.) | Decay property for symmetric hyperbolic system with memory-type relaxation . . . . .                                | 10 |
| 05-01-0060 | 55 Shunsuke Kitamura (Tohoku Univ.)                                                                                           | Semilinear wave equations of derivative type with characteristic weights in one space dimension . . . . .           | 10 |
| 05-01-0054 | 56 Takiko Sasaki<br>(Musashino Univ./Tohoku Univ.)                                                                            | Singularity of a blow-up curve for systems of semilinear wave equations with different propagation speeds . . . . . | 10 |
| 05-01-0009 | 57 Yuta Wakasugi (Hiroshima Univ.)<br>Motohiro Sobajima<br>(Tokyo Univ. of Sci.)                                              | Asymptotic expansion of solutions to the wave equation with space-dependent damping . . . . .                       | 10 |
| 05-01-0062 | 58 Koichi Taniguchi (Tohoku Univ.)<br>Masahiro Ikeda (RIKEN/Keio Univ.)<br>Yuta Wakasugi (Hiroshima Univ.)                    | On global existence and asymptotic behavior for nonlinear damped wave equations on measure spaces . . . . .         | 10 |
| 05-01-0061 | 59 Yusuke Ishigaki (Tokyo Tech)<br>Yoshihiro Ueda (Kobe Univ.)                                                                | Asymptotic stability of stationary solutions to outflow problem for compressible viscoelastic system . . . . .      | 10 |
| 05-01-0057 | 60 Yoshihiro Ueda (Kobe Univ.)<br>Marcio Antonio Jorge Silva<br>(State Univ. of Londrina)                                     | Memory effects on the stability of viscoelastic Timoshenko systems . . .                                            | 10 |

05-01-0027

- 61 Ikki Fukuda (Shinshu Univ.) Asymptotic behavior of solutions to the Cauchy problem for the BBM–  
Masahiro Ikeda (RIKEN/Keio Univ.) Burgers equation ..... 10

05-01-0068

- 62 Masashi Ohnawa Asymptotic stability of river flows subject to friction ..... 10  
(Tokyo Univ. of Marine Sci. and Tech.)  
Masahiro Suzuki (Nagoya Inst. of Tech.)

**14:15–16:45**

05-01-0030

- 63 Tetu Makino (Yamaguchi Univ.\*) On the equation of motion of the rotating atmosphere of the Earth  
..... 10

05-01-0070

- 64 Naoki Hamamoto (Osaka Metro. Univ.) Higher-dimensional extension of uncertainty principle inequality with a  
degenerate structure for solenoidal fields ..... 10

05-01-0038

- 65 Hiroyuki Tsurumi (Kyoto Univ.) Existence of the 2D stationary Navier–Stokes flow on the whole plane  
Yasunori Maekawa (Kyoto Univ.) around a radial flow ..... 10

05-01-0014

- 66 Masahiro Suzuki (Nagoya Inst. of Tech.) Stationary solutions of the Vlasov–Poisson system ..... 10  
Masahiro Takayama (Keio Univ.)

05-01-0013

- 67 Keiji Yoneda (Kyushu Univ.) Global solutions for the rotating magnetohydrodynamics system in the  
Ryo Takada (Univ. of Tokyo) scaling critical Sobolev space ..... 10

05-01-0042

- 68 Motofumi Aoki (Tohoku Univ.) A sufficient condition for the energy conservation law of compressible  
Iwabuchi Tsukasa (Tohoku Univ.) Navier–Stokes equations ..... 10

05-01-0032

- 69 Taiki Takeuchi (Waseda Univ.) On the local well-posedness and inviscid limits for the Keller–Segel–  
Navier–Stokes system ..... 10

05-01-0052

- 70 Kenta Oishi (Waseda Univ.) On the global well-posedness and decay for a free boundary problem of  
Yoshihiro Shibata (Waseda Univ.) the Navier–Stokes equation in unbounded domains ..... 10

05-01-0029

- 71 Keiichi Watanabe (Waseda Univ.) Stability of stationary solutions to a free boundary problem of the  
Navier–Stokes equations ..... 10

05-01-0034

- 72 Mikihiro Fujii (Kyushu Univ.) Compressible Navier–Stokes–Coriolis system in critical Besov spaces .. 10  
Keiichi Watanabe (Waseda Univ.)

05-01-0059

- 73 Naoto Kajiwara (Gifu Univ.) Maximal regularity for the Stokes equations with various boundary  
conditions ..... 10

**17:00–18:00 Talk Invited by Functional Equations Section**

05-02-0001

- Yutaka Terasawa (Nagoya Univ.) Weak solutions of nonlocal diffuse interface model for two-phase flows  
and those local asymptotics

# Real Analysis

September 15th (Thu)

## 9:30–11:30

- 06-01-0005  
1 Hiroyasu Mizuguchi (Kansai Univ.) On the lower bound of a geometric constant in normed linear space ..... 15
- 06-01-0011  
2 Koji Aoyama (Chiba Univ.) A quasinonexpansive extension of a mapping with an attractive point ..... 15
- 06-01-0012  
3 Yasunori Kimura (Toho Univ.) Comparison of approximation methods of fixed points for a complete geodesic space ..... 15
- 06-01-0017  
4 Jun Kawabe (Shinshu Univ.) The completeness of the Lorentz spaces defined by the Choquet integral ..... 15  
Naoki Yamada
- 06-01-0013  
5 Hiroki Saito (Nihon Univ.) Choquet integrals, Hausdorff content and sparse operator ..... 15  
Hitoshi Tanaka  
(Tsukuba Univ. of Tech.)
- 06-01-0002  
6 Hiroki Saito (Nihon Univ.) A note on embedding inequalities for weighted Sobolev and Besov space ..... 15
- 14:15–16:20
- 06-01-0028  
7 Jun Okamoto (Kyoto Univ.) On a singular limit of the Kobayashi–Warren–Carter energy ..... 15
- 06-01-0015  
8 Youhei Tsutsui (Kyoto Univ.) Rearrangements, medians and their maximal functions ..... 15
- 06-01-0016  
9 Ryota Kawasumi (Chuo Univ.) Pointwise multipliers on Orlicz–Morrey spaces of the second kind .... 15
- 06-01-0018  
10 Yoichi Miyazaki (Nihon Univ.) Improvement of the logarithmic Sobolev inequalities with BMO norm ..... 15
- 06-01-0027  
11 Naoto Shida (Osaka Univ.) Boundedness of bilinear pseudo-differential operators with  $BS_{0,0}^m$  symbols on Sobolev spaces ..... 15
- 06-01-0024  
12 Takanobu Hara (Hokkaido Univ.) On singular elliptic problems and Sobolev type embeddings ..... 15

## 16:40–17:40 Talk Invited by Real Analysis Section

- 06-02-0001  
Takeshi Iida Orlicz maximal operators on  $L^p$  and Morrey spaces  
(Fukushima Nat. Coll. of Tech.)

September 16th (Fri)

## 9:30–11:50

- 06-01-0020  
13 Yoshiho Akagawa Time-dependence of the threshold function in a perfect plasticity model ..... 15  
(Gifu Nat. Coll. of Tech.)  
Risei Kano (Kochi Univ.)  
Fukao Takeshi (Kyoto Univ. of Edu.)
- 06-01-0001  
14 Yutaro Chiyo (Tokyo Univ. of Sci.) Stabilization in a quasilinear attraction-repulsion chemotaxis system: balanced case ..... 15  
Tomomi Yokota (Tokyo Univ. of Sci.)
- 06-01-0006  
15 Chiharu Kosugi (Japan Women's Univ.) A large time behavior of solutions to initial and boundary value problems for compressible elastic curves ..... 15  
Toyoehiko Aiki (Japan Women's Univ.)

06-01-0021

- 16 Shodai Kubota (Kanagawa Univ.) Periodic solutions for KWC type systems of grain boundary motions  
Ken Shirakawa (Chiba Univ.) ..... 15

06-01-0026

- 17 Keiichiro Kagawa (Waseda Univ.) Existence of solutions for initial value problem of viscous Cahn–Hilliard  
Ôtani Mitsuharu (Waseda Univ.\*) equation with dynamic boundary condition ..... 15

06-01-0007

- 18 Kosuke Kita (Waseda Univ.) Existence and nonexistence of global solutions to nonlinear diffusion  
Mitsuharu Ôtani (Waseda Univ.) equations on a bounded domain ..... 15

06-01-0022

- 19 Takanori Kuroda (Waseda Univ.) Existence and non-existence of stationary solutions of the complex  
Mitsuharu Ôtani (Waseda Univ.) Ginzburg–Landau equations ..... 15  
Thierry Cazenave (Sorbonne Univ.)

06-01-0008

- 20 Shunsuke Kurima (Tokyo Univ. of Sci.) Convergence of a singular nonlocal phase field system of conserved type  
..... 15

**14:15–16:20**

06-01-0010

- 21 Masahiro Ikeda (RIKEN/Keio Univ.) Heat equation on the hypergraph containing vertices with given data  
Shun Uchida (Oita Univ.) ..... 15  
Takeshi Fukao (Kyoto Univ. of Edu.)

06-01-0019

- 22 Kota Kumazaki (Nagasaki Univ.) Large time behavior of a solution to a free boundary problem describing  
the penetration of diffusant into rubber ..... 15

06-01-0025

- 23 Hiroshi Watanabe (Oita Univ.) Decay estimates for entropy solutions to scalar parabolic-hyperbolic  
conservation laws ..... 15

06-01-0023

- 24 Hiroto Kuroda (Hokkaido Univ.) Radial solutions to the fourth-order total variation flow in  $\mathbb{R}^n$  ..... 15  
Michał Łasica  
(Polish Acad. of Sci./Univ. of Tokyo)  
Yoshikazu Giga (Univ. of Tokyo)

06-01-0009

- 25 Takeshi Fukao (Kyoto Univ. of Edu.) The Cahn–Hilliard equation with forward-backward dynamic boundary  
Pierluigi Colli condition via vanishing viscosity ..... 15  
(Univ. degli Studi di Pavia)  
Luca Scarpa (Politecnico di Milano)

06-01-0014

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

06-01-0004

- 27 Noriaki Yamazaki (Kanagawa Univ.) Singular optimal control problems for doubly nonlinear evolution inclu-  
Nobuyuki Kenmochi (Chiba Univ.\*) sions with quasi-variational structure ..... 15  
Ken shirakawa (Chiba Univ.)

**16:40–17:40 Talk Invited by Real Analysis Section**

06-02-0002

- Masaaki Mizukami Global existence and asymptotic behavior in some chemotaxis-consumption  
(Kyoto Univ. of Edu.) system

# Functional Analysis

September 13th (Tue)

10:00–11:45

07-01-0012

- 1 Yoritaka Iwata (Kansai Univ.) Generation of nolinear semigroup associated with second or third order nonlinearity ..... 15

07-01-0003

- 2 Itaru Sasaki (Shinshu Univ.) A general theory of diagonalization by Bogoliubov transformations ... 15

07-01-0005

- 3 Masaki Kawamoto (Ehime Univ.) Existence and nonexistence of wave operators for critical time-decaying harmonic oscillator ..... 15  
Atsuhide Ishida (Tokyo Univ. of Sci.)

07-01-0029

- 4 Fumio Hiroshima (Kyushu Univ.) Matrix representation of time operators of 1D harmonic oscillator .... 15  
Noriaki Teranishi (Hokkaido Univ.)

07-01-0020

- 5 Noriaki Teranishi (Hokkaido Univ.) A genralization of the phase operator ..... 15  
Fumio Hiroshima (Kyushu Univ.)

07-01-0026

- 6 Pavel Exner Continuum limit of the lattice quantum graph Hamiltonian ..... 15  
(Czech Tech. Univ./Czech Acad. of Sci.)  
Shu Nakamura (Gakushuin Univ.)  
Yukihide Tadano (Tokyo Univ. of Sci.)

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

07-02-0003

- Youko Umeta (Josai Univ.) A unified family of  $P_J$ -hierarchies ( $J=I,II,IV,34$ ) with a large parameter

September 14th (Wed)

9:30–12:00

07-01-0030

- 7 Hideyuki Ishi (Osaka Metro. Univ.) Construction of homogeneous cones from colored homogeneous graphs ..... 15

07-01-0013

- 8 Hideto Nakashima (Inst. of Stat. Math.) On  $b$ -functions and invariant differential operators of prehomogeneous vector spaces associated with sub-Hankel determinants ..... 15

07-01-0017

- 9 Kyo Nishiyama (Aoyama Gakuin Univ.) Steinberg theory for double flag varieties and RSK correspondence ... 15  
Lucas Fresse (IECL, Univ. Lorraine)

07-01-0018

- 10 Kyo Nishiyama (Aoyama Gakuin Univ.) Action of a Hecke algebra on the space of orbits on a double flag variety ..... 15  
Lucas Fresse (IECL, Univ. Lorraine)

07-01-0023

- 11 Atsumu Sasaki (Tokai Univ.) Invariant measures on non-symmetric reductive spherical homogeneous spaces of rank-one type ..... 15

07-01-0028

- 12 Kazuki Kannaka (RIKEN) Multiplicities of stable eigenvalues on compact anti-de Sitter 3-manifolds ..... 15

07-01-0027

- 13 Hiroyoshi Tamori (Hokkaido Univ.) On the existence of a nonzero linear period ..... 15

07-01-0025

- 14 Cid Reyes-Bustos Shifted non-commutative harmonic oscillators ..... 15  
(NTT Inst. for Funda. Math.)

Masato Wakayama

(NTT Inst. for Funda. Math./Kyushu Univ.\*)

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

07-02-0002

Hiraku Atobe (Hokkaido Univ.)<sup>b</sup> Local newforms for unramified odd unitary groups

September 15th (Thu)

**9:30–12:00**

07-01-0001

15 Shigeru Furuichi (Nihon Univ.) On inequalities related to logarithmic mean ..... 15

07-01-0002

16 Yuki Seo (Osaka Kyoiku Univ.) Karcher mean and normalized determinant ..... 15

Sora Hiramatsu

(Osaka Prefectural Izumiohtsu High School)

07-01-0007

17 Mitsuru Uchiyama Symmetric matrix means ..... 15

(Shimane Univ.\* / Ritsumeikan Univ.)

07-01-0011

18 Yoichi Udagawa (Ritsumeikan Univ.) Stability of  $\mathcal{AN}$ -property for the induced Aluthge transformations ... 15

Hiroyuki Osaka (Ritsumeikan Univ.)

Takeaki Yamazaki (Toyo Univ.)

Gola Ramesh (Indian Inst. Tech.)

07-01-0015

19 Hiroyuki Osaka (Ritsumeikan Univ.) On a subclass of norm attaining operators ..... 15

Golla Ramesh

(Indian Inst. of Tech. Hyderabad)

07-01-0008

20 Osamu Hatori (Niigata Univ.\*) The complex Mazur–Ulam property for extremely  $C$ -regular spaces ... 15

07-01-0016

21 Shiho Oi (Niigata Univ.) Jordan  $*$ -homomorphisms on Banach algebras of vector-valued Lipschitz

maps ..... 15

07-01-0014

22 Michiya Mori (RIKEN) Lattice isomorphisms between projection lattices of von Neumann al-

gebras ..... 15

**14:15–16:00**

07-01-0010

23 Hiroshi Inoue (Kyushu Sangyo Univ.) An unbounded generalization of Tomita's observable algebras ..... 15

07-01-0004

24 Yusuke Isono (Kyoto Univ.) Pointwise inner automorphisms of almost periodic factors ..... 15

07-01-0006

25 Takuya Takeishi (Kyoto Inst. Tech.) Constructing number field isomorphisms from  $*$ -isomorphisms of certaincrossed product  $C^*$ -algebras ..... 15

Christopher Bruce (Univ. Glasgow)

07-01-0021

26 Keisuke Yoshida (Hokkaido Univ.) Non-commutative topological entropy for some Exel–Laca algebras ... 15

07-01-0022

27 Tsuyoshi Kajiwara (Okayama Univ.) Cores of the  $C^*$ -algebras associated with self-similar maps ..... 15

Yasuo Watatani (Kyushu Univ.\*)

07-01-0009

28 Yasuo Watatani (Kyushu Univ.\*) Non-linear positive maps on  $C^*$ -algebras, non-linear traces on matrix

algebras and majorization theory ..... 15

Masaru Nagisa

(Chiba Univ. / Ritsumeikan Univ.)

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

07-02-0001

Yuhei Suzuki (Hokkaido Univ.)<sup>b</sup> Non-commutative amenable actions

# Statistics and Probability

September 13th (Tue)

## 9:30–11:50

08-01-0008

- 1 Noe Kawamoto (Hokkaido Univ.) Spread-out limit of the critical points for lattice trees and lattice animals in dimensions  $d > 8$  ..... 15

08-01-0009

- 2 Yuta Nakagawa (Kyoto Univ.) Density of states for random Schrödinger operators associated with Gibbs point processes ..... 15

08-01-0039

- 3 Hiroshi Kawabi (Keio Univ.) Stochastic quantization associated with the  $\exp(\Phi)_2$ -quantum field model driven by the space-time white noise ..... 15  
Masato Hoshino (Osaka Univ.)  
Seiichiro Kusuoka (Kyoto Univ.)

08-01-0002

- 4 Yuji Hamana (Univ. of Tsukuba) Square-root boundaries for Bessel processes ..... 10

08-01-0029

- 5 Shun Yanashima (Tokyo Metro. Univ.) On the weak convergence of conditioned Bessel bridges ..... 15  
Kensuke Ishitani (Tokyo Metro. Univ.)

08-01-0017

- 6 Hiroyuki Matsumoto Laplacian and Brownian motion on positive definite matrices, revisited ..... 15  
(Aoyama Gakuin Univ.)

08-01-0036

- 7 Kôhei Sasaya (Kyoto Univ.) Some relation between spectral dimension and Ahlfors regular conformal dimension of resistance metrics ..... 15

08-01-0018

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

## 14:15–15:15 Award Lecture for the 2021 MSJ Analysis Prize

08-02-0001

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

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

08-02-0002

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

September 14th (Wed)

## 9:30–11:30

08-01-0027

- 9 Yuki Hirai (Kyoto Univ.) Linear integral equations with additive noise in the pathwise Itô calculus ..... 15

08-01-0041

- 10 Yushi Hamaguchi (Osaka Univ.) Chaos expansions for linear stochastic Volterra integral equations .... 15

08-01-0003

- 11 Toshio Nakata (Fukuoka Univ. of Edu.) Large deviations for super-heavy tailed distributions ..... 10

08-01-0010

- 12 Shigeyoshi Ogawa (Ritsumeikan Univ.) Mean value theorems for the noncausal stochastic integral ..... 10

08-01-0012

- 13 Yuki Ueda (Hokkaido Univ. of Edu.) Regularity results on the class of Boolean selfdecomposable distributions ..... 15  
Takahiro Hasebe (Hokkaido Univ.)  
Kei Noba (Inst. of Stat. Math.)  
Noriyoshi Sakuma (Nagoya City Univ.)

08-01-0038

- 14 Shunsuke Usuki (Kyoto Univ.)  $\times a$  and  $\times b$  empirical measures, the irregular set and entropy ..... 15

08-01-0013

- 15 Yuto Nakajima (Kyoto Univ.) Hausdorff dimension of sets with restricted, slowly growing partial quotients in the semi-regular continued fraction ..... 15  
Hiroki Takahashi (Keio Univ.)

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

September 15th (Thu)

**9:30–12:00**

08-01-0031

- 16 Toshiharu Fujita (Kyushu Inst. of Tech.) On recursive methods for converging decision process in stochastic environment ..... 15

08-01-0037

- 17 Teruo Tanaka (Hiroshima City Univ.) Prophet inequalities for finite stage multiparameter optimal stopping problems ..... 10

08-01-0028

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

08-01-0025

- 19 Ryuya Yahagi (Tokyo Univ. of Sci.)  
Ayumu Uehara (Tokyo Univ. of Sci.)  
Satoru Shinoda (Yokohama City Univ.)  
Takuya Yoshimoto (Chugai Pharmaceutical Co.)  
Kouji Tahata (Tokyo Univ. of Sci.) The generalization of marginal cumulative inhomogeneity model for multi-way contingency tables ..... 15

08-01-0006

- 20 Koji Tsukuda (Kyushu Univ.) On the asymptotic behavior of the length of a Pitman partition ..... 15

08-01-0014

- 21 Yoichi Miyata (Takasaki City Univ. of Econ.)  
Takayuki Shiohama (Nanzan Univ.)  
Toshihiro Abe (Hosei Univ.) On an extension of the family of sine-skew circular distributions ..... 15

08-01-0034

- 22 Yohji Akama (Tohoku Univ.)  
Atina Husnaqilati (Tohoku Univ.) A dichotomous behavior of Guttman–Kaiser criterion from equi-correlated normal population ..... 15

08-01-0033

- 23 Yohji Akama (Tohoku Univ.) Shrinkage of eigenvalue distributions of sample correlation matrix formed from equi-correlated normal population ..... 15

**12:10–12:45 Presentation Ceremony for the 2021 & 2022 MSJ Analysis Prize****14:25–15:25 Talk Invited by Statistics and Probability Section**

08-02-0003

- Shinpei Imori (Hiroshima Univ.) Variable selection in high-dimensional multivariate linear regression models

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

08-02-0004

- Yuichi Goto (Kyushu Univ.) Integrated copula spectrum with applications to tests for time-reversibility and tail symmetry

September 16th (Fri)

**9:30–12:00**

08-01-0019

- 24 Nobuhiro Taneichi (Hokkaido Univ. of Edu.)  
Yuri Sekiya (Hokkaido Univ. of Edu.)  
Jun Toyama (Inst. for Pract. Appl. of Math.) Improvement of the test statistics for conditional independence in 3-way contingency table based on asymptotic expansion ..... 15

|                            |                                                                                                                                                                                           |                                                                                                                                      |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">08-01-0021</a> |                                                                                                                                                                                           |                                                                                                                                      |
| 25                         | <a href="#">Koshiro Yonenaga</a> (Hokkaido Univ.)<br><a href="#">Akio Suzukawa</a> (Hokkaido Univ.)                                                                                       | Higher order moments of the product of a Wishart matrix and a normal vector ..... 15                                                 |
| <a href="#">08-01-0035</a> |                                                                                                                                                                                           |                                                                                                                                      |
| 26                         | <a href="#">Ayaka Yagi</a> (Tokyo Univ. of Sci.)<br><a href="#">Takashi Seo</a> (Tokyo Univ. of Sci.)                                                                                     | Multivariate pairwise comparisons among mean vectors with monotone missing data ..... 15                                             |
| <a href="#">08-01-0040</a> |                                                                                                                                                                                           |                                                                                                                                      |
| 27                         | <a href="#">Yugo Nakayama</a> (Kyoto Univ.)<br><a href="#">Kazuyoshi Yata</a> (Univ. of Tsukuba)<br><a href="#">Makoto Aoshima</a> (Univ. of Tsukuba)                                     | Robustness in high-dimensional principal component analysis ..... 15                                                                 |
| <a href="#">08-01-0005</a> |                                                                                                                                                                                           |                                                                                                                                      |
| 28                         | <a href="#">Satoshi Kuriki</a> (Inst. of Stat. Math.)<br><a href="#">Takahiko Matsubara</a><br>(High Energy Accelerator Res. Organ.)                                                      | Asymptotic expansion of the expected Minkowski functional for isotropic central limit random fields ..... 15                         |
| <a href="#">08-01-0032</a> |                                                                                                                                                                                           |                                                                                                                                      |
| 29                         | <a href="#">Takayuki Yamada</a> (Shimane Univ.)                                                                                                                                           | High-dimensional asymptotic expansion of the null distribution for testing complete independence of normal random variables ..... 10 |
| <a href="#">08-01-0042</a> |                                                                                                                                                                                           |                                                                                                                                      |
| 30                         | <a href="#">Kento Egashira</a> (Univ. of Tsukuba)<br><a href="#">Kazuyoshi Yata</a> (Univ. of Tsukuba)<br><a href="#">Makoto Aoshima</a> (Univ. of Tsukuba)                               | High-dimensional asymptotic behaviors of hierarchical clustering ..... 15                                                            |
| <a href="#">08-01-0043</a> |                                                                                                                                                                                           |                                                                                                                                      |
| 31                         | <a href="#">Hiroki Masuda</a><br>(Kyushu Univ./Univ. of Tokyo)                                                                                                                            | BIC-type model selection for locally stable regression ..... 15                                                                      |
| <b>14:25–16:50</b>         |                                                                                                                                                                                           |                                                                                                                                      |
| <a href="#">08-01-0015</a> |                                                                                                                                                                                           |                                                                                                                                      |
| 32                         | <a href="#">Yujie Xue</a> (Waseda Univ.)<br><a href="#">Masanobu Taniguchi</a> (Waseda Univ.)                                                                                             | A new generalized estimator for autoregressive coefficient which improves MLE uniformly ..... 10                                     |
| <a href="#">08-01-0020</a> |                                                                                                                                                                                           |                                                                                                                                      |
| 33                         | <a href="#">Kou Fujimori</a> (Shinshu Univ.)<br><a href="#">Yuichi Goto</a> (Kyushu Univ.)<br><a href="#">Yan Liu</a> (Waseda Univ.)<br><a href="#">Masanobu Taniguchi</a> (Waseda Univ.) | The Lasso-based principal component analysis for high-dimensional stationary time series ..... 15                                    |
| <a href="#">08-01-0024</a> |                                                                                                                                                                                           |                                                                                                                                      |
| 34                         | <a href="#">Tong Liu</a> (Waseda Univ.)<br><a href="#">Yujie Xue</a> (Waseda Univ.)<br><a href="#">Masanobu Taniguchi</a> (Waseda Univ.)                                                  | Characterization of time series models by various divergences ..... 10                                                               |
| <a href="#">08-01-0026</a> |                                                                                                                                                                                           |                                                                                                                                      |
| 35                         | <a href="#">Fumiya Akashi</a> (Univ. of Tokyo)                                                                                                                                            | Robust statistical inference for vector autoregressive models by smoothed generalized empirical likelihood method ..... 15           |
| <a href="#">08-01-0044</a> |                                                                                                                                                                                           |                                                                                                                                      |
| 36                         | <a href="#">Yan Liu</a> (Waseda Univ.)                                                                                                                                                    | A minimum contrast estimation for spectral densities of multivariate time series ..... 15                                            |
| <a href="#">08-01-0030</a> |                                                                                                                                                                                           |                                                                                                                                      |
| 37                         | <a href="#">Shogo Nakakita</a> (Univ. of Tokyo)<br><a href="#">Masaaki Imaizumi</a> (Univ. of Tokyo)                                                                                      | Benign overfitting in overparameterized linear time series models ..... 15                                                           |
| <a href="#">08-01-0004</a> |                                                                                                                                                                                           |                                                                                                                                      |
| 38                         | <a href="#">Yoshihiko Maesono</a> (Chuo Univ.)<br><a href="#">Koudai Nakamura</a> (Chuo Univ.)                                                                                            | On mean squared error of kernel quantile estimator ..... 10                                                                          |
| <a href="#">08-01-0016</a> |                                                                                                                                                                                           |                                                                                                                                      |
| 39                         | <a href="#">Yoshihide Kakizawa</a> (Hokkaido Univ.)                                                                                                                                       | Asymmetric kernel density derivative estimation ..... 15                                                                             |
| <a href="#">08-01-0023</a> |                                                                                                                                                                                           |                                                                                                                                      |
| 40                         | <a href="#">Atsushi Komaba</a> (Univ. of Yamanashi)<br><a href="#">Hisashi Johno</a> (Univ. of Yamanashi)<br><a href="#">Kazunori Nakamoto</a><br>(Univ. of Yamanashi)                    | An extension of the two-sample Kolmogorov–Smirnov test ..... 15                                                                      |

# Applied Mathematics

September 13th (Tue)

## 10:00–11:45

09-01-0042

- 1 Naoki Matsumoto (Keio Univ.) The minimum number of vertices of graphs containing two monochromatic triangles for any edge 2-coloring ..... 15  
Masaki Yamamoto (Seikei Univ.)  
Masahito Yamazaki (Seikei Univ.)

09-01-0040

- 2 Yumiko Ohno (Yokohama Nat. Univ.) The difference between the achromatic number and the pseudoachromatic number of caterpillars ..... 15  
Naoki Matsumoto (Keio Univ.)

09-01-0030

- 3 Kengo Enami (Seikei Univ.) Surface immersions and projective planar graphs ..... 15  
Atsuhiko Nakamoto  
 (Yokohama Nat. Univ.)  
Kenta Ozeki (Yokohama Nat. Univ.)

09-01-0035

- 4 Hideaki Morita (Muroran Inst. of Tech.) On the Ihara expression for graphs zeta functions ..... 15  
Ayaka Ishikawa (Yokohama Nat. Univ.)

09-01-0036

- 5 Ayaka Ishikawa (Yokohama Nat. Univ.) A remark on inverse arcs in finite digraphs ..... 15  
Hideaki Morita (Muroran Inst. of Tech.)

09-01-0017

- 6 Iwao Sato (Oyama Nat. Coll. of Tech.) A generalized Grover/Zeta correspondence ..... 15  
Norio Konno (Yokohama Nat. Univ.)  
Takashi Komatsu  
 (Math. Res. Inst. Calc for Industry)  
Shunya Tamura (Yokohama Nat. Univ.)

## 14:15–15:25

09-01-0056

- 7 Shinsuke Odagiri (Shumei Univ.) Faces of maximal chain polytopes and guided crown structure ..... 15

09-01-0020

- 8 Chie Nara (Meiji Univ.) Continuous flattening of all polyhedral manifolds using countably infinite creases ..... 15  
Jin-ichi Itoh (Sugiyama Jogakuen Univ.)  
Erik Demaine (MIT)

09-01-0012

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

09-01-0025

- 10 Daiki Kawabata (Osaka Pref. Univ.) On the achievement of the Griesmer bound ..... 15  
Tatsuya Maruta (Osaka Metro. Univ.)

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

09-02-0003

- Momoko Hayamizu (Waseda Univ.) Combinatorics of phylogenetic trees and networks

September 14th (Wed)

## 10:00–11:45

09-01-0014

- 11 Akihiro Higashitani (Osaka Univ.) Classification of  $(\pm 1)$ -skew polynomial rings by switching of graphs and its associated simplicial complexes ..... 15  
Kenta Ueyama (Hirosaki Univ.)

|                    |    |                                                                                                                                          |                                                                                                        |    |
|--------------------|----|------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----|
| 09-01-0003         | 12 | <u>Shuhei Tsujie</u> (Hokkaido Univ. of Edu.)<br>Tan Nhat Tran (Ruhr Univ. Bochum)                                                       | A characterization of strongly chordal graphs by edge-labeling . . . . .                               | 15 |
| 09-01-0048         | 13 | <u>Norifumi Ojio</u> (Toyota Tech. Inst.)<br>Hajime Matsui (Toyota Tech. Inst.)                                                          | Minimum Euclidean weights for codes over rational integer quotient rings via tensor products . . . . . | 15 |
| 09-01-0016         | 14 | <u>Ken'ichi Yoshida</u> (Ochanomizu Univ.)<br>Hiroki Kodama<br>(Tohoku Univ. / RIKEN)                                                    | A mathematical model of network elastoplasticity . . . . .                                             | 15 |
| 09-01-0049         | 15 | <u>Kei Saito</u> (Kanagawa Univ.)<br>Etsuo Segawa (Yokohama Nat. Univ.)                                                                  | Spectral analysis for continuous-time Szegedy walks . . . . .                                          | 15 |
| 09-01-0015         | 16 | <u>Tomoyuki Terada</u><br>(Yokohama Nat. Univ./Kanazawa Inst. of Tech.)<br>Yusuke Ide (Nihon Univ.)<br>Norio Konno (Yokohama Nat. Univ.) | Probability measure for the Szegedy walk on the path graph . . . . .                                   | 15 |
| <b>13:00–14:15</b> |    |                                                                                                                                          |                                                                                                        |    |
| 09-01-0013         | 17 | <u>Shinya Fujita</u> (Yokohama City Univ.)                                                                                               | Classification of graphs in terms of the domination number of central graphs . . . . .                 | 10 |
| 09-01-0002         | 18 | <u>Kiyoshi Ando</u> (Nat. Inst. of Informatics)                                                                                          | Properly contractible edges and properly liftable vertices in a 4-connected graph . . . . .            | 15 |
| 09-01-0021         | 19 | <u>Akira Saito</u> (Nihon Univ.)<br>Shingo Degawa (Nihon Univ.)                                                                          | Secure domination in $C_5$ -free graphs . . . . .                                                      | 15 |
| 09-01-0022         | 20 | <u>Akira Saito</u> (Nihon Univ.)<br>Hiroya Fijinami<br>(Grad. Univ. for Adv. Stud.)                                                      | Relative length of triangle-free graphs . . . . .                                                      | 15 |

## September 15th (Thu)

**9:30–12:00**

|            |    |                                                                                                    |                                                                                                              |    |
|------------|----|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----|
| 09-01-0018 | 21 | <u>Tokuhiro Eto</u> (Univ. of Tokyo)                                                               | On a discrete scheme for the Mullins–Sekerka flow and its fine properties . . . . .                          | 15 |
| 09-01-0054 | 22 | <u>Kazunori Matsui</u> (Seikei Univ.)                                                              | The rotation form and the Lagrange–Galerkin method for the Navier–Stokes equations . . . . .                 | 15 |
| 09-01-0033 | 23 | <u>Tomoya Kemmochi</u> (Nagoya Univ.)                                                              | $L^p$ -resolvent estimates for finite element approximation of the Stokes operator . . . . .                 | 15 |
| 09-01-0019 | 24 | <u>Daisuke Koyama</u><br>(Univ. of Electro-Comm.)                                                  | An a priori difference estimate between the IP method and the HJ method for the biharmonic problem . . . . . | 15 |
| 09-01-0026 | 25 | <u>Yoshitaka Watanabe</u> (Kyushu Univ.)                                                           | Another numerical verification proof of steady-state solutions for the Proudman–Johnson equation . . . . .   | 15 |
| 09-01-0034 | 26 | <u>Hiroshi Fujiwara</u> (Kyoto Univ.)<br><u>Takaaki Nishida</u> (Kyoto Univ.*)                     | Heat convections in the horizontal layer with non-uniform heat supply. Stommel model . . . . .               | 15 |
| 09-01-0001 | 27 | <u>Takashi Sakajo</u> (Kyoto Univ.)<br>Vikas S. Krishnamurthy<br>(Indian Inst. of Tech. Hyderabad) | Quantized point vortex equilibria with a Liouville-type background vorticity on a curved torus . . . . .     | 15 |

09-01-0031

- 28 Yuuki Shimizu (Univ. of Tokyo) Locality of vortex stretching for the 3D Euler equations ..... 15  
 Tsuyoshi Yoneda (Hitotsubashi Univ.)

09-01-0041

- 29 Makoto Okumura (Hokkaido Univ.) Reproduction of the cylinder structure of hair follicles using a plastic  
 Yasuaki Kobayashi (Hokkaido Univ.) deformable basement membrane model ..... 15  
 Masaharu Nagayama (Hokkaido Univ.)  
 Hironobu Fujiwara (RIKEN)  
 Yasugahira Yusuke (Hokkaido Univ.)  
 Kota Ohno (Chuo Univ.)

**14:15–16:45**

09-01-0027

- 30 Junichi Takahashi (Kochi Univ.) Construction of Rigged Hilbert space for non-Hermitian quantum sys-  
 Shosuke Ohmori (Waseda Univ.) tem with  $\eta$  symmetry ..... 10

09-01-0010

- 31 Hiroataka Kai (Osaka City Univ.) Path-properties of jump-diffusion processes on Riemannian manifolds  
 ..... 15

09-01-0029

- 32 Satoshi Iwakami Study of mathematical techniques for constructing underwater topog-  
 (Earth Rise Company, Inc.) raphy from positioning data and echo sounder data ..... 15  
 Masahiko Tamega  
 (Earth Rise Company, Inc.)  
 Masahide Sanada  
 (Earth Rise Company, Inc.)  
 Michiaki Mohri  
 (Earth Rise Company, Inc.)  
 Yoshitaka Iwakami  
 (Earth Rise Company, Inc.)  
 Naoki Okamoto  
 (Earth Rise Company, Inc.)  
 Eishi Mitsui (Earth Rise Company, Inc.)  
 Hidetaka Chikamori (Okayama Univ.)  
 Shuji Jimbo (Okayama Univ.)  
Masaji Watanabe  
 (Okayama Univ.\* / Okayama Univ.)

09-01-0032

- 33 Enhao Liu (Kyoto Univ.) Curse of dimensionality in persistence diagrams ..... 15  
 Yusuke Imoto (Kyoto Univ.)  
 Yasuaki Hiraoka (Kyoto Univ.)

09-01-0038

- 34 Hiroe Oka (Ryukoku Univ.) Equilibria and their stability in networks with steep sigmoidal nonlin-  
 earities ..... 15

09-01-0008

- 35 Kazuyuki Yagasaki (Kyoto Univ.) Some recent results on nonintegrability of dynamical systems ..... 15

09-01-0007

- 36 Kazuyuki Yagasaki (Kyoto Univ.) Nonintegrability of three- and four-dimensional dynamical systems near  
 degenerate equilibria ..... 15

09-01-0024

- 37 Yuika Kajihara (Kyoto Univ.) Braid types of periodic solutions in the planar  $2n$ -body problem ..... 15  
 Eiko Kin (Osaka Univ.)  
 Mitsuru Shibayama (Kyoto Univ.)

09-01-0028

- 38 Tomoharu Suda (Keio Univ.) Partial maps generated by flows ..... 15

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

09-02-0002

- Junya Nishiguchi (Tohoku Univ.) Infinite-dimensionality and transcendence brought by time-delay

## September 16th (Fri)

**9:30–12:00**

09-01-0045

- 39 Itsuki Watanabe (Waseda Univ.) Application of Markov chain approximation method to nonlinear reaction-diffusion equation ..... 15

09-01-0009

- 40 Yoichi Enatsu (Tokyo Univ. of Sci.) A prey-predator model describing hunting cooperation ..... 15  
 Malay Banerjee  
 (Indian Inst. of Tech. Kanpur)

09-01-0043

- 41 Ayuki Sekisaka (Meiji Univ.) Eigenvalue problem defining the invasive potential of alien species .... 15  
 Toshiyuki Ogawa (Meiji Univ.)

09-01-0047

- 42 Satoru Iwasaki (Osaka Univ.) Parameter dependence of stationary solutions of the Allen–Cahn equations in metric graphs ..... 15  
 Yutaro Yamaguchi (Osaka Univ.)

09-01-0052

- 43 Ayuki Sekisaka (Meiji Univ.) Evans function and spectral problem for a reaction-diffusion equation in a cylindrical domain ..... 15  
 Hiroko Yamamoto (RIKEN)

09-01-0011

- 44 Koichi Anada Upper estimates for blow-up solutions of a quasi-linear parabolic equation in the curve shortening flow ..... 15  
 (Waseda Univ. Senior High School)  
 Tetsuya Ishiwata  
 (Shibaura Inst. of Tech.)  
 Takeo Ushijima (Tokyo Univ. of Sci.)

09-01-0053

- 45 Hirofumi Izuhara (Univ. of Miyazaki) Pattern formation in 2-component reaction-diffusion systems ..... 15  
 Shunsuke Kobayashi (Kyoto Univ.)

09-01-0005

- 46 Masaharu Nagayama (Hokkaido Univ.) Reaction-diffusion model for the self-propelled body ..... 15  
 Harunori Monobe (Osaka Metro. Univ.)  
 Koya Sakakibara  
 (Okayama Univ. of Sci.)  
 Ken-Ici Nakamura (Kanazawa Univ.)  
 Yasuaki Kobayashi (Hokkaido Univ.)  
 Hiroyuki Kitahata (Chiba Univ.)

09-01-0050

- 47 Masataka Kuwamura (Kobe Univ.) Oscillations and wave-pinning in cell polarity formation ..... 15

**14:15–16:10**

09-01-0046

- 48 Tadashi Takahashi (Konan Univ.) Analysis of phenomenon using a learning model ..... 10  
 Tomohiro Washino (Konan Univ.)

09-01-0037

- 49 Yuhan Chen (Kobe Univ.) Compatibility of the neural symplectic forms and the variational principle ..... 15  
 Takashi Matsubara (Osaka Univ.)  
 Takaharu Yaguchi (Kobe Univ.)

09-01-0039

- 50 Baige Xu (Kobe Univ.) GENERIC formulation of generalized dissipative SymODEN ..... 15  
 Yuhan Chen (Kobe Univ.)  
 Takashi Matsubara (Osaka Univ.)  
 Takaharu Yaguchi (Kobe Univ.)

09-01-0044

- 51 Ryoko Yasuda (Kobe Univ.) Learning differential equation models from neural activity images .... 15  
 Takashi Matsubara (Osaka Univ.)  
 Takaharu Yaguchi (Kobe Univ.)

09-01-0023

- 52 Noboru Isobe (Univ. of Tokyo) On a variational formulation of ODE-Net and an existence result .... 15

09-01-0051

- 53 Junpei Nagase (Shibaura Inst. of Tech.)    Equivalence of deep neural network models with continuous piecewise  
Tetsuya Ishiwata    linear functions as activation functions ..... 15  
 (Shibaura Inst. of Tech.)

09-01-0055

- 54 Takuya Jinno (Univ. of Tokyo)    Constructing a data-driven model of intraseasonal weather time-series  
Hiroaki Miura (Univ. of Tokyo)    using machine learning ..... 15  
Kengo Nakai  
 (Tokyo Univ. of Marine Sci. and Tech.)  
Yoshitaka Saiki (Hitotsubashi Univ.)  
Tamaki Suematsu (RIKEN)  
Daisuke Takasuka  
 (Japan Agency for Marine-Earth Sci. and Tech.)  
Tsuyoshi Yoneda (Hitotsubashi Univ.)

### 16:25–17:25 Talk Invited by Applied Mathematics Section

09-02-0001

- Akane Kawaharada    Characterization of fractals generated by cellular automata  
 (Kyoto Univ. of Edu.)

# Topology

September 13th (Tue)

## 9:30–12:00

10-01-0007

- 1 Yuji Akaike (Kure Nat. Coll. of Tech.) Perfectness of Higson type compactifications and connectedness of remainders ..... 10  
Kazuo Tomoyasu  
(Miyakonojo Nat. Coll. of Tech.)

10-01-0013

- 2 Katsuhisa Koshino (Kanagawa Univ.) Recognizing the topologies on spaces of metrics ..... 15

10-01-0035

- 3 Masateru Inoue (Okayama Univ. of Sci.) The stable cooperations of Morava K-Theory and the fiber product of automorphism groups of formal group laws ..... 10

10-01-0036

- 4 Eiichi Matsubishi (Shimane Univ.) Some decomposable continua and their hyperspaces ..... 15  
Yoshiyuki Oshima (Shimane Univ.)

10-01-0048

- 5 Katsuhiko Kuribayashi (Shinshu Univ.) Cartan calculi on the free loop spaces ..... 15  
Takahito Naito (Nippon Inst. of Tech.)  
Shun Wakatsuki (Shinshu Univ.)  
Toshihiro Yamaguchi (Kochi Univ.)

10-01-0049

- 6 Katsuhiko Kuribayashi (Shinshu Univ.) BV exactness and string brackets ..... 15  
Takahito Naito (Nippon Inst. of Tech.)  
Shun Wakatsuki (Shinshu Univ.)  
Toshihiro Yamaguchi (Kochi Univ.)

10-01-0019

- 7 Yasuhiko Asao (Fukuoka Univ.) Admissible maps and the cohomology of classifying spaces ..... 10  
Kenshi Ishiguro (Fukuoka Univ.)  
Makoto Yamagata (Fukuoka Univ.)

10-01-0044

- 8 Masato Tanabe (Hokkaido Univ.) Canonical stratification of definable groupoids ..... 10

10-01-0021

- 9 Takahiro Yamamoto Topology of stable maps of surfaces with boundary into the plane .... 15  
(Tokyo Gakugei Univ.)

## 14:20–18:00

10-01-0008

- 10 Chihaya Jibiki (Tokyo Tech) Constructions of left-orderings and investigating their properties ..... 15

10-01-0010

- 11 Takamichi Sato (Waseda Univ.) On subgroups of Richard Thompson's group  $F$  ..... 15

10-01-0022

- 12 Yu Tajima (Hokkaido Univ.) Magnitude homology of cycle graphs and the homotopy type of the Asao–Izumihara complexes ..... 15

10-01-0039

- 13 Yuuki Tadokoro Minimal generating sets of groups of Kim–Manturov ..... 10  
(Kisarazu Nat. Coll. of Tech.)  
Takuya Sakasai (Univ. of Tokyo)  
Kokoro Tanaka (Tokyo Gakugei Univ.)

10-01-0016

- 14 Sakumi Sugawara (Hokkaido Univ.)  $\mathbb{Z}$ -local system cohomology of hyperplane arrangements and a CDO-type theorem ..... 15

10-01-0024

- 15 Masahiko Yoshinaga (Osaka Univ.) The icosidodecahedral arrangement and related double coverings ..... 15  
Suguru Ishibashi (ARISE analytics)  
Sakumi Sugawara (Hokkaido Univ.)

10-01-0017

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

|                            |    |                                                                                                                          |                                                                                           |    |
|----------------------------|----|--------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|----|
| <a href="#">10-01-0053</a> | 17 | Yakov Eliashberg (Stanford Univ.)<br>Noboru Ogawa (Tokai Univ.)<br>Toru Yoshiyasu (Kyoto Univ. of Edu.)                  | Stabilized convex symplectic manifolds are Weinstein . . . . .                            | 15 |
| <a href="#">10-01-0040</a> | 18 | Shin Hayashi<br>(JST PRESTO/Tohoku Univ.)                                                                                | An index theorem for quarter-plane Toeplitz operators via extended symbols . . . . .      | 15 |
| <a href="#">10-01-0002</a> | 19 | Alastair Darby<br>(Xi'an Jiaotong-Liverpool Univ.)<br>Shintaro Kuroki<br>(Okayama Univ. of Sci.)<br>Jongbaek Song (KIAS) | Equivariant cohomology of torus orbifolds . . . . .                                       | 15 |
| <a href="#">10-01-0025</a> | 20 | Shunsuke Tamura<br>(Tsuyama Nat. Coll. of Tech.)                                                                         | On odd-Euler-characteristic actions of finite groups on low-dimensional spheres . . . . . | 15 |

September 14th (Wed)

**10:10–10:25 Presentation Ceremony for the 2022 MSJ Geometry Prize**

**10:30–11:30 Award Lecture for the 2022 MSJ Geometry Prize**

|                            |  |                                                                  |                                                                                |
|----------------------------|--|------------------------------------------------------------------|--------------------------------------------------------------------------------|
| <a href="#">03-02-0002</a> |  | Hiroshi Iriyeh (Ibaraki Univ.)<br>Masataka Shibata (Meijo Univ.) | A solution of Mahler's conjecture of three dimensional symmetric convex bodies |
|----------------------------|--|------------------------------------------------------------------|--------------------------------------------------------------------------------|

**13:15–14:15 Award Lecture for the 2022 MSJ Geometry Prize**

|                            |  |                                |                                                       |
|----------------------------|--|--------------------------------|-------------------------------------------------------|
| <a href="#">03-02-0003</a> |  | Tatsuki Kuwagaki (Kyoto Univ.) | Geometry and algebraic analysis of sheaf quantization |
|----------------------------|--|--------------------------------|-------------------------------------------------------|

September 15th (Thu)

**9:30–12:00**

|                            |    |                                                                                                     |                                                                                                |    |
|----------------------------|----|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|----|
| <a href="#">10-01-0004</a> | 21 | Genki Omori (Tokyo Univ. of Sci.)<br>Susumu Hirose (Tokyo Univ. of Sci.)                            | Finite presentations for the balanced superelliptic mapping class groups . . . . .             | 15 |
| <a href="#">10-01-0005</a> | 22 | Genki Omori (Tokyo Univ. of Sci.)                                                                   | The balanced superelliptic mapping class groups is generated by three elements . . . . .       | 10 |
| <a href="#">10-01-0011</a> | 23 | Ryoma Kobayashi<br>(Ishikawa Nat. Coll. of Tech.)                                                   | Four infinite presentations for the mapping class group of a non-orientable surface . . . . .  | 15 |
| <a href="#">10-01-0012</a> | 24 | Ryoma Kobayashi<br>(Ishikawa Nat. Coll. of Tech.)                                                   | Infinite presentations for fundamental groups of surfaces . . . . .                            | 10 |
| <a href="#">10-01-0050</a> | 25 | Takuya Katayama (Gakushuin Univ.)<br>Erika Kuno (Osaka Univ.)                                       | On virtual embeddings of braid groups into mapping class groups of surfaces . . . . .          | 15 |
| <a href="#">10-01-0003</a> | 26 | Yusuke Kuno (Tsuda Coll.)<br>Kae Takezawa (Tsuda Coll.)                                             | On Penner's cocycle on the fatgraph complex . . . . .                                          | 10 |
| <a href="#">10-01-0006</a> | 27 | Yuta Nozaki (Hiroshima Univ.)<br>Masatoshi Sato (Tokyo Denki Univ.)<br>Masaaki Suzuki (Meiji Univ.) | A non-commutative Reidemeister–Turaev torsion of homology cylinders . . . . .                  | 15 |
| <a href="#">10-01-0014</a> | 28 | Shunsuke Tsuji (Meiji Univ.)                                                                        | Formulas for the actions of Dehn twists in some skein modules and their applications . . . . . | 15 |

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

10-02-0002

- Christine Vespa Eilenberg Mac Lane polynomial functors and their applications  
(Univ. of Strasbourg/JSPS)

**15:40–18:00**

10-01-0015

- 29 Jun Murakami (Waseda Univ.) On quantization of knot groups ..... 10

10-01-0018

- 30 Yasutaka Nakanishi (Kobe Univ.) Differences of Conway polynomials for knots caused by a single pass  
Shunki Takagi move ..... 15

10-01-0023

- 31 Toshiyuki Akita (Hokkaido Univ.) On the associated group of a quandle ..... 10  
Aoi Hasegawa (Hokkaido Univ.)

10-01-0027

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

10-01-0028

- 33 Shun Sawabe (Waseda Univ.) On the potential function of the colored Jones polynomial with arbitrary  
colors ..... 10

10-01-0031

- 34 Masaaki Suzuki (Meiji Univ.) Genera and crossing numbers of 2-bridge knots ..... 10  
Anh T. Tran (Univ. of Texas at Dallas)

10-01-0033

- 35 Teruaki Kitano (Soka Univ.) Algebraic integrality of Reidemeister torsion ..... 10  
Yuta Nozaki (Hiroshima Univ.)

10-01-0034

- 36 Teruaki Kitano (Soka Univ.) Epimorphisms between knot groups and the  $SL(2; \mathbb{C})$ -character variety  
..... 10

10-01-0041

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

## September 16th (Fri)

**9:30–12:00**

10-01-0042

- 38 Seiichi Kamada (Osaka Univ.) Twisted intersection colorings and invariants of twisted links ..... 10  
Hiroki Ito (KISTEM)

10-01-0043

- 39 Naoko Kamada (Nagoya City Univ.) Virtual link diagrams and their sublink diagrams ..... 10

10-01-0047

- 40 Kodai Wada (Kobe Univ.) Writhe and  $2k$ -moves for virtual knots ..... 10

10-01-0045

- 41 Keiichi Sakai (Shinshu Univ.) The Fox–Hatcher cycle and the Vassiliev invariants ..... 15  
Saki Kanou

10-01-0052

- 42 Tetsuya Abe (Ritsumeikan Univ.) Ribbon concordance and the minimality of torus knots ..... 15  
Keiji Tagami (Hiroshima Shudo Univ.)

10-01-0037

- 43 Yuta Taniguchi (Osaka Univ.) A relation between surface knot invariants obtained from a quandle  
2-cocycle ..... 15

10-01-0038

- 44 Jumpei Yasuda (Osaka Univ.) Computation of the plat index for surface-links ..... 15

10-01-0029

- 45 Tsukasa Isoshima (Tokyo Tech) Trisections obtained by trivially regluing surface-knots ..... 15

10-01-0030

- 46 Natsuya Takahashi (Osaka Univ.) Minimal genus relative trisections of corks ..... 15

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

10-02-0001

- Shin Satoh (Kobe Univ.) Toward tabulation of 2-knots

**15:40–17:00**

10-01-0051

- 47 Motoo Tange (Univ. of Tsukuba) Pochette surgery of  $S^4$  ..... 15  
Tatsumasa Suzuki (Tokyo Tech)

10-01-0009

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

10-01-0001

- 49 Yoshihiko Mitsumatsu (Chuo Univ.) Lefschetz fibration of Milnor fibers of cusp singularities and topological  
Naohiko Kasuya (Hokkaido Univ.) decompositions of the K3 surface ..... 15  
Hiroki Kodama  
 (Tohoku Univ./RIKEN)  
Atsuhide Mori (Osaka Dent. Univ.)

10-01-0026

- 50 Yoshihiko Mitsumatsu (Chuo Univ.) Lefschetz-like critical points ..... 15  
Naohiko Kasuya (Hokkaido Univ.)  
Atsuhide Mori (Osaka Dent. Univ.)

# Infinite Analysis

September 13th (Tue)

## 9:30–12:00

11-01-0013

- 1 Yohei Tutiya (Kanagawa Inst. of Tech.) Theta function solutions for periodic ILW equation with discrete Laplacian ..... 10
- 11-01-0006  
2 Hidehito Nagao (Akashi Coll. of Tech.) A certain factorized matrix Lax form ..... 15
- 11-01-0002  
3 Kazuyuki Yagasaki (Kyoto Univ.) Integrability of the two-dimensional Zakharov–Shabat systems by quadrature ..... 15
- 11-01-0003  
4 Genki Shibukawa (Kobe Univ.) A generalization of Zwegers’  $\mu$ -function according to the  $q$ -Hermite–Tsuchimi Satoshi (Kobe Univ.) Weber difference equation ..... 15
- 11-01-0005  
5 Tetsu Masuda (Aoyama Gakuin Univ.) Additional symmetry of Kajiwara–Noumi–Yamada systems ..... 15
- 11-01-0008  
6 Yumi Arai (Ochanomizu Univ.) On  $q$ -middle convolution and  $q$ -hypergeometric equations ..... 15  
Kouichi Takemura (Ochanomizu Univ.)
- 11-01-0014  
7 Shota Shigetomi (Kyushu Univ.) An explicit formula of Kaleidocycle ..... 15  
Kenji Kajiwara (Kyushu Univ.)
- 11-01-0010  
8 Yuta Nishiyama (Kumamoto Univ.) On a conjecture on 2-reduced Schur functions and Schur’s  $Q$ -functions ..... 15
- 11-01-0012  
9 Yousuke Ohyama (Tokushima Univ.) A  $q$ -analogue of the Euler–Poisson–Darboux equation ..... 15

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

11-02-0002

- Ayumu Hoshino  
(Hiroshima Inst. of Tech.) Macdonald polynomials of type  $C$  with hook-shape diagrams and Pieri type formula

September 14th (Wed)

## 9:30–10:50

11-01-0001

- 10 Ryo Takenaka (Osaka Metro. Univ.) Affine Lie algebras of type  $A_{2l}^{(2)}$  and fermionic formulas ..... 15
- 11-01-0011  
11 Hideya Watanabe (Osaka Metro. Univ.) On  $\imath$ canonical bases of finite type of real rank one ..... 15
- 11-01-0007  
12 Yuma Mizuno (Chiba Univ.) Mutations of blowups of toric surfaces and  $q$ -Painlevé systems ..... 15
- 11-01-0009  
13 Yuuki Shiraishi (Osaka Univ.) A Frobenius manifold for  $\ell$ -Kronecker quiver ..... 15  
Atsushi Takahashi (Osaka Univ.)  
Akishi Ikeda (Josai Univ.)  
Takumi Otani (Osaka Univ.)
- 11-01-0004  
14 Wataru Takeda (Tokyo Univ. of Sci.) Pfaffian expression of the Schur  $Q$  type multiple zeta functions ..... 15  
Maki Nakasuji (Sophia Univ.)

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

11-02-0001

- Taichiro Takagi      b A geometric lifting of integrable cellular automata and its continuum  
(Nat. Defense Acad. of Japan) limits