

## 2013 Mathematical Society of Japan

**ANNUAL MEETING**

Dates: March 20th–23rd, 2013

Venue: Kyoto University, Yoshida-South Campus

Contact to: Department of Mathematics and RIMS,

Kyoto University

Yoshida Nihonmatsu-cho, Sakyo-ku, Kyoto

E-mail [kyoto13mar@mathsoc.jp](mailto:kyoto13mar@mathsoc.jp)

During session: Phone +81 (0) 75 753 2935

Fax +81 (0) 75 753 2935

Mathematical Society of Japan

Phone +81 (0) 3 3835 3483

	I Yoshida-S 4 4C30	II Yoshida-S 4 4C31	III Yoshida-S 4 4C21	IV Yoshida-S 4 4C11	V Media Cntr S B1	VI Yoshida-S Cntr CW41	VII Yoshida-S Cntr CW31	VIII Yoshida-S Cntr CS11	IX Yoshida-S Cntr CS01
20th (Wed)	Algebra 9:00–12:00 14:15–16:45	Topology 9:30–12:00	Geometry 9:20–12:00 14:20–15:20	Functional Equations 9:30–12:00 14:15–16:30		Applied Mathematics 9:30–11:35 14:15–16:25	Found. of Math. and History of Math. 9:30–11:30 14:15–16:30	Real Analysis 9:00–12:10 14:15–16:30	Statistics and Probability 9:30–12:00
	Featured Invited Talks					13:00–14:00			
	Invited Talk 16:45–17:45	Invited Talks 14:30–15:30 15:45–16:45	Invited Talk 15:45–16:45	Invited Talk 16:45–17:45		Invited Talk 16:40–17:40		Invited Talk 16:45–17:45	Invited Talks 14:30–15:30 15:45–16:45
21st (Thu)	Algebra 9:00–12:00	Topology 9:30–12:00	Geometry 9:20–11:50	Functional Equations 9:30–12:00	Functional Analysis 9:30–12:15	Applied Mathematics 9:30–11:35	Found. of Math. and History of Math. 9:30–11:40	Real Analysis 9:00–11:55 12:55–13:25	Statistics and Probability 9:00–11:50 13:20–14:30
	Invited Talk 13:15–14:15	Invited Talk 13:30–14:30	Invited Talk 13:00–14:00	Invited Talk 13:30–14:30	Invited Talk 13:30–14:30	Invited Talk 13:15–14:15	Invited Talk 13:10–14:10	Invited Talk 13:40–14:40	
	MSJ Prizes Presentation (Clock Tower 1F) ..... (14:50–15:20)								
	Plenary Talks (Clock Tower 1F) MSJ Spring Prize Winner ..... (15:30–16:30) Yoshihiro Tonegawa (Hokkaido Univ.) ..... (16:45–17:45) Official Party (Clock Tower 2F) ..... (18:00–20:00)								
22nd (Fri)	Algebra 9:00–12:00 14:15–15:00	Topology 10:15–11:50 15:00–16:35	Geometry 9:30–11:30	Functional Equations 9:30–12:00 14:15–16:15	Functional Analysis 10:00–12:00 14:30–15:20	Applied Mathematics 9:00–11:45 14:15–16:30	Infinite Analysis 9:30–11:45 14:15–15:35	Complex Analysis 9:30–12:00 14:20–15:40	Statistics and Probability 9:30–12:00
	Featured Invited Talks					13:00–14:00			
	Invited Talks 15:30–16:30 16:45–17:45		Invited Talks 14:20–15:20 15:40–16:40	Invited Talk 16:30–17:30	Invited Talk 15:40–16:40	Invited Talk 16:45–17:45	Invited Talk 15:45–16:45	Invited Talk 16:00–17:00	Invited Talks 14:30–15:30 15:45–16:45
23rd (Sat)	Algebra 9:00–12:00 14:15–16:45			Functional Equations 9:30–11:45	Functional Analysis 10:30–12:00		Infinite Analysis 9:45–11:40	Complex Analysis 10:00–12:00	
	Featured Invited Talks					13:00–14:00			
				Invited Talk 14:15–15:15	Invited Talk 14:30–15:30		Invited Talk 14:30–15:30	Invited Talk 14:20–15:20	

Refer to page 34 for the abbreviation rule for conference rooms.

## Plenary Talks

March 21st (Thu) Clock Tower Centennial Hall, Centennial Hall (1F)

- MSJ Autumn Prize Winner ..... (15:30~16:30)
- Yoshihiro Tonegawa (Hokkaido Univ.)<sup>#</sup> Regularity theories on generalized minimal surfaces and mean curvature flows ..... (16:45~17:45)
- 

## Featured Invited Talks

March 20th (Wed)

### Conference Room I

- Yuzuru Inahama (Nagoya Univ.) Rough path theory —(stochastic) analysis of iterated integrals—  
..... (13:00~14:00)

### Conference Room III

- Toshiki Mabuchi (Osaka Univ.)<sup>#</sup> New developments in the Kobayashi–Hitchin correspondence for manifolds ..... (13:00~14:00)

March 22nd (Fri)

### Conference Room I

- Guest Talk from the Japan Society for Industrial and Applied Mathematics  
Shinichiro Nakamura (RIKEN)<sup>#</sup> In search for hidden mathematics in industrial basic problems ..... (13:00~14:00)

### Conference Room III

- Hiroyuki Ochiai \* A survey on a classification of unitary representations .... (13:00~14:00)  
(Kyushu Univ./JST CREST)

March 23rd (Sat)

### Conference Room I

- Satoshi Yoshiara<sup>#</sup> Around nonlinear functions ..... (13:00~14:00)  
(Tokyo Woman's Christian Univ.)

### Conference Room III

- Junjiro Noguchi (Univ. of Tokyo) Value distribution and distribution of rational points II ... (13:00~14:00)

### Conference Room IV

- Tatsuo Nishitani (Osaka Univ.)<sup>#</sup> The Cauchy problem for partial differential equations with double characteristics ..... (13:00~14:00)
-

## Talks invited by Research Sections and Special Session

March 20th (Wed)

### Algebra (Conference Room I)

Takayuki Hayakawa (Kanazawa Univ.)<sup>#</sup> Birational morphisms of 3-dimensional algebraic varieties · (16:45~17:45)

### Geometry (Conference Room III)

Wayne Rossman (Kobe Univ.)<sup>#</sup> Construction of discrete surfaces in terms of discrete flat connections ··········· (15:45~16:45)

### Functional Equations (Conference Room IV)

Naoto Yamaoka (Osaka Pref. Univ.)<sup>#</sup> An oscillation constant for half-linear differential equations and its application ········· (16:45~17:45)

### Real Analysis (Conference Room VIII)

Giorgio Metafune (Salento Univ.)<sup>#</sup> Spectral properties of second order operators with unbounded coefficients in  $\mathbb{R}^d$  ········· (16:45~17:45)

### Statistics and Probability (Conference Room IX)

Daisuke Shiraishi (Kyoto Univ.)<sup>#</sup> Non-intersecting two-sided random walks ········· (14:30~15:30)

Naoyuki Ichihara (Hiroshima Univ.)<sup>#</sup> Asymptotic problems for viscous Hamilton–Jacobi equations and stochastic control ········· (15:45~16:45)

### Applied Mathematics (Conference Room VI)

Jun Fujisawa (Keio Univ.)<sup>#</sup> On the existence of good structures in graphs ········· (16:40~17:40)

### Topology (Conference Room II)

Takahiro Kitayama (Univ. of Tokyo)<sup>#</sup> Torsion functions on character varieties and an extension of Culler–Shalen theory ········· (14:30~15:30)

Makoto Sakuma (Hiroshima Univ.)<sup>#</sup> Simple loops on bridge spheres and Heegaard surfaces ····· (15:45~16:45)

March 21st (Thu)

### Foundation of Mathematics and History of Mathematics (Conference Room VII)

Hiroshi Sakai (Kobe Univ.)<sup>#</sup> stationary and semi-stationary reflection principles ······· (13:10~14:10)

### Algebra (Conference Room I)

Naoki Terai (Saga Univ.) Classification of licci edge ideals ········· (13:15~14:15)

### Geometry (Conference Room III)

Makiko Tanaka (Tokyo Univ. of Sci.)<sup>#</sup> Antipodal sets of compact symmetric spaces and the intersection of totally geodesic submanifolds ········· (13:00~14:00)

### Functional Equations (Conference Room IV)

Award Lecture for 2012 Analysis Prize

Shigeru Sakaguchi (Tohoku Univ.)<sup>#</sup> Stationary isothermic surfaces and geometry of domain ··· (13:30~14:30)

**Real Analysis** (Conference Room VIII)

Tsuyoshi Yoneda (Hokkaido Univ.)<sup>#</sup> Fourier analysis and rotating Navier–Stokes equations . . . . (13:40~14:40)

**Functional Analysis** (Conference Room V)

Hisayosi Matumoto (Univ. of Tokyo)<sup>#</sup> On the homomorphisms between scalar generalized Verma modules . . . . . (13:30~14:30)

**Applied Mathematics** (Conference Room VI)

Hayato Chiba (Kyushu Univ.)<sup>#</sup> A spectral theory of linear operators on a Gelfand triplet and its application to the dynamics of coupled oscillators . . . . (13:15~14:15)

**Topology** (Conference Room II)

Kouichi Yasui (Hiroshima Univ.)<sup>#</sup> Corks and exotic 4-manifolds . . . . . (13:30~14:30)

## March 22nd (Fri)

**Algebra** (Conference Room I)

Award Lecture for 2012 Algebra Prize

Tomoyuki Arakawa (Kyoto Univ.)<sup>#</sup> Representation theory of W-algebras . . . . . (15:30~16:30)

Award Lecture for 2012 Algebra Prize

Atsushi Ichino (Kyoto Univ.)<sup>#</sup> Automorphic representations and periods . . . . . (16:45~17:45)

**Geometry** (Conference Room III)

Jeff Viaclovsky<sup>#</sup> Critical metrics on connected sums of Einstein four-manifolds  
(Univ. of Wisconsin, Madison) . . . . . (14:20~15:20)

Hiroshi Matsuzoe<sup>#</sup> Statistical manifolds and geometry of estimating functions  
(Nagoya Inst. of Tech.) . . . . . (15:40~16:40)

**Complex Analysis** (Conference Room VIII)

Tomoki Kawahira (Nagoya Univ.)<sup>#</sup> Zalcman’s lemma and complex dynamics . . . . . (16:00~17:00)

**Functional Equations** (Conference Room IV)

Award Lecture for 2012 Analysis Prize

Yoshiyuki Kagei (Kyushu Univ.)<sup>#</sup> Asymptotic behavior of solutions of the compressible Navier-Stokes equation around a parallel flow . . . . . (16:30~17:30)

**Functional Analysis** (Conference Room V)

Reiji Tomatsu (Hokkaido Univ.)<sup>#</sup> Classification problem of group or quantum group actions on von Neumann algebras . . . . . (15:40~16:40)

**Statistics and Probability** (Conference Room IX)

Masanori Sawa (Nagoya Univ.)<sup>#</sup> The theory of cubature formulae and designs in numerical analysis, algebraic combinatorics and mathematical statistics . . . . . (14:30~15:30)

Award Lecture for 2012 Analysis Prize

Masanobu Taniguchi (Waseda Univ.)<sup>#</sup> Non-standard analysis for time series . . . . . (15:45~16:45)

**Applied Mathematics** (Conference Room VI)

Takeshi Ohtsuka (Gunma Univ.)<sup>#</sup> A level set formulation for evolving spirals and their behavior in spiral crystal growth . . . . . (16:45~17:45)

**Infinite Analysis** (Conference Room VII)

Zengo Tsuboi # Baxter Q-operators and tau-function for quantum integrable  
(Humboldt-Univ. zu Berlin) systems ..... (15:45~16:45)

March 23rd (Sat)

**Complex Analysis** (Conference Room VIII)

Hidetaka Hamada # Loewner chains on complete hyperbolic complex manifolds  
(Kyushu Sangyo Univ.) ..... (14:20~15:20)

**Functional Equations** (Conference Room IV)

Hiroyuki Takamura # General theory of initial value problems for nonlinear wave  
(Future Univ.-Hakodate) equations and its optimality. .... (14:15~15:15)

**Functional Analysis** (Conference Room V)

Akzunori Ando (Univ. of Tsukuba) # Inverse scattering problem for discrete Schrödinger operators  
on the hexagonal lattice ..... (14:30~15:30)

**Infinite Analysis** (Conference Room VII)

Kentaro Nagao (Nagoya Univ.) Quivers with potential, 3d Calabi–Yau categories and the  
cohomological Hall algebras ..... (14:30~15:30)

## Open Lectures for Citizens

Sponsored by: Mathematical Society of Japan

Co-sponsored by: Department of Mathematics and RIMS, Kyoto University

Date: March 24th (Sun) 14:00–16:30

Venue: Kyoto University, Yoshida-South Campus Bldg No. 4, Rm 4C11

Program: Opening Speech:

Yoichi Miyaoka (Univ. of Tokyo) ..... (14:00–14:10)

Lecture 1:

Hisashi Okamoto (Kyoto Univ.)

Fluid mechanics and mathematics ..... (14:15–15:15)

Lecture 2:

Hiroshi Sugita (Osaka Univ.)

Probability and random number ..... (15:30–16:30)

Web Page: <http://mathsoc.jp/en/meeting/kyoto13mar/>

## Presentation by Prof. Gert-Martin Greuel

Sponsored by: Mathematical Society of Japan

Date: March 20th (Wed) 16:30–17:00

Venue: Yoshida-South Campus Academic Center Bldg, Rm CN28

Presenter: Prof. Gert-Martin Greuel

(Director of Mathematisches Forschungsinstitut Oberwolfach (MFO) /

Editor-in-Chief of Zentralblatt MATH)

Title: The Reviewing Service Zentralblatt MATH: Challenges and Opportunities

Web Page: <http://mathsoc.jp/en/meeting/kyoto13mar/>

## Foundation of Mathematics and History of Mathematics

March 20th (Wed)      Conference Room VII

### 9:30–11:30

- |   |                                     |  |    |
|---|-------------------------------------|--|----|
| 1 | Teruaki Asai (Nara Univ. of Edu.) * | On the table of Plimpton 322 . . . . .   | 15 |
| 2 | Ken Saito (Osaka Pref. Univ.) #     | Diagrams in Euclid's <i>Elements</i> —Books 7–13 . . . . .   | 20 |
| 3 | Shigeru Masuda (Kyoto Univ.) #      | The Fourier's motivations of works in the span of life . . . . .   | 20 |
| 4 | Shigeru Masuda (Kyoto Univ.) #      | The definite integral by Euler and Laplace from the viewpoint of Poisson<br>. . . . .  | 20 |
| 5 | Kenshi Miyabe (Kyoto Univ.) #       | The other history of probability theory . . . . .  | 15 |
| 6 | Setsuo Takato (Toho Univ.) #        | Consideration of an interpretation of the Fangcheng procedure of <i>the<br/>Nine Chapters on the Mathematical Arts</i> . . . . . | 15 |

### 14:15–16:30

- |    |  |  |    |
|----|--|--|----|
| 7  | Hideyuki Majima (Ochanomizu Univ.) #             | Some remarks on the calculation of pi by Takebe Katahiro . . . . .   | 20 |
| 8  | Hikosaburo Komatsu (Univ. of Tokyo*) *           | On Mikami Yoshio's study on the theory of determinants in Japan in<br>the 17th century. Which are justified and which are not? . . . . . | 30 |
| 9  | Shotaro Tanaka                                   | Representation of fractional function in power series —Expansion by<br>Komatsu and by theorem by Wada, summary— . . . . .                | 20 |
| 10 | Takahiro Seki (Niigata Univ.) #                  | A Gentzen-style formulation for non-associative substructural logics I<br>. . . . .  | 15 |
| 11 | Keishi Okamoto #<br>(Sendai Nat. Coll. of Tech.) | On expressiveness of first-order temporal logics . . . . .   | 15 |
| 12 | Ryota Matsuo (Nagoya Univ.) #                    | Logics for strategies . . . . .  | 15 |

March 21st (Thu)      Conference Room VII

### 9:30–11:40

- |    |   |  |    |
|----|---|--|----|
| 13 | Kohtaro Tadaki (Chuo Univ.) #   | The generic group model and algorithmic randomness . . . . .   | 20 |
| 14 | Kenshi Miyabe (Kyoto Univ.) #   | Van Lambalgen's Theorem for uniform Kurtz randomness . . . . .   | 15 |
| 15 | Akitoshi Kawamura (Univ. of Tokyo) #<br>Norbert Müller (Univ. Trier)<br>Carsten Rösnick (TU Darmstadt)<br>Martin Ziegler (TU Darmstadt) | On representations of analytic functions and polynomial-time com-<br>putability of operators . . . . .           | 15 |
| 16 | Takayuki Kihara (JAIST) #   | An application of Kumabe–Slaman forcing to the $\omega$ -decomposability<br>problem on Borel functions . . . . . | 20 |
| 17 | Tatsuya Miyazaki (Nagoya Univ.) #   | On rigid Souslin trees and their preservation . . . . .  | 15 |
| 18 | Teruyuki Yorioka (Shizuoka Univ.) #   | Some statements which can be forced with a coherent Suslin tree . . . . .  | 15 |
| 19 | Toshimichi Usuba (Nagoya Univ.) #   | Large cardinals and indestructibly countably tight spaces . . . . .  | 15 |

**13:10–14:10 Talk invited by Section on Foundation and History of Mathematics**Hiroshi Sakai (Kobe Univ.)<sup>#</sup> stationary and semi-stationary reflection principles

---

**Algebra**

March 20th (Wed) Conference Room I

**9:00–12:00**

- 1 Tomohiro Iwami \* On certain criterion (weak form) for semistability of 3-fold log flips  
(Kyushu Sangyo Univ.) ..... 10
- 2 Ryo Akiyama (Shizuoka Univ.)<sup>#</sup> Classification of quantum affine planes ..... 10
- 3 Yoshifumi Tsuchimoto (Kochi Univ.)<sup>#</sup> Auslander regularity of non commutative projective space ..... 15
- 4 Shinya Kitagawa \* On certain pencils of plane curves of degree thirteen with a quintuple  
(Gifu Nat. Coll. of Tech.) point and nine quadruple points ..... 15
- 5 Sachiko Saito (Hokkaido Univ. of Edu.)<sup>#</sup> Real 2-elementary K3 surfaces of type (3,1,1) and degenerations ..... 10
- 6 Takeshi Usa (Univ. of Hyogo) Homological shells of a canonical curve  $g = 5, 6$  ..... 15
- 7 Shigeru Iitaka (Gakushuin Univ.)<sup>#</sup> Hartshorne identities and their application ..... 15
- 8 Yoshiaki Fukuma (Kochi Univ.)<sup>#</sup> Effective non-vanishing of global sections of multiple adjoint bundles  
for quasi-polarized  $n$ -folds ..... 15
- 9 Ryo Okawa (Kyoto Univ.)<sup>#</sup> Frobenius morphisms and derived categories on two dimensional toric  
Hokuto Uehara (Tokyo Metro. Univ.) Deligne–Mumford stacks ..... 15
- 10 Kotaro Kawatani<sup>#</sup> FM groupoid on K3 surfaces and Atkin–Lehner involutions ..... 15  
(Nagoya Univ./Osaka Univ.)
- 11 Kotaro Kawatani<sup>#</sup> Stability conditions on K3 surfaces and hyperbolic plane ..... 15  
(Nagoya Univ./Osaka Univ.)

**14:15–16:45**

- 12 Kazunori Yasutake (Kyushu Univ.) \* On Fano fourfolds with nef vector bundle  $\Lambda^2 T_X$  ..... 10
- 13 Kiwamu Watanabe (Saitama Univ.) \* Fano 5-folds with nef tangent bundles ..... 15
- 14 Ken-ichi Yoshida (Nihon Univ.)<sup>#</sup> Ulrich ideals and modules on 2-dimensional rational singularities ..... 15  
Shiro Goto (Meiji Univ.)  
Kazuho Ozeki (Yamaguchi Univ.)  
Ryo Takahashi (Nagoya Univ.)  
Kei-ichi Watanabe (Nihon Univ.)
- 15 Takayuki Hibi<sup>#</sup> Normality of dilated polytopes ..... 15  
(Osaka Univ./JST CREST)  
Akihiro Higashitani (Osaka Univ.)
- 16 Akihiro Higashitani (Osaka Univ.)<sup>#</sup> Non-normal very ample toric rings ..... 15



17	Kazunori Matsuda (Nagoya Univ.) <sup>*</sup> Satoshi Murai (Yamaguchi Univ.)	Regularity bounds for binomial edge ideals . . . . .	10
18	Hidefumi Osugi <sup>#</sup> (Rikkyo Univ./JST CREST) Takayuki Hibi (Osaka Univ./JST CREST)	Toric ideals and their circuits . . . . .	15
19	Akiyoshi Sannai (Nagoya Univ.) <sup>#</sup>	Numerical characterizations of $F$ -singularities . . . . .	10
20	Yusuke Nakajima (Nagoya Univ.) <sup>#</sup> Mitsuyasu Hashimoto (Nagoya Univ.)	Generalized $F$ -signature of invariant subrings . . . . .	15

**16:45–17:45 Talk invited by Algebra Section**

	Takayuki Hayakawa (Kanazawa Univ.) <sup>#</sup>	Birational morphisms of 3-dimensional algebraic varieties	
--	---	---	--

## March 21st (Thu) Conference Room I

**9:00–12:00**

21	Noriko Zaitso (Eigakuin)	The field higher dimension over $\mathbb{R}$ than the sedenions does not exist . . . . .	10
22	Shinichi Tajima (Univ. of Tsukuba) <sup>#</sup> Katsuyoshi Ohara (Kanazawa Univ.) Akira Terui (Univ. of Tsukuba)	Efficient symbolic computation of matrix polynomials with an extended Horner's rule . . . . .	10
23	Shinichi Tajima (Univ. of Tsukuba) <sup>#</sup> Katsuyoshi Ohara (Kanazawa Univ.)	On structure of invariant subspaces for square matrix . . . . .	10
24	Katsuyoshi Ohara (Kanazawa Univ.) <sup>#</sup> Shinichi Tajima (Univ. of Tsukuba)	A randomized algorithm for computing minimal annihilating polynomials of square matrix . . . . .	10
25	Shuzo Izumi (Kinki Univ.) <sup>#</sup>	A family of Artinian rings associated to a finite-dimensional vector space of holomorphic functions . . . . .	10
26	Shuzo Izumi (Kinki Univ.) <sup>#</sup>	Taylor expansion and transcendency on an analytic manifold embedded in an affine space . . . . .	15
27	Kazuma Shimomoto (Meiji Univ.) <sup>*</sup> Jun Horiuchi (Nippon Inst. of Tech.) Lance Edward Miller (Univ. of Utah)	$F$ -injective and $F$ -split rings and deformation problems . . . . .	10
28	Takahiko Furuya (Tokyo Univ. of Sci.) <sup>#</sup>	Hochschild cohomology for a class of some self-injective special biserial algebras of rank four . . . . .	10
29	Hiroaki Komatsu <sup>*</sup> (Okayama Pref. Univ.)	Adjoint pair associated to generalized derivations of bimodules . . . . .	10
30	Yasuhiko Takehana <sup>#</sup> (Hakodate Nat. Coll. of Tech.)	A generalization of costable torsion theory . . . . .	10
31	Takuma Aihara (Bielefeld Univ.) Tokuji Araya (Tokuyama Coll. of Tech.) Osamu Iyama (Nagoya Univ.) Ryo Takahashi (Nagoya Univ.) Michio Yoshiwaki (Osaka City Univ.)	Dimensions of triangulated categories with respect to subcategories 2 . . . . .	15
32	Ryo Kanda (Nagoya Univ.)	Classifying Serre subcategories via atom spectrum . . . . .	10
33	Hiroataka Koga (Univ. of Tsukuba) <sup>#</sup>	Derived equivalences and Gorenstein dimension . . . . .	20

**13:15–14:15 Talk invited by Algebra Section**

Naoki Terai (Saga Univ.) Classification of licci edge ideals

March 22nd (Fri) Conference Room I

**9:00–12:00**

- 34 Satoshi Yamanaka (Okayama Univ.)<sup>#</sup> On Galois polynomials of degree  $p$  in skew polynomial rings of derivation type II ..... 10  
Shūichi Ikehata (Okayama Univ.)
- 35 Mitsuhiro Miyazaki \* Tensor of indeterminates and invariant theory ..... 10  
(Kyoto Univ. of Edu.)
- 36 Kyouko Kimura (Shizuoka Univ.) \* Non-vanishingness of Betti numbers of edge ideals and complete bipartite graphs ..... 10
- 37 Takao Hayami (Hokkai-Gakuen Univ.) \* Hochschild cohomology ring of quaternion algebras ..... 10
- 38 Kenichi Shimizu (Nagoya Univ.)<sup>#</sup> On indicators of Hopf algebras ..... 15
- 39 Hiroki Sasaki (Shinshu Univ.)<sup>#</sup> Cohomology rings of tame blocks ..... 15
- 40 Tsuyoshi Mieazaki (Yamagata Univ.)<sup>#</sup> The McKay–Thompson series of Mathieu Moonshine modulo two .... 10  
Thomas Creutzig (TU Darmstadt)  
Gerald Höhn (Kansas State Univ.)
- 41 Yuya Mizuno (Nagoya Univ.)<sup>#</sup>  $\tau$ -tilting modules over preprojective algebras of Dynkin type ..... 15
- 42 Akihiko Hida (Saitama Univ.)<sup>#</sup> The action of the double Burnside algebra on the cohomology of the extraspecial  $p$ -group ..... 10
- 43 Yutaka Yoshii (Nara Nat. Coll. of Tech.) \* The Loewy series of PIMs for  $2(h-1)$ -deep weights for a finite Chevalley group ..... 10
- 44 Tomohiro Kamiyoshi<sup>#</sup> Counting subspaces generated by subsets of a root system ..... 10  
(Matsue Coll. of Tech.)  
Makoto Nagura  
(Nara Nat. Coll. of Tech.)  
Shinichi Otani (Kanto Gakuin Univ.)
- 45 Tsunekazu Nishinaka<sup>#</sup> Primitivity of group rings of locally freely productable groups ..... 10  
(Okayama Shoka Univ.)
- 46 Shuhei Tsujie (Hokkaido Univ.)<sup>#</sup> A canonical system of basic invariants of a finite reflection group ..... 10  
Norihiro Nakashima (Hokkaido Univ.)

**14:15–15:00**

- 47 Toshiyuki Kikuta (Osaka Inst. of Tech.)<sup>#</sup> A congruence property of Igusa's cuspform of weight 35 ..... 15  
Hirotaka Kodama (Kinki Univ.)  
Shoyu Nagaoka (Kinki Univ.)
- 48 Shingo Sugiyama (Osaka Univ.)<sup>#</sup> Asymptotic behaviors of means of central values of automorphic  $L$ -functions for  $GL(2)$  ..... 10
- 49 Yasuko Hasegawa (Keio Univ.)<sup>#</sup> Central values of standard  $L$ -functions for  $Sp(2)$  ..... 10

**15:30–16:30 Award Lecture for 2012 Algebra Prize**Tomoyuki Arakawa (Kyoto Univ.)<sup>#</sup> Representation theory of  $W$ -algebras

**16:45–17:45 Award Lecture for 2012 Algebra Prize**Atsushi Ichino (Kyoto Univ.)<sup>#</sup> Automorphic representations and periods

March 23rd (Sat) Conference Room I

**9:00–12:00**

- 50 Yoshio Tanigawa (Nagoya Univ.)<sup>\*</sup> On the means of number-theoretic error terms with shifted arguments  
Jun Furuya  
(Okinawa Nat. Coll. of Tech.) ..... 10
- 51 Yusuke Fujisawa (Nagoya Univ.)<sup>\*</sup> On estimates of partial sums of the Möbius and Liouville functions for  
Makoto Minamide number fields ..... 15  
(Kyoto Sangyo Univ.)
- 52 Takahiro Wakasa (Nagoya Univ.)<sup>\*</sup> Supremum of the function  $S_1(t)$  on short intervals ..... 10
- 53 Kaneaki Matsuoka (Nagoya Univ.) The behavior of the higher derivatives of Hardy's function under the  
Riemann hypothesis ..... 10
- 54 Masanori Katsurada (Keio Univ.)<sup>#</sup> Complete asymptotic expansions for generalized Epstein zeta-functions  
..... 10
- 55 Soichi Ikeda (Nagoya Univ.)<sup>\*</sup> On an alternating series representation of real numbers ..... 10
- 56 Soichi Ikeda (Nagoya Univ.) The mean values of Euler–Zagier double zeta function ..... 10  
Kaneaki Matsuoka (Nagoya Univ.)  
Yoshikazu Nagata (Nagoya Univ.)
- 57 Tomoya Machide (Kinki Univ.)<sup>#</sup> Restricted sum formulas for double zeta values of even weight and  
Ramanujan's identity for Bernoulli numbers ..... 10
- 58 Yasuo Ohno (Kinki Univ.)<sup>#</sup> On 2 and 3-orders of di-Bernoulli numbers ..... 10  
Mika Sakata (Kinki Univ.)
- 59 Tomoya Machide (Kinki Univ.)<sup>#</sup> On a parameterized sum formula for quadruple zeta values ..... 10
- 60 Takao Komatsu (Hirosaki Univ.)<sup>#</sup> Poly-Cauchy polynomials ..... 15  
Ken Kamano (Osaka Inst. of Tech.)
- 61 Shingo Saito (Kyushu Univ.)<sup>\*</sup> The Bowman–Bradley theorem for mod  $p$  multiple zeta values ..... 10  
Noriko Wakabayashi  
(Kyushu Sangyo Univ.)
- 62 Kazuhito Kozuka<sup>\*</sup> Knopp type identities for  $p$ -adic multiple Dedekind sums ..... 10  
(Miyakonojo Nat. Coll. of Tech.)

**14:15–16:45**

- 63 Masatoshi Nakano<sup>\*</sup> Some conjecture on Fibonacci number ..... 10  
(Kesennuma High School)
- 64 Hajime Kaneko (Nihon Univ.)<sup>#</sup> Transcendence of real numbers related to the  $\beta$ -expansions by Pisot  
and Salem numbers ..... 15
- 65 Yohei Tachiya (Hirosaki Univ.)<sup>#</sup> Linear independence of certain Lambert series ..... 10
- 66 Masatoshi Suzuki (Tokyo Tech)<sup>#</sup> On self-reciprocal polynomials having only zeros on the unit circle ... 15

67	Masakazu Yamagishi (Nagoya Inst. of Tech.)	*	Chebyshev polynomials, cyclotomic polynomials and twin primes . . . . .	10
68	Hajime Kuroiwa (Kochi Univ.)	*	An application of a remainder represented by a splitting behavior . . . . .	15
69	Yuuki Takai (Univ. of Tokyo/Keio Univ.)	*	Indivisibility of relative class numbers of totally imaginary quadratic extensions of totally real number fields . . . . .	10
70	Tsuyoshi Itoh (Chiba Inst. of Tech.) Yu Takakura (Kyushu Univ.)	*	On the $\mu$ -invariant of tamely ramified Iwasawa modules . . . . .	15
71	Nao Takeshi (Tsuda Coll.)	#	Elliptic curves with good reduction everywhere over cubic fields . . . . .	10
72	Akinari Hoshi (Rikkyo Univ.) Aiichi Yamasaki (Kyoto Univ.)	#	Krull–Schmidt theorem fails for dimension 5 . . . . .	10
73	Aiichi Yamasaki (Kyoto Univ.)	#	Isoclinism families of the groups of order 256 . . . . .	10

---

## Geometry

March 20th (Wed)      Conference Room III

### 9:20–12:00

1	Hirota Ebisui (Oval Research Center)	#	Sarouh theorem of famous theorem in history . . . . .	5
2	Hirota Ebisui (Oval Research Center)	#	On some square infinity-chain expansion-compositions of Pythagoras 2 area theorem and 6 perpendiculars-concurrence theorem, which show the existence of infinity parallel space . . . . .	5
3	Noriko Zaitzu (Eigakuin)		About rigidity and infinitesimal rigidity of Polyhedron . . . . .	10
4	Kiyohisa Tokunaga (Fukuoka Inst. of Tech.)	#	The divergence theorem of a triangular integral . . . . .	10
5	Sadahiro Maeda (Saga Univ.) Katsufumi Yamashita (Saga Univ.)	#	Characterizations of the homogeneous real hypersurface of type (B) having two constant principal curvatures in a complex hyperbolic space . . . . .	10
6	Sadahiro Maeda (Saga Univ.) Yuichiro Taniguchi (Saga Univ.)	#	A characterization of minimal real hypersurfaces of type $(A_2)$ in a complex projective space . . . . .	10
7	Naoya Ando (Kumamoto Univ.)	*	Over-determined systems on surfaces in 3-dimensional space forms . . . . .	15
8	Kouhei Miura (Tokyo Univ. of Sci.)	*	The global lightlike transversal bundles of lightlike paracomplex submanifolds in parahermitian manifolds . . . . .	10
9	Naoyuki Koike (Tokyo Univ. of Sci.)	*	The classification of certain kind of isoparametric hypersurfaces in symmetric spaces of non-compact type . . . . .	15
10	Atsufumi Honda (Tokyo Tech.)	*	Weakly complete wave fronts one of whose principal curvatures is constant . . . . .	10
11	Shyuichi Izumiya (Hokkaido Univ.) Takami Sato (Hokkaido Univ.)	#	Singularities of lightlike hypersurfaces along spacelike submanifolds in anti-de Sitter space . . . . .	15
12	Takami Sato (Hokkaido Univ.)	#	Evolutes of spacelike hypersurfaces in anti-de Sitter space . . . . .	15

**14:20–15:20**

- 13 Hirotake Kurihara (Kyoto Univ.)<sup>#</sup> A characterization of great antipodal sets by design theory on complex Grassmannian spaces ..... 15
- 14 Jun Nonaka (Keio Univ.)<sup>\*</sup> Coxeter polyhedra in hyperbolic spaces ..... 15
- 15 Soji Kaneyuki (上智大<sup>\*</sup>) On the group of holomorphic and anti-holomorphic transformations of a compact Hermitian symmetric space and the  $G$ -structure ..... 15

**15:45–16:45 Talk invited by Geometry Section**

- Wayne Rossman (Kobe Univ.)<sup>#</sup> Construction of discrete surfaces in terms of discrete flat connections

March 21st (Thu) Conference Room III

**9:20–11:50**

- 16 Takayuki Moriyama (Kyoto Univ.)<sup>#</sup> Deformations of special Legendrian submanifolds on Sasaki–Einstein manifolds ..... 15
- 17 Kotaro Kawai (Tohoku Univ.)<sup>\*</sup> Construction of coassociative submanifolds ..... 10
- 18 Kota Hattori (Univ. of Tokyo)<sup>\*</sup> Generalizations of Taub-NUT deformations ..... 15
- 19 Tomoyuki Hisamoto (Univ. of Tokyo)<sup>#</sup> Geometry of the space of Kähler metrics, the relation between Calabi-type functionals and the Donaldson–Futaki invariant. .... 15
- 20 Nobuhiko Otaba (Keio Univ.)<sup>#</sup> New examples of Riemannian metrics with constant scalar curvature ..... 15
- 21 Hajime Fujita (Japan Women’s Univ.)<sup>#</sup> On an  $S^1$ -equivariant index for symplectic manifold ..... 15
- 22 Masao Jinzenji (Hokkaido Univ.)<sup>#</sup> Multi-point virtual structure constants and mirror computation of  $CP^2$ -  
Masahide Shimizu (Hokkaido Univ.) model ..... 10
- 23 Tsukasa Takeuchi (Tokyo Univ. of Sci.)<sup>#</sup> About the configuration and characteristic of concrete recursion opera-  
Kiyonori Hosokawa tor ..... 10  
(Tokyo Univ. of Sci.)
- 24 Peng Fei Bai (Nagoya Inst. of Tech.)<sup>\*</sup> Areas of trajectory-spheres ..... 10  
Toshiaki Adachi (Nagoya Inst. of Tech.)

**13:00–14:00 Talk invited by Geometry Section**

- Makiko Tanaka (Tokyo Univ. of Sci.)<sup>#</sup> Antipodal sets of compact symmetric spaces and the intersection of totally geodesic submanifolds

March 22nd (Fri) Conference Room III

**9:30–11:30**

- 25 Shun Maeta (Tohoku Univ.)<sup>#</sup> Biharmonic submanifolds and generalized Chen’s conjecture ..... 10
- 26 Shun Maeta (Tohoku Univ.)<sup>#</sup> Biharmonic Lagrangian submanifolds in complex space forms ..... 10  
Hajime Urakawa (Tohoku Univ.)
- 27 Yoshio Matsuyama (Chuo Univ.)<sup>#</sup> Curvature pinching for complete submanifolds ..... 10
- 28 Hiroki Sako (Kyoto Univ.)<sup>\*</sup> Generalizations of expander graphs and Property A for discrete metric spaces ..... 15

- 29 Shouhei Honda (Kyushu Univ.)\* A Bochner type inequality on limit spaces. . . . . 20
- 30 Kei Kondo (Tokai Univ.)# Toponogov's comparison theorem in Finsler geometry . . . . . 20  
 Shin-ichi Ohta (Kyoto Univ.)  
 Minoru Tanaka (Tokai Univ.)

**14:20–15:20 Talk invited by Geometry Section**

- Jeff Viaclovsky # Critical metrics on connected sums of Einstein four-manifolds  
 (Univ. of Wisconsin, Madison)

**15:40–16:40 Talk invited by Geometry Section**

- Hiroshi Matsuzoe # Statistical manifolds and geometry of estimating functions  
 (Nagoya Inst. of Tech.)

**Complex Analysis**

March 22nd (Fri) Conference Room VIII

**9:30–12:00**

- 1 Katsuyuki Nishimoto \* N-fractional calculus of the function  $f(z) = ((z-b)^2-c)^{-3}$  and identities  
 (Descartes Press Co.) . . . . . 15
- 2 Mitsuru Uchiyama (Shimane Univ.)# Principal inverses of orthogonal polynomials . . . . . 15
- 3 Hitoshi Shiraishi (Kinki Univ.)# Coefficient estimates for Schwarz functions . . . . . 15  
 Toshio Hayami (Kinki Univ.)
- 4 Toshio Hayami (Kinki Univ.)# Coefficient estimates for a certain class concerned with arguments of  
 Shigeyoshi Owa (Kinki Univ.)  $f'(z)$  . . . . . 15
- 5 Junichi Nishiwaki (Setsunan Univ.)# Notes on a certain class of analytic functions . . . . . 15  
 Shigeyoshi Owa (Kinki Univ.)
- 6 Kazuo Kuroki (Kinki Univ.)# Starlikeness of order  $\alpha$  for certain class of analytic functions . . . . . 15  
 Shigeyoshi Owa (Kinki Univ.)
- 7 Naohiro Yaginuma (Nippon RAD, Inc.)# On the first boundary value problem of the biharmonic equation for the  
 Minoru Yanagishita (Chiba Univ.) half-space . . . . . 15
- 8 Hiroaki Masaoka (Kyoto Sangyo Univ.)# On harmonic Hardy–Orlicz spaces . . . . . 15  
 Tero Kilpeläinen (Univ. of Jyväskylä)  
 Pekka Koskela (Univ. of Jyväskylä)
- 9 Rikio Yoneda \* Toeplitz operators and Hankel operators on the Bergman spaces with  
 (Otaru Univ. of Commerce) closed range . . . . . 10

**14:20–15:40**

- 10 Masashi Kisaka (Kyoto Univ.)<sup>#</sup> On the transcendental entire functions with the property that  $J(f) \cup \{\infty\} \subset \widehat{\mathbb{C}}$  is a Sierpiński carpet ..... 15
- 11 Masahiro Yanagishita (Waseda Univ.)<sup>#</sup> On a relation between the universal Teichmüller space and the Grunsky operator ..... 20
- 12 Yoshihiko Shinomiya (Tokyo Tech)<sup>#</sup> On holomorphic sections of Veech holomorphic families of Riemann surfaces ..... 15
- 13 Yohei Komori (Waseda Univ.)<sup>\*</sup> On a degenerate family of Riemann surfaces of genus two over an elliptic curve ..... 15

**16:00–17:00 Talk invited by Complex Analysis Section**

- Tomoki Kawahira (Nagoya Univ.)<sup>#</sup> Zalcman's lemma and complex dynamics

March 23rd (Sat) Conference Room VIII

**10:00–12:00**

- 14 Kohei Ueno<sup>\*</sup> Böttcher coordinates for polynomial skew products ..... 15  
(Toba Nat. Coll. of Maritime Tech.)
- 15 Tomoko Shinohara<sup>#</sup> A construction of an invariant surface for an indeterminate point of  
(Tokyo Metro. Coll. of Ind. Tech.) rational mappings ..... 15
- 16 Tatsuhiro Honda<sup>#</sup> Distortion theorems for linearly invariant families ..... 15  
(Hiroshima Inst. of Tech.)  
Hidetaka Hamada  
(Kyushu Sangyo Univ.)  
Gabriela Kohr (Babeş-Bolyai Univ.)
- 17 Tomohiro Okuma (Yamagata Univ.)<sup>\*</sup> The maximal ideal cycles over complete intersection surface singularities  
Fan-Ning Meng (Yamagata Univ.) of Brieskorn type ..... 15
- 18 Atsuhira Nagano (Waseda Univ.)<sup>#</sup> Double integrals on chambers of the Kummer surface and the Hilbert  
modular function ..... 15
- 19 Takayuki Koike (Univ. of Tokyo)<sup>\*</sup> Minimal singular metrics of a line bundle admitting no Zariski-decomposition  
..... 10
- 20 Masanori Adachi (Nagoya Univ.)<sup>#</sup> On the ampleness of positive CR line bundles over 3-manifolds foliated  
by Riemann surfaces ..... 15

**14:20–15:20 Talk invited by Complex Analysis Section**

- Hidetaka Hamada<sup>#</sup> Loewner chains on complete hyperbolic complex manifolds  
(Kyushu Sangyo Univ.)
-

## Functional Equations

March 20th (Wed)      Conference Room IV

### 9:30–12:00

- 1 Tomoyuki Tanigawa (Kumamoto Univ.)\* Regularly varying solutions of half-linear differential equations with retarded and advanced arguments ..... 15
- 2 Toshiharu Kawasaki (Nihon Univ.)# Masashi Toyoda (Tamagawa Univ.) On the Cauchy problem for an ordinary differential equation by using a fixed point theorem ..... 15
- 3 Ichiro Tsukamoto (Toyo Univ.)\* On asymptotic behaviour of positive solutions of  $x'' = t^{\alpha\lambda-2}x^{1+\alpha}$  ( $\alpha = \lambda_0, \lambda > 0$ ) ..... 12
- 4 Seiji Saito (Doshisha Univ.)# Globally uniformly asymptotic stability of solutions for difference equations ..... 15
- 5 Katsuyuki Nishimoto (Descartes Press Co.)\* Solutions to the homogeneous Bessel equation by means of N-fractional calculus operator ..... 15
- 6 Katsuyuki Nishimoto (Descartes Press Co.)\* The solutions to the radial Schrödinger equation of the hydrogen atom by means of N-fractional calculus operator ..... 15
- 7 Ryu Sasaki (Kyoto Univ.)# Kouichi Takemura (Chuo Univ.) Global solutions of certain second order differential equations with a high degree of apparent singularity ..... 10
- 8 Nobuki Takayama (Kobe Univ./JST CREST)# Takayuki Hibi (Osaka Univ./JST CREST)# Kenta Nishiyama (Osaka Univ./JST CREST)# Pfaffian systems of  $A$ -hypergeometric systems ..... 15
- 9 Hiromasa Nakayama (Kobe Univ./JST CREST)# Gröbner basis for differential equations of the Lauricella hypergeometric functions ..... 15

### 14:15–16:30

- 10 Hidekazu Ito (Kanazawa Univ.)# Superintegrability of vector fields and their normal forms near equilibrium points ..... 15
- 11 Chihiro Matsuoka (Ehime Univ.)# Koichi Hiraide (Ehime Univ.) Global solutions created by Borel–Laplace transform of difference equations associated with Hénon maps ..... 15
- 12 Masaki Hibino (Meijo Univ.)\* On the summability of divergent power series solutions for certain 1st order linear PDEs ..... 15
- 13 Yasuaki Nijjima (Chiba Univ.)# On the prolongation of 2-bounded holomorphic solutions to the first order involutive system ..... 10
- 14 Hideshi Yamane (Kwansei Gakuin Univ.)# Long-time asymptotics for the defocusing integrable discrete nonlinear Schrödinger equation ..... 15
- 15 Haruya Mizutani (Gakushuin Univ.)# Remarks on Strichartz estimates for Schrödinger equations with potentials superquadratic at infinity ..... 15
- 16 Tetsutaro Shibata (Hiroshima Univ.)\* Inverse bifurcation problems for diffusive logistic equation of population dynamics ..... 15
- 17 Yutaka Kamimura (Tokyo Univ. of Marine Sci. and Tech.)# An inverse analysis of advection-diffusion ..... 15



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

- Naoto Yamaoka (Osaka Pref. Univ.)<sup>#</sup> An oscillation constant for half-linear differential equations and its application

March 21st (Thu) Conference Room IV

**9:30–12:00**

- 18 Satoshi Tanaka (Okayama Univ. of Sci.)<sup>#</sup> Exact multiplicity of positive solutions for a class of two-point boundary value problems with one-dimensional  $p$ -Laplacian ..... 15
- 19 Naoki Sioji (Yokohama Nat. Univ.)<sup>#</sup> Uniqueness of a positive radial solution for an elliptic equation  $\Delta u + g(r)u + h(r)u^p = 0$  and its applications ..... 15  
Kohtaro Watanabe  
(Nat. Defense Acad. of Japan)
- 20 Ryuji Kajikiya (Saga Univ.)<sup>\*</sup> Asymmetry of positive solutions of the Emden–Fowler equation in hollow symmetric domains ..... 15
- 21 Ryuji Kajikiya (Saga Univ.)<sup>\*</sup> Multiple positive solutions of the Emden–Fowler equation in hollow symmetric domains ..... 15
- 22 Yasuhito Miyamoto (Keio Univ.)<sup>#</sup> Structure of the positive solutions for supercritical elliptic equations in a ball ..... 10
- 23 Yasuhito Miyamoto (Keio Univ.)<sup>#</sup> Symmetry breaking bifurcation from solutions concentrating on the equator of  $S^N$  ..... 10
- 24 Yasuhito Miyamoto (Keio Univ.)<sup>#</sup> Monotonicity of the first eigenvalue and the global bifurcation diagram for the branch of interior peak solutions ..... 10  
Kazuyuki Yagasaki (Hiroshima Univ.)
- 25 Daisuke Naimen (Osaka City Univ.)<sup>#</sup> Existence of infinitely many solutions for nonlinear Neumann problems with indefinite coefficients ..... 15
- 26 Yusuke Kotera (Osaka Univ.)<sup>#</sup> Hadamard variational formula for general domain perturbation ..... 10  
Takashi Suzuki (Osaka Univ.)  
Takuya Tsuchiya (Ehime Univ.)
- 27 Yoichi Miyazaki (Nihon Univ.)<sup>#</sup>  $L_p$  regularity theorem for elliptic equations and smoothness of the domain ..... 12

**13:30–14:30 Award Lecture for 2012 Analysis Prize**

- Shigeru Sakaguchi (Tohoku Univ.)<sup>#</sup> Stationary isothermic surfaces and geometry of domain

March 22nd (Fri) Conference Room IV

**9:30–12:00**

- 28 Chihiro Aida (Meiji Univ.)<sup>#</sup> Diffusion-induced bifurcation from infinity ..... 15  
Chao-Nien Chen  
(Nat. Changhua Univ. of Edu.)  
Hirokazu Ninomiya (Meiji Univ.)
- 29 Yuki Kaneko (Waseda Univ.)<sup>#</sup> Spreading and vanishing for free boundary problems in an ecological model ..... 15  
Yoshio Yamada (Waseda Univ.)  
Kazuhiro Oeda (Waseda Univ.)
- 30 Hiroko Okochi <sup>#</sup> Conditions for Turing's instability concernig reaction-diffusion equations ..... 8  
(Tokyo Univ. of Pharmacy and Life Sci.)

- 31 Hiroko Okochi (Tokyo Univ. of Pharmacy and Life Sci.)<sup>#</sup> Pattern transitions of solutions concerning reaction-diffusion equations ..... 8
- 32 Yoshifumi Mimura (Tokyo Univ. of Sci.)<sup>#</sup> The variational formulation of the fully parabolic Keller–Segel system with degenerate diffusion ..... 15
- 33 Sachiko Ishida (Tokyo Univ. of Sci.)<sup>#</sup> Local-in-time existence and blow-up of solutions to quasilinear degenerate parabolic-parabolic Keller–Segel systems ..... 15  
Tomomi Yokota (Tokyo Univ. of Sci.)
- 34 Noriko Mizoguchi (Tokyo Gakugei Univ./JST PRESTO)<sup>\*</sup> Finite-time blowup in the two-dimensional parabolic Keller–Segel system ..... 15  
Michael Winkler (Univ. Paderborn)
- 35 Takashi Suzuki (Osaka Univ.)<sup>#</sup> Global-in-time behavior of Lotka–Volterra systems ..... 10  
Yoshio Yamada (Waseda Univ.)
- 36 Norisuke Ioku (Ehime Univ.)<sup>#</sup> On the best constant for the Hardy inequality in the limiting case with scale invariance ..... 12
- 37 Hiroya Ito (Univ. of Electro-Comm.)<sup>#</sup> A generalization of the Korn inequality ..... 15
- 14:15–16:15**
- 38 Naoyuki Ichihara (Hiroshima Univ.)<sup>\*</sup> On the criticality of viscous Hamilton–Jacobi equations ..... 15
- 39 Tomoyuki Niizato (Osaka Univ.)<sup>\*</sup> Almost global existence of solutions to the short-pulse equation ..... 10
- 40 Takamori Kato (Kyoto Univ.)<sup>#</sup> Unconditional well-posedness of the fifth order KdV equation with periodic boundary condition ..... 15  
Kotaro Tsugawa (Nagoya Univ.)
- 41 Nakao Hayashi (Osaka Univ.)<sup>\*</sup> Logarithmic time decay and cubic nonlinear Schrödinger equations ... 10
- 42 Masahiro Ikeda (Osaka Univ.)<sup>#</sup> Lifespan of solutions for the nonlinear Schrödinger equation without gauge invariance ..... 10
- 43 Toshiyuki Suzuki (Tokyo Univ. of Sci.)<sup>#</sup> The limiting case of nonlinear Schrödinger equations with inverse-square potentials ..... 15
- 44 Hayato Miyazaki (Hiroshima Univ.)<sup>#</sup> The derivation of the conservation law for nonlinear Schrödinger equations of Gross–Pitaevskii type ..... 10
- 45 Nobu Kishimoto (Kyoto Univ.)<sup>#</sup> Well-posedness for the cubic nonlinear Schrödinger equation on two-dimensional torus ..... 15
- 16:30–17:30 Award Lecture for 2012 Analysis Prize**
- Yoshiyuki Kagei (Kyushu Univ.)<sup>#</sup> Asymptotic behavior of solutions of the compressible Navier-Stokes equation around a parallel flow

March 23rd (Sat) Conference Room IV

**9:30–11:45**

- 46 Hiroyuki Takamura (Future Univ.-Hakodate)<sup>\*</sup> An example of dissipative structure of nonlinear wave equations with quadratic terms in four space dimensions ..... 10  
Kyouhei Wakasa (Future Univ.-Hakodate)
- 47 Kazuyuki Doi (Toyama Pref. Univ.)<sup>\*</sup> On the weighted pointwise estimates for derivatives of solutions to the wave equation ..... 10  
Hideo Kubo (Hokkaido Univ.)

48	Tomonari Watanabe (Hiroshima Univ.) <sup>#</sup>	Global existence and decay estimates for quasilinear wave equations with nonuniform dissipative term	10
49	Itsuko Hashimoto (Kanazawa Univ./Osaka City Univ.) Heinrich Freistühler (Konstanz Univ.)	* Initial boundary value problem for scalar conservation law	10
50	Naoki Tsuge (Gifu Univ.) <sup>#</sup>	The motion of the gas in a nozzle —Time global existence and invariant regions—	15
51	Jan Prüss (Univ. Halle) <sup>*</sup> Senjo Shimizu (Shizuoka Univ.) Mathias Wilke (Univ. Halle)	On a stability of incompressible two-phase flows with phase transitions in a bounded domain: The case of non-equal densities	15
52	Tetu Makino (Yamaguchi Univ.) <sup>*</sup>	Spherically symmetric motions of a gaseous star	15
53	Teppei Kobayasi (Meiji Univ.) <sup>*</sup>	Jeffery–Hamel’s flows in the plane III	10
54	Teppei Kobayasi (Meiji Univ.) <sup>*</sup>	Steady Navier–Stokes equations with Poiseuille’s flow and Jeffery–Hamel’s flow	15

#### 14:15–15:15 Talk invited by Functional Equations Section

	Hiroyuki Takamura (Future Univ.-Hakodate) <sup>#</sup>	General theory of initial value problems for nonlinear wave equations and its optimality.	
--	--	---	--

## Real Analysis

March 20th (Wed) Conference Room VIII

#### 9:00–12:10

1	Shota Kojima (Rikkyo Univ.) <sup>#</sup>	A generalization of $e$	10
2	Yukino Tomizawa (Chuo Univ.) <sup>#</sup> Yoshikazu Kobayashi (Chuo Univ.) Naoki Tanaka (Shizuoka Univ.)	Lipschitz evolution operators in Banach spaces	15
3	Takesi Fukao (Kyoto Univ. of Edu.) <sup>#</sup> Nobuyuki Kenmochi (Bukkyo Univ.)	Characterization of the solution for evolution equations with time-dependent constraints	15
4	Toyohiko Aiki (Japan Women’s Univ.) <sup>#</sup> Adrian Muntean (TU Eindhoven)	On large time behavior of a solution to the concrete corrosion problem in a sewer pipe	15
5	Ken Shirakawa (Chiba Univ.) Salvador Moll (Univ. Valencia)	Existence theorem for solutions to multidimensional phase-field models of grain boundaries	15
6	Noriaki Yamazaki (Kanagawa Univ.) <sup>#</sup> Lingling Zhang (Taiyuan Univ. of Tech.) Chengbo Zhai (Shanxi Univ.)	Necessary conditions for optimal control of positive solutions to second order impulsive differential equations	15
7	Hiroki Ohwa (Niigata Univ.) <sup>*</sup>	On the wave-front tracking method for $2 \times 2$ hyperbolic systems of conservation laws	15

- 8 Naoki Sato (Nagaoka Nat. Coll. of Tech.)<sup>#</sup> On global solution of a one dimensional free boundary problem for adsorption phenomena ..... 15  
 Toyohiko Aiki (Japan Women's Univ.)  
 Yusuke Murase (Meijo Univ.)  
 Ken Shirakawa (Chiba Univ.)
- 9 Motohiro Sobajima (Tokyo Univ. of Sci.)<sup>#</sup> On analytic  $C_0$ -semigroups generated by generalized Ornstein–Uhlenbeck operators in weighted  $L^p$ -spaces ..... 15  
 Tomomi Yokota (Tokyo Univ. of Sci.)
- 10 Yutaka Tsuzuki (Tokyo Univ. of Sci.)<sup>#</sup> Solvability of nonlinear heat equations with unbounded obstacles coupled with Navier–Stokes equations ..... 15  
 Motohiro Sobajima (Tokyo Univ. of Sci.)  
 Tomomi Yokota (Tokyo Univ. of Sci.)
- 11 Akio Ito (Kinki Univ.)<sup>#</sup> Existence and uniqueness of non-negative time-global solutions to ODE system describing cardiomegaly ..... 15  
 Kazuhiko Yamamoto (Kinki Univ.)
- 12 Risei Kano (Kochi Univ.)<sup>#</sup> The existence of weak solutions for tumor invasion models ..... 15  
 Akio Ito (Kinki Univ.)

**14:15–16:30**

- 13 Kota Kumazaki (Tomakomai Nat. Coll. of Tech.)<sup>#</sup> Large time behavior of a solution for carbon dioxide transport model in concrete carbonation process ..... 15
- 14 Hiroshi Watanabe (Salasian Polytecnic)<sup>#</sup> A kinetic approach to strongly degenerate parabolic equations ..... 15
- 15 Akio Ito (Kinki Univ.)<sup>#</sup> Solvability of mathematical modeling for Sake whose finish time depends on the solutions ..... 15  
 Nobuyuki Kenmochi (Bukkyo Univ.)  
 Yusuke Murase (Meijo Univ.)
- 16 Takeshi Iida (Fukushima Nati. Coll. of Tech.)<sup>#</sup> The inequalities on weighted Morrey spaces for Hardy–Littlewood maximal function and singular integrals ..... 15
- 17 Gaku Sadasue (Osaka Kyoiku Univ.)<sup>#</sup> Generalized Morrey–Campanato spaces of martingales ..... 15  
 Yoshihiro Sawano (Tokyo Metro. Univ.)  
 Eiichi Nakai (Ibaraki Univ.)
- 18 Takahiro Noi (Chuo Univ.)<sup>#</sup> Trace operators for Besov spaces with variable exponents ..... 15
- 19 Katsuo Matsuoka (Nihon Univ.)<sup>#</sup> On the boundedness for singular integrals in central Morrey spaces and  $\lambda$ -CMO spaces ..... 15
- 20 Shinya Moritoh (Nara Women's Univ.)<sup>\*</sup> Anisotropic versions of some analogues of Besov–Triebel–Lizorkin spaces ..... 15

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

- Giorgio Metafuno (Salento Univ.)<sup>#</sup> Spectral properties of second order operators with unbounded coefficients in  $\mathbb{R}^d$

March 21st (Thu) Conference Room VIII

**9:00–11:55**

- 21 Enji Sato (Yamagata Univ.)<sup>#</sup> Fourier multipliers from  $L^p$  spaces to Morrey spaces on the unit circle ..... 15  
 Takashi Izumi (Yamagata Univ.)

- 22 Nobusumi Sagara (Hosei Univ.)<sup>#</sup> Maharam-types and Lyapunov's theorem for vector measures on Banach spaces ..... 15  
 Mohammed Ali Khan  
 (Johns Hopkins Univ.)
- 23 Toshiharu Kawasaki (Nihon Univ.)<sup>#</sup> Approximately derivative in a vector lattice ..... 15
- 24 Toshikazu Watanabe (Nihon Univ.)<sup>#</sup> On Riesz space-valued non-additive measures ..... 15  
 Tamaki Tanaka (Niigata Univ.)
- 25 Fumiaki Kohsaka (Oita Univ.)<sup>#</sup> Nonexistence of fixed points and unbounded sets ..... 15
- 26 Kichi-Suke Saito (Niigata Univ.)<sup>#</sup> Beckner's inequality and its application to Banach spaces ..... 10  
 Ryotaro Tanaka (Niigata Univ.)  
 Naoto Komuro  
 (Hokkaido Univ. of Edu.)
- 27 Ryotaro Tanaka (Niigata Univ.)<sup>#</sup> A structure of finite dimensional normed linear spaces ..... 15  
 Kichi-Suke Saito (Niigata Univ.)
- 28 Hiroyasu Mizuguchi (Niigata Univ.)<sup>#</sup> On the calculation method of the Dunkl–Williams constant of normed spaces ..... 15  
 Kichi-Suke Saito (Niigata Univ.)  
 Ryotaro Tanaka (Niigata Univ.)
- 29 Koji Aoyama (Chiba Univ.)<sup>#</sup> Existence of fixed points of firmly nonexpansive-like mappings in Banach spaces ..... 15
- 30 Aoi Honda (Kyushu Inst. of Tech.)<sup>#</sup> Inner and outer approximation spaces of  $\Lambda_2(f)$  and  $\ell_p$  ..... 15  
 Yoshiaki Okazaki  
 (Kyushu Inst. of Tech.)  
 Hiroshi Sato (Kyushu Univ.\*)

**12:55–13:25**

- 31 Takayuki Tamura (Chiba Univ.)<sup>#</sup> On direct sums of Banach spaces with a strictly monotone norm ..... 15  
 Mikio Kato (Shinshu Univ.)
- 32 Yasuji Takahashi (Okayama Pref. Univ.)<sup>\*</sup> Some results on von Neumann–Jordan type constants of a Banach space ..... 15  
 Mikio Kato (Shinshu Univ.)

**13:40–14:40 Talk invited by Real Analysis Section**

- Tsuyoshi Yoneda (Hokkaido Univ.)<sup>#</sup> Fourier analysis and rotating Navier–Stokes equations

**Functional Analysis**

March 21st (Thu) Conference Room V

**9:30–12:15**

- 1 Tatsuya Tsurii (Osaka Pref. Univ.)<sup>#</sup> Deformations of finite hypergroups ..... 10  
 Satoshi Kawakami (Nara Univ. of Edu.)

2	Masafumi Sakao (Chiba Univ.) <sup>#</sup> Tatsuya Tsurii (Osaka Pref. Univ.) Satoe Yamanaka (Osaka Pref. Univ.) Satoshi Kawakami (Nara Univ. of Edu.)	Duality problem of extension hypergroups . . . . .	10
3	Itsumi Mikami <sup>#</sup> Tatsuya Tsurii (Osaka Pref. Univ.) Satoe Yamanaka (Osaka Pref. Univ.) Satoshi Kawakami (Nara Univ. of Edu.)	A hypergroup coming from infinite dimensional representations of a motion group . . . . .	10
4	Satoe Yamanaka (Osaka Pref. Univ.) <sup>#</sup> Herbert Heyer (Tübingen Univ.) Satoshi Kawakami (Nara Univ. of Edu.)	Induced states of a hypergroup . . . . .	10
5	Satoshi Kawakami (Nara Univ. of Edu.) <sup>#</sup> Herbert Heyer (Tübingen Univ.)	When does the dual have a hypergroup structure? . . . . .	10
6	Satoshi Kawakami (Nara Univ. of Edu.) <sup>#</sup> Herbert Heyer (Tübingen Univ.)	Imprimitivity theorem for representations of a hypergroup . . . . .	10
7	Takaaki Nomura (Kyushu Univ.) <sup>*</sup>	Inductive structure and the determinant of the right multiplication operators in the clan structure of a Euclidean Jordan algebra . . . . .	15
8	Hideto Nakashima (Kyushu Univ.) <sup>#</sup>	Clans defined by representations of Hermitian Jordan algebras . . . . .	15
9	Hideto Nakashima (Kyushu Univ.) <sup>#</sup> Takaaki Nomura (Kyushu Univ.)	Clans defined by representations of Lorentzian Jordan algebras . . . . .	15
10	Hideto Nakashima (Kyushu Univ.) <sup>#</sup> Takaaki Nomura (Kyushu Univ.)	Dual clans of clans defined by representations of Euclidean Jordan algebras . . . . .	15
11	Atsumu Sasaki (Tokai Univ.) <sup>#</sup>	Compatible automorphisms for visible linear actions . . . . .	15
12	Takashi Hashimoto (Tottori Univ.) <sup>#</sup>	Embedding of real coadjoint orbits in the twisted cotangent bundle of the complex flag variety . . . . .	15

### 13:30–14:30 Talk invited by Functional Analysis Section

Hisayosi Matumoto (Univ. of Tokyo)<sup>#</sup> On the homomorphisms between scalar generalized Verma modules

March 22nd (Fri) Conference Room V

### 10:00–12:00

13	Yuki Seo (Osaka Kyoiku Univ.) <sup>#</sup>	The Arithmetic-Geometric mean inequality in an external formula . . .	10
14	Kei Ji Izuchi (Niigata Univ.) <sup>*</sup> Quang Dieu Nguyen (Hanoi Univ. of Education, Vietnam) Shūichi Ohno (Nippon Inst. of Tech.)	Composition operators induced by analytic maps to the polydisk . . . . .	15
15	Wolfgang Krieger (Univ. of Heidelberg) <sup>*</sup> Toshihiro Hamachi (Kyushu Univ.) <sup>*</sup>	A class of subshifts with property (A) . . . . .	15
16	Tsuyoshi Kajiwara (Okayama Univ.) <sup>#</sup> Yasuo Watatani (Kyushu Univ.)	Trace on cores of $C^*$ -algebras associated with rational functions . . . . .	15
17	Kengo Matsumoto (Joetsu Univ. of Edu.) <sup>*</sup>	$C^*$ -algebras associated with Hilbert $C^*$ -quad modules of finite type . . . . .	15

- 18 Yasuhiko Sato (Kyoto Univ.)<sup>#</sup> Decomposition rank of UHF absorbing  $C^*$ -algebras ..... 15
- 19 Hiroyuki Osaka (Ritsumeikan Univ.)<sup>#</sup> Nuclear dimension for an inclusion of unital  $C^*$ -algebras ..... 10  
Tamotsu Teruya (Gunma Univ.)
- 20 Hiroyuki Osaka (Ritsumeikan Univ.)<sup>#</sup> On generalized Powers–Størmer’s inequality ..... 15  
Dinh Trung Hoa (Duy Tan Univ.)  
Ho Minh Toan  
(Math. Inst., Vietnam Acad. of Sci. and Tech.)

**14:30–15:20**

- 21 Hiroshi Ando (IHÉS)<sup>#</sup> Ultraproducts of von Neumann algebras ..... 20  
Uffe Haagerup (Univ. of Copenhagen)
- 22 Satoshi Goto (Sophia Univ.)<sup>#</sup> On classification of connections between Dynkin diagrams and  $ADE$  fusion bimodules ..... 10
- 23 Satoshi Goto (Sophia Univ.)<sup>#</sup> On generalized Goodman–de la Harpe–Jones subfactors of type  $D-E$  ..... 10
- 24 Satoshi Goto (Sophia Univ.)<sup>#</sup> On flat and non-flat connection systems of the 3311 spoke subfactor ..... 5

**15:40–16:40 Talk invited by Functional Analysis Section**

- Reiji Tomatsu (Hokkaido Univ.)<sup>#</sup> Classification problem of group or quantum group actions on von Neumann algebras

March 23rd (Sat) Conference Room V

**10:30–12:00**

- 25 Hiromichi Miyake<sup>#</sup> On the existence of the mean values for commutative semigroups of Dunford–Schwartz operators on  $L^1$  ..... 15
- 26 Yoshinori Kametaka (Osaka Univ.)<sup>#</sup> The best constant of discrete Sobolev inequality on chiral type Carbon nano tube ..... 10
- 27 Hiroyuki Yamagishi<sup>#</sup> Complete low-cut filter and the best constant of Sobolev inequality ..... 10  
(Tokyo Metro. Coll. of Ind. Tech.)  
Yoshinori Kametaka (Osaka Univ.)  
Atsushi Nagai (Nihon Univ.)  
Kohtaro Watanabe  
(Nat. Defense Acad. of Japan)  
Kazuo Takemura (Nihon Univ.)
- 28 Hiroyuki Yamagishi<sup>#</sup> The best constant of discrete Sobolev inequality on complete graph ..... 10  
(Tokyo Metro. Coll. of Ind. Tech.)  
Kohtaro Watanabe  
(Nat. Defense Acad. of Japan)  
Yoshinori Kametaka (Osaka Univ.)
- 29 Shin-ichi Nakagiri (Kobe Univ.)<sup>#</sup> Structural properties of solution semigroups associated with hyperbolic Volterra integro-differential systems ..... 15
- 30 Kohei Umeta (Hokkaido Univ.)<sup>#</sup> The edge of the wedge theorem for holomorphic functions with growth conditions of exponential type and Laplace hyperfunctions ..... 15  
Naofumi Honda (Hokkaido Univ.)

**14:30–15:30 Talk invited by Functional Analysis Section**

Akzunori Ando (Univ. of Tsukuba)<sup>#</sup> Inverse scattering problem for discrete Schrödinger operators on the hexagonal lattice

**Statistics and Probability**

March 20th (Wed) Conference Room IX

**9:30–12:00**

- 1 Yukiko Iwata (Univ. of Tokyo)<sup>#</sup> Stochastic perturbations of one-dimensional maps ..... 15
- 2 Yu Ito (Kyoto Univ.)<sup>#</sup> Integrals along rough paths via fractional calculus ..... 15
- 3 Makoto Nakashima (Univ. of Tsukuba)<sup>#</sup> Super-Brownian motion in random environment ..... 15
- 4 Yuki Suzuki (Keio Univ.)<sup>\*</sup> A diffusion process with a Brownian potential including a zero potential part ..... 15
- 5 Katusi Fukuyama (Kobe Univ.)<sup>\*</sup> Optimal bound for the discrepancies of lacunary sequences ..... 5  
Christoph Aistleitner (Graz Univ. Tech.)  
Yukako Furuya (Hitachi, Ltd.)
- 6 Hiroaki Hata (Shizuoka Univ.)<sup>#</sup> Risk-sensitive portfolio optimization problems with a jump type stochastic factor model ..... 15
- 7 Kazufumi Fujimoto<sup>#</sup> Expected utility maximization under incomplete information and with (Bank of Tokyo-Mitsubishi UFJ) Cox-processes observations ..... 20
- 8 Teppei Ogihara (Osaka Univ.)<sup>#</sup> Maximum likelihood type and Bayes type estimation for diffusion processes with nonsynchronous observations ..... 20  
Nakahiro Yoshida (Univ. of Tokyo)

**14:30–15:30 Talk invited by Statistics and Probability Section**

Daisuke Shiraishi (Kyoto Univ.)<sup>#</sup> Non-intersecting two-sided random walks

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

Naoyuki Ichihara (Hiroshima Univ.)<sup>#</sup> Asymptotic problems for viscous Hamilton–Jacobi equations and stochastic control

March 21st (Thu) Conference Room IX

**9:00–11:50**

- 9 Satoshi Suzuki (Shimane Univ.)<sup>#</sup> Lagrange-type duality theorem and generator for quasiconvex programming ..... 15  
Daishi Kuroiwa (Shimane Univ.)
- 10 Yusuke Saeki (Shimane Univ.)<sup>#</sup> On constraint qualification for DC programming problems ..... 15  
Daishi Kuroiwa (Shimane Univ.)
- 11 Teruo Tanaka (Hiroshima City Univ.)<sup>#</sup> A partially observable Markov decision process under a fractional criterion ..... 10



- 12 Toshiharu Fujita (Kyushu Inst. of Tech.)<sup>#</sup> Mutually dependent decision processes and Egg Dropping Problem ··· 15
- 13 Sigeo Aki (Kansai Univ.)<sup>#</sup> On distributions of the number of pattern occurrences in undirected  
Kiyoshi Inoue (Seikei Univ.) graphical models ··········· 10
- 14 Hironori Fujisawa (Inst. of Stat. Math.)<sup>#</sup> A family of skew-unimodal distributions with mode invariance ····· 15  
Toshihiro Abe (Tokyo Univ. of Sci.)
- 15 Tamio Koyama (Kobe Univ.)<sup>#</sup> The evaluation of orthant probabilities utilizing the holonomic gradient  
Akimichi Takemura (Univ. of Tokyo) method ··········· 15
- 16 Satoshi Aoki (Kagoshima Univ./JST CREST)<sup>#</sup> Markov chain Monte Carlo methods for the regular two-level fractional  
Hidefumi Osugi (Rikkyo Univ./JST CREST) factorial designs and cut ideals ··········· 20  
Takayuki Hibi (Osaka Univ./JST CREST)
- 17 Sanpei Kageyama (Hiroshima Inst. of Tech.)<sup>#</sup> Complete existence of 3 pairwise additive BIB designs ········· 15  
Kazuki Matsubara (Hiroshima Univ.)
- 18 Hiromu Yumiba (Int. Inst. for Nat. Sci.)<sup>#</sup> Existence conditions for balanced fractional factorial designs of resolu-  
Yoshifumi Hyodo tion V derived from simple arrays with three symbols (II) ········· 15  
(Okayama Univ. of Sci./Int. Inst. for Nat. Sci.)  
Masahide Kuwada (Int. Inst. for Nat. Sci.)

**13:20–14:30**

- 19 Kazuyoshi Yata (Univ. of Tsukuba)<sup>#</sup> Estimation on eigenvalues for high-dimensional data having power  
Makoto Aoshima (Univ. of Tsukuba) spiked model ··········· 15
- 20 Hiroto Hyakutake (Kyushu Univ.)<sup>#</sup> On estimation of parameters in heteroscedastic random effects models  
Kengo Ueda (Kyushu Univ.) ··········· 10
- 21 Shoichi Sasabuchi (Kyushu Univ.)<sup>#</sup> On the powers of tests for homogeneity of regression coefficient vectors  
under synchronized order restrictions ··········· 10
- 22 Fumiya Akashi (Waseda Univ.)<sup>#</sup> Empirical likelihood approach for stable processes ··········· 10  
Masanobu Taniguchi (Waseda Univ.)
- 23 Yan Liu (Waseda Univ.)<sup>#</sup> Hypothesis testing for vector stable processes ··········· 10  
Masanobu Taniguchi (Waseda Univ.)
- 24 Kenta Hamada (Waseda Univ.)<sup>#</sup> Constrained Whittle estimators and shrunk Whittle estimators ····· 10  
Masanobu Taniguchi (Waseda Univ.)

March 22nd (Fri) Conference Room IX

**9:30–12:00**

- 25 Yoshihiko Maesono (Kyushu Univ.)<sup>#</sup> Smoothing of sign test and approximation of its p-value ········· 15  
Lu Mengxin (Kyushu Univ.)
- 26 Gaku Igarashi (Hokkaido Univ.)<sup>#</sup> Re-formulation of the inverse Gaussian, reciprocal inverse Gaussian and  
Yoshihide Kakizawa (Hokkaido Univ.) Birnbaum–Saunders kernel estimators ········· 15

- 27 Shuya Kanagawa (Tokyo City Univ.)<sup>#</sup> Asymptotic expansion for sums of Hilbert space valued random variables and its application to V-statistics ..... 15
- 28 Shintaro Hashimoto (Univ. of Tsukuba)<sup>#</sup> Information inequality for the Bayes risk ..... 15  
Ken-ichi Koike (Univ. of Tsukuba)
- 29 Yiling Lin (Nagoya Univ.)<sup>#</sup> Optimal equi-difference conflict-avoiding codes of length  $n = 2^a 3^b m$  and weight four ..... 18  
Miwako Mishima (Gifu Univ.)  
Masakazu Jimbo (Nagoya Univ.)
- 30 Hiroyuki Kurakami (Tokyo Univ. of Sci.)<sup>#</sup> Generalized marginal cumulative logistic model and decomposition of marginal symmetry for multi-way tables ..... 10  
Kouji Tahata (Tokyo Univ. of Sci.)  
Sadao Tomizawa (Tokyo Univ. of Sci.)
- 31 Yusuke Saigusa (Tokyo Univ. of Sci.)<sup>#</sup> Extended palindromic symmetry models for square contingency tables with ordered categories ..... 10  
Kouji Tahata (Tokyo Univ. of Sci.)  
Sadao Tomizawa (Tokyo Univ. of Sci.)
- 32 Yayoi Tanaka (Tokyo Univ. of Sci.)<sup>#</sup> Sum-symmetry model and its decomposition for square contingency tables with ordered categories ..... 10  
Kouji Yamamoto (Osaka Univ.)  
Sadao Tomizawa (Tokyo Univ. of Sci.)
- 33 Fumika Shimada (Tokyo Univ. of Sci.)<sup>#</sup> Measure for symmetry using collapsed tables in square contingency tables with ordered categories ..... 10  
Kouji Yamamoto (Osaka Univ.)  
Sadao Tomizawa (Tokyo Univ. of Sci.)
- 34 Motoki Ohama (Tokyo Univ. of Sci.)<sup>#</sup> Decompositions of symmetry using generalized linear diagonals-parameter symmetry model for square contingency tables ..... 10  
Kouji Yamamoto (Osaka Univ.)  
Sadao Tomizawa (Tokyo Univ. of Sci.)

**14:30–15:30 Talk invited by Statistics and Probability Section**

- Masanori Sawa (Nagoya Univ.)<sup>#</sup> The theory of cubature formulae and designs in numerical analysis, algebraic combinatorics and mathematical statistics

**15:45–16:45 Award Lecture for 2012 Analysis Prize**

- Masanobu Taniguchi (Waseda Univ.)<sup>#</sup> Non-standard analysis for time series

**Applied Mathematics**

March 20th (Wed) Conference Room VI

**9:30–11:35**

- 1 Atsuhiko Nakamoto (Yokohama Nat. Univ.)<sup>#</sup> General extension to even triangulations ..... 15  
Kenta Ozeki (Nat. Inst. of Information/JST ERATO)  
Kenta Noguchi (Keio Univ.)

2	Atsuhiko Nakamoto (Yokohama Nat. Univ.) Tsubasa Yamaguchi (Yokohama Nat. Univ.)	# Generating theorem for even multi-triangulations on the torus . . . . .	15
3	Atsuhiko Nakamoto (Yokohama Nat. Univ.) Momoko Kobayashi (Yokohama Nat. Univ.)	# On 3-list-coloring of bipartite graphs on closed surfaces . . . . .	15
4	Atsuhiko Nakamoto (Yokohama Nat. Univ.) Kenta Ozeki (Nat. Inst. of Information/JST ERATO) Kenta Noguchi (Keio Univ.)	# A cyclic 4-colorability of graphs on surfaces . . . . .	10
5	Akira Saito (Nihon Univ.)	# The local Chvátal–Erdős condition and 2-factors in graphs . . . . .	15
6	Kenjiro Ogawa (Tokai Univ.) Morimasa Tsuchiya (Tokai Univ.) Satoshi Tagusari (Tokai Univ.)	# On strict-semi-bound graph . . . . .	10
7	Michitaka Furuya (Tokyo Univ. of Sci.)	# Upper bounds on the diameter of domination dot-critical graphs with given connectivity . . . . .	15
8	Kazunori Matsuda (Nagoya Univ.)	* Properties of weakly closed graphs . . . . .	10
<b>14:15–16:25</b>			
9	Ryota Matsubara (Shibaura Inst. of Tech.) Haruhide Matsuda (Shibaura Inst. of Tech.)	# On trees with constraints on the leaf degree . . . . .	10
10	Shoichi Tsuchiya (Tokyo Univ. of Sci.) Michitaka Furuya (Tokyo Univ. of Sci.)	# On forbidden pairs implying a homeomorphically irreducible spanning tree . . . . .	15
11	Midori Kobayashi (Univ. of Shizuoka) Gisaku Nakamura (Univ. of Shizuoka*)	# Dudeney’s Bench problem . . . . .	10
12	Kazuhiko Ushio (Kinki Univ.)	# Balanced $(C_9, C_{12})$ -foil designs and related designs . . . . .	15
13	Kiyoshi Ando (Univ. of Electro-Comm.)	# Some degree sum and forbidden subgraph conditions for $k$ -contractible edges . . . . .	15
14	Iwao Sato (Oyama Nat. Coll. of Tech.)	# A generalized Bartholdi zeta function for a hypergraph . . . . .	15
15	Kenji Kashiwabara (Univ. of Tokyo)	# Fulkerson conjecture for cubic graphs, and clutter theory . . . . .	15
16	Guantao Chen (Georgia State Univ.) Ryo Hazama (Keio Univ.) Katsuhiko Ota (Keio Univ.)	# Clique minors, chromatic numbers for degree sequences in graphs . . . . .	15

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

	Jun Fujisawa (Keio Univ.)	# On the existence of good structures in graphs
--	---------------------------	---

## March 21st (Thu) Conference Room VI

**9:30–11:35**

- 17 Naoki Matsumoto (Yokohama Nat. Univ.)<sup>#</sup> The number of diagonal transformations in pentangulations on the sphere ..... 15
- 18 Masahiro Hachimori (Univ. of Tsukuba) Discrete Voronoi games and related games on graphs, and Nash equilibria ..... 15
- 19 Shinya Fujita (Maebashi Inst. of Tech.)<sup>#</sup> Revisit of Erdős–Gallai’s theorem on the circumference of a graph ..... 10  
Linda Lesniak (Drew Univ.)
- 20 Yoshiyuki Mori (Okayama Univ. of Sci.)<sup>#</sup> A fast calculation of  $a^{p-1} \equiv 1 \pmod{p^2}$  ..... 10  
Ryuichi Sawae (Okayama Univ. of Sci.)  
Daisuke Ishi (Okayama Univ. of Sci.)
- 21 Yoshiyuki Mori (Okayama Univ. of Sci.)<sup>#</sup> On a calculation of the largest prime divisor of an odd perfect number ..... 10  
Ryuichi Sawae (Okayama Univ. of Sci.)  
Miho Aoki (Shimane Univ.)  
Daisuke Ishii (Okayama Univ. of Sci.)
- 22 Yukiko Fukukawa (Osaka City Univ.)<sup>#</sup> Generalization of the Catalan number ..... 10
- 23 Yutaka Sueyoshi (Nagasaki Univ.)<sup>\*</sup> On the maximal value of break intervals of equitable round-robin tournaments with home-away assignments ..... 20  
Ryuichi Harasawa (Nagasaki Univ.)  
Aichi Kudo (Nagasaki Univ.)
- 24 Chie Nara (Tokai Univ.)<sup>#</sup> Affine classes of 3-dimensional parallelehedra —Their parametrization and structure— ..... 15  
Jin-ichi Itoh (Kumamoto Univ.)  
Nikolai Dolbilin (Steklov Math. Inst.)

**13:15–14:15 Talk invited by Applied Mathematics Section**

- Hayato Chiba (Kyushu Univ.)<sup>#</sup> A spectral theory of linear operators on a Gelfand triplet and its application to the dynamics of coupled oscillators

## March 22nd (Fri) Conference Room VI

**9:00–11:45**

- 25 Hirota Ebisui (Oval Research Center)<sup>#</sup> Example of error and difficulty in hard-soft PG manage and color-phase tecnology by Pachikuri multistructured mapping form using a sparial multi-phase positon in stratified sositety ..... 10
- 26 Shunzi Horiguchi (Niigata Sangyo Univ.)<sup>#</sup> On relations between the enhancement of Tsuchikura–Horiguchi’s (Yoshimasu Murase–Newton type’s) recurrence formulas concerning algebraic equations and Horner method ..... 15
- 27 Shan Der Lin (Chung Yuan Christian Univ.)<sup>#</sup> Laplace transform of the fractional derivative and its applications ..... 15  
Chia-Hung Lu (Chung Yuan Christian Univ.)
- 28 Fumio Nakajima (Iwate Univ.)<sup>\*</sup> A mathematical approach to the policy of Atomic energy ..... 15
- 29 Takehiko Kinoshita (Kyoto Univ.)<sup>#</sup> A numerical verification of the invertivity for elliptic partial differential operators ..... 15  
Yoshitaka Watanabe (Kyushu Univ.)  
Mitsuhiro T. Nakao (Sasebo Nat. Coll. of Tech.)

- 30 Akitoshi Takayasu (Waseda Univ.)<sup>#</sup> Verified computations for semilinear elliptic boundary value problems  
Xuefeng Liu (Waseda Univ.) on arbitrary polygonal domains ..... 15  
Shin'ichi Oishi  
(Waseda Univ./JST CREST)
- 31 Mikio Murata<sup>#</sup> The direct method to transform parabolic differential equations into  
(Tokyo Univ. of Agri. and Tech.) cellular automata ..... 15
- 32 Koya Sakakibara (Meiji Univ.)<sup>#</sup> An application of a method approximating holomorphic functions by  
Masashi Katsurada (Meiji Univ.) linear combinations of  $1/(z - \zeta)$ : calculating the inverse of conformal  
Hidenori Ogata mappings ..... 15  
(Univ. of Electro-Comm.)
- 33 Takashi Sakajo<sup>#</sup> Word representation of streamline topologies for structurally stable  
(Hokkaido Univ./JST CREST) vortex flows in multiply connected domains ..... 15  
Tomoo Yokoyama  
(Hokkaido Univ./JST CREST)

**14:15–16:30**

- 34 Takahito Kashiwabara (Univ. of Tokyo)<sup>#</sup> Some remarks on Navier–Stokes equations with leak boundary condition  
..... 15
- 35 Masahisa Tabata (Waseda Univ.)<sup>#</sup> Equivalence of an upwind FEM and a characteristics FEM ..... 15
- 36 Kenta Uemichi (Kwansei Gakuin Univ.)<sup>#</sup> A mathematical model for comb construction of honeybees ..... 15  
Koichi Osaki (Kwansei Gakuin Univ.)
- 37 Masaji Watanabe (Okayama Univ.)<sup>#</sup> Study on microbial depolymerization processes of exogenous type ..... 15  
Fusako Kawai (Kyoto Inst. Tech.)
- 38 Hideki Murakawa (Kyushu Univ.)<sup>#</sup> On spatiotemporal patterns in a cell population model ..... 15  
Arnaud Ducrot (Univ. Bordeaux 2)  
Frank Le Foll (Univ. de Le Havre)  
Pierre Magal (Univ. Bordeaux 2)  
Jennifer Pasquier (Univ. de Le Havre)  
Glenn F. Webb (Vanderbilt Univ.)
- 39 Hiroko Yamamoto (Tohoku Univ.)<sup>#</sup> Concentration point in the ground state of a reaction-diffusion equation  
Izumi Takagi (Tohoku Univ.) in heterogeneous media ..... 15
- 40 Kazuyuki Yagasaki (Hiroshima Univ.)<sup>#</sup> Existence of horseshoe dynamics in an asymmetric heavy top ..... 15  
G. H. M. van der Heijden  
(Univ. College London)
- 41 Yasuaki Hiraoka (Kyushu Univ.)<sup>#</sup> Protein structure analysis and persistent homology ..... 15

**16:45–17:45 Talk invited by Applied Mathematics Section**

- Takeshi Ohtsuka (Gunma Univ.)<sup>#</sup> A level set formulation for evolving spirals and their behavior in spiral  
crystal growth
-

# Topology

March 20th (Wed) Conference Room II

## 9:30–12:00

- |    |   |   |    |
|----|---|---|----|
| 1  | Shin Satoh (Kobe Univ.) *<br>Ryuji Higa (Kobe Univ.)<br>Yasutaka Nakanishi (Kobe Univ.)<br>Takuto Yamamoto (Kobe Univ.) | OU sequence of knot diagram and its application . . . . .   | 10 |
| 2  | Taizo Kanenobu (Osaka City Univ.) #<br>Hiromasa Moriuchi (Osaka City Univ.)   | Links which are related by a band surgery . . . . .   | 10 |
| 3  | Takuji Nakamura (Osaka Electro-Comm. Univ.) #<br>Yasutaku Nakanishi (Kobe Univ.)<br>Shin Satoh (Kobe Univ.)             | The number of colors in a Fox coloring . . . . .  | 10 |
| 4  | Makoto Ozawa (Komazawa Univ.) #   | Coexistence of coiled surfaces and spanning surfaces for knots and links . . . . .                            | 15 |
| 5  | Makoto Ozawa (Komazawa Univ.) #<br>Kazuto Takao (Osaka Univ.)   | A destabilized bridge sphere of bridge number arbitrarily higher than the bridge number of the knot . . . . . | 10 |
| 6  | Masakazu Teragaito (Hiroshima Univ.) #<br>Ryoto Hakamata (Hiroshima Univ.)  | Left-orderable fundamental group and Dehn surgery on twist knots . . .  | 10 |
| 7  | Kazuhiro Ichihara (Nihon Univ.) #<br>Hidetoshi Masai (Tokyo Tech)   | Exceptional surgeries on alternating knots . . . . .  | 10 |
| 8  | Toshifumi Tanaka (Gifu Univ.) #   | On the maximal Thurston–Bennequin number for knots in a spatial graph . . . . .                               | 10 |
| 9  | Isamu Miyato (Nagoya Inst. of Tech.) #  | On a certain parity of the Alexander polynomial . . . . .   | 10 |
| 10 | Sakie Suzuki (Kyoto Univ.) #  | Bing doubling and the colored Jones polynomial . . . . .  | 10 |
| 11 | Takefumi Nosaka (Kyushu Univ.) #  | Topological interpretation of link invariants from finite quandles I; main theorem . . . . .                  | 10 |
| 12 | Takefumi Nosaka (Kyushu Univ.) #  | Topological interpretation of link invariants from finite quandles II; some calculations . . . . .            | 10 |
| 13 | Takefumi Nosaka (Kyushu Univ.) #  | On third homologies of groups and of quandles via Dijkgraaf–Witten invariant and Inoue–Kabaya map . . . . .   | 10 |
| 14 | Rei Inoue (Chiba Univ.) #<br>Kazuhiro Hikami (Kyushu Univ.)   | Cluster algebra and complex volume of 2-bridge links . . . . .  | 15 |

## 14:30–15:30 Talk invited by Topology Section

- Takahiro Kitayama (Univ. of Tokyo) # Torsion functions on character varieties and an extension of Culler–Shalen theory

## 15:45–16:45 Talk invited by Topology Section

- Makoto Sakuma (Hiroshima Univ.) # Simple loops on bridge spheres and Heegaard surfaces

## March 21st (Thu) Conference Room II

**9:30–12:00**

- 15 Hiroki Takahashi (Kyoto Univ.)\* Emergence of attractors at the first bifurcation of the Hénon family ..... 15
- 16 Katsuhisa Koshino (Univ. of Tsukuba)\* A Hilbert cube compactification of a function space into a 1-dimensional  
Katsuro Sakai (Univ. of Tsukuba) locally compact AR with the compact-open topology ..... 20
- 17 Wataru Yuasa (Tokyo Tech)\* Hyperelliptic Goldman Lie algebra and its abelianization ..... 15
- 18 Yusuke Kuno (Tsuda Coll.)\* An extension of the Earle class to the Ptolemy groupoid ..... 10  
Robert Penner (Aarhus Univ./Caltech)  
Vladimir Turaev (Indiana Univ.)
- 19 Takuya Sakasai (Univ. of Tokyo)# Computations of Euler characteristics of graph homologies in low  
Masaaki Suzuki (Akita Univ.) weights ..... 15  
Shigeyuki Morita (Univ. of Tokyo\*)
- 20 Tatsuro Shimizu (Univ. of Tokyo)# An extension of degree one finite type invariant for rational homology  
3-sphres to correspondences. .... 15
- 21 Tomohiko Ishida (Univ. of Tokyo)# Quasi-morphisms on the group of area-preserving diffeomorphisms of  
the 2-disk ..... 10
- 22 Hidetoshi Masai (Tokyo Tech)# On commensurability of fibrations on a hyperbolic 3-manifold ..... 10
- 23 Kenta Hayano (Osaka Univ.)# Multisections of Lefschetz fibrations via mapping class groups ..... 15  
Refik İnanç Baykur  
(Max Planck Inst. for Math./Brandeis Univ.)
- 24 Naoyuki Monden (Kyoto Univ.)# Lefschetz fibrations with small slope ..... 15

**13:30–14:30 Talk invited by Topology Section**

- Kouichi Yasui (Hiroshima Univ.)# Corks and exotic 4-manifolds

## March 22nd (Fri) Conference Room II

**10:15–11:50**

- 25 Tadayuki Haraguchi \* Long exact sequences for de Rham cohomology of diffeological spaces  
(Internat. Pacific Univ.) ..... 15
- 26 Masaki Nakagawa (Okayama Univ.)\* On the generalization of the Schur  $P$ ,  $Q$ -functions which give the basis  
Hiroshi Naruse (Okayama Univ.) for the generalized (co)homology of the loop spaces on classical groups  
..... 15
- 27 Takahiro Matsushita (Univ. of Tokyo)\* Fundamental groups of neighborhood complexes ..... 10
- 28 Yusuke Kawamoto \* Higher homotopy commutativity of  $H$ -spaces and the cyclohedra ..... 10  
(Nat. Defense Acad. of Japan)
- 29 Miho Hatanaka (Osaka City Univ.)# The uniqueness of decompositions of a (topological) toric manifold ... 10
- 30 Yukiko Fukukawa (Osaka City Univ.)# The ring structure of the equivariant cohomology ring of the Peterson  
Megumi Harada (MacMaster Univ.) variety ..... 10  
Mikiya Masuda (Osaka City Univ.)

31	Takahito Naito (Shinshu Univ.) <sup>#</sup>	On the loop coproducts of the relative loop spaces . . . . .	10
32	Kohei Tanaka (Shinshu Univ.) <sup>#</sup>	A model structure on the category of small categories related to coverings . . . . .	15
<b>15:00–16:35</b>			
33	Atsuhide Mori (Osaka City Univ.) <sup>*</sup>	High dimensional confoliations and leafwise symplectic foliations . . . . .	15
34	Tomonori Fukunaga (Hokkaido Univ.) <sup>*</sup> Masatomo Takahashi (Muroran Inst. of Tech.)	Evolute of fronts in the Euclidean plane . . . . .	20
35	Shunsuke Ichiki (Yokohama Nat. Univ.) <sup>#</sup>	Distance-squared mappings . . . . .	15
36	Tomoo Yokoyama (Hokkaido Univ.) <sup>#</sup>	Almost periodic, recurrent, non-wandering properties for flows and foliations . . . . .	15
37	Shin Kiriki (Kyoto Univ. of Edu.) <sup>#</sup> Teruhiko Soma (Tokyo Metro. Univ.)	$C^2$ -robust heterodimensional tangencies . . . . .	15
38	Yusuke Mizota (Kyushu Univ.) <sup>#</sup>	Improving estimate of the highest degree of liftable vector fields . . . . .	15

---

## Infinite Analysis

March 22nd (Fri)      Conference Room VII

### 9:30–11:45

1	Kanehisa Takasaki (Kyoto Univ.) <sup>#</sup>	Melting crystal model and Ablowitz–Ladik hierarchy . . . . .	15
2	Hajime Nagoya (Kobe Univ.) <sup>#</sup>	From Gauss to quantum Painlevé . . . . .	20
3	Shin Isojima (Hosei Univ.) <sup>#</sup> Junkichi Satsuma (Aoyama Gakuin Univ.) Tetsuji Tokihiro (Univ. of Tokyo)	Ultradiscrete Ai function with parity variables and the number of restricted partitions . . . . .	15
4	Gen Kuroki (Tohoku Univ.) <sup>#</sup>	Quantized birational action of the product $\widetilde{W}(A_{m-1}^{(1)}) \times \widetilde{W}(A_{n-1}^{(1)})$ of the extended affine Weyl groups for coprime $m, n$ . . . . .	20
5	Yoko Shigyo (Tsuda Coll.) <sup>#</sup>	On addition formulae of BKP hierarchy . . . . .	15
6	Tetsu Masuda (Aoyama Gakuin Univ.) <sup>#</sup>	A $q$ -analogue of Sasano systems . . . . .	15
7	Takao Suzuki (Kinki Univ.) <sup>#</sup>	6-dimensional Painlevé equations and their particular solutions in terms of rigid equations . . . . .	20
8	Yusuke Ikawa (Kobe Univ.) <sup>#</sup>	Hypergeometric solutions for the $q$ -Painlevé equation of type $E_6^{(1)}$ by Padé method . . . . .	15



**14:15–15:35**

- 9 Junichi Shiraishi (Univ. of Tokyo) # A conjecture about Macdonald polynomials of type  $B_2$  ..... 15
- 10 Masato Okado (Osaka Univ.) # Quantum coordinate ring and 3D reflection equation ..... 20  
Atsuo Kuniba (Univ. of Tokyo)
- 11 Katsuyuki Naoi (Univ. of Tokyo) # Graded limits of minimal affinizations over a quantum loop algebra  
..... 15
- 12 Yosuke Saito (Tohoku Univ.) # Elliptic Ding–Iohara algebra and the free field realization of the elliptic  
Macdonald operator ..... 15
- 13 Yosuke Saito (Tohoku Univ.) # Elliptic  $q$ -Virasoro algebra and its free field realization ..... 15

**15:45–16:45 Talk invited by Infinite Analysis Special Session**

- Zengo Tsuboi # Baxter  $Q$ -operators and tau-function for quantum integrable systems  
(Humboldt-Univ. zu Berlin)

March 23rd (Sat) Conference Room VII

**9:45–11:40**

- 14 Diogo Kendy Matsumoto # Idempotent dynamical braiding maps and dynamical semigroups with  
(Waseda Univ.) left unit ..... 15  
Youichi Shibukawa (Hokkaido Univ.)
- 15 Choon-Lin Ho (Tamkang Univ.) # Confluence of apparent singularities in multi-indexed orthogonal poly-  
Ryu Sasaki (Kyoto Univ.) nomials: the Jacobi case ..... 15  
Kouichi Takemura (Chuo Univ.)
- 16 Genki Shibukawa (Kyushu Univ.) # Operator orderings and Meixner–Pollaczek polynomials ..... 15
- 17 Yoshiaki Goto (Hokkaido Univ.) # Twisted period relation for Lauricella's  $F_C$  ..... 15
- 18 Kohei Motegi # Quantum inverse scattering approach to the totally asymmetric simple  
(Okayama Inst. for Quant. Phy.) exclusion process ..... 15  
Kazumitsu Sakai (Univ. of Tokyo)  
Jun Sato (Ochanomizu Univ.)
- 19 Shu Oi (Rikkyo Univ.) # The Riemann–Hilbert problem and the connection problem of the KZ  
Kimio Ueno (Waseda Univ.) equation ..... 20
- 20 Shu Oi (Rikkyo Univ.) # The hexagon relations for dilogarithms and the Riemann–Hilbert prob-  
Kimio Ueno (Waseda Univ.) lem ..... 20

**14:30–15:30 Talk invited by Infinite Analysis Special Session**

- Kentaro Nagao (Nagoya Univ.) Quivers with potential, 3d Calabi–Yau categories and the cohomological  
Hall algebras
-

### Information for Speakers

The Organizing Committee apologizes that it had to cut the duration of contributed talks because of technical reasons. Since the schedule is very tight, we ask the speakers to strictly keep time. A bell will be rung when 2/3 of the assigned time has passed. A second bell will be rung as soon as the time is up, and the speaker has to leave the stage. The talks with \* mark are presented through document camera, while ‡ marks denote PC presentations. The speakers with ★ marks are professors emeriti. If you find anything wrong in the program, do not hesitate to inform the Chair of Organizing Committee by sending e-mail to the address [program@mathsoc.jp](mailto:program@mathsoc.jp).

Each conference room is equipped with a black board, a document camera, and a projector for PC presentation. You are asked to use your own PC for a PC presentation. The time for connecting your PC to the projector is included in the assigned duration of your talk. You are recommended to check beforehand if your PC can be connected to the projector in the conference room. We strongly advise you to prepare an alternative method to present your talk such as printed sheets for the document camera in case your PC does not fit to the projector.

### Information for Participants

Smoking is not allowed in any building on the Kyoto University.

#### Using Wi-Fi Networks

Kyoto University is a partner of the eduroam activity in Japan. It provides you Wi-Fi connection to the Internet connection by your eduroam ID in a limited number of places such as the COOP Cafeteria in Yoshida South Campus. You can find a brief account for the service on the URL

<http://mathsoc.jp/en/meeting/kyoto13mar-network.html>

### Official Party

Time: March 21st (Thu), 18:00–20:00

Venue: Clock Tower Centennial Hall, International Conference Hall (2F)

Participants are asked to pay 5,000 JPY at the party.

## Directions

### 2013 MSJ ANNUAL MEETING

Dates : March 20th (Wed)–23rd (Sat), 2013  
 Venue : Kyoto University  
 Address : Yoshida Nihonmatsu-cho, Sakyo-ku, Kyoto  
 Contact to : Department of Mathematics and RIMS, Kyoto Univeristy  
 Kitashirakawa Oiwake-cho, Sakyo-ku, Kyoto  
 E-mail [kyoto13mar@mathsoc.jp](mailto:kyoto13mar@mathsoc.jp)  
 During session : Phone +81 (0) 75 753 2035  
 Fax +81 (0) 75 753 2035  
 Web Site : <http://mathsoc.jp/en/meeting/kyoto13mar/>

## Conference Rooms

	Place	Research Sections
Conference Room I	Yoshida-S Cmps Bldg No. 4, Rm 4C30	Algebra, Featured Invited Talks
Conference Room II	Yoshida-S Cmps Bldg No. 4, Rm 4C31	Topology
Conference Room III	Yoshida-S Cmps Bldg No. 4, Rm 4C21	Geometry, Featured Invited Talks
Conference Room IV	Yoshida-S Cmps Bldg No. 4, Rm 4C11	Functional Equations, Featured Invited Talk
Conference Room V	Acad Ctr for Computing and Media Studies, B1 Lecture Room	Functional Analysis
Conference Room VI	Yoshida-S Cmps Acad Ctr Bldg, Rm CW41	Applied Mathematics
Conference Room VII	Yoshida-S Cmps Acad Ctr Bldg, Rm CW31	Foundation of Mathematics and His- tory of Mathematics, Infinite Analysis
Conference Room VIII	Yoshida-S Cmps Acad Ctr Bldg, Rm CS11	Real Analysis, Complex Analysis
Conference Room IX	Yoshida-S Cmps Acad Ctr Bldg, Rm CS01	Statistics and Probability
Plenary Talks	Clock Tower Centennial Hall, Centennial Hall (1F)	
Open Lectures for Citizens	Yoshida-S Cmps Bldg No. 4, Rm 4C11	

Abbreviation rule for conference rooms: C=Common=共 (Kyo), E=East=東 (Higashi), W=West=西 (Nishi), S=South=南 (Minami), N=North=北 (Kita)

You can find more detailed accounts for the conference rooms at the URL

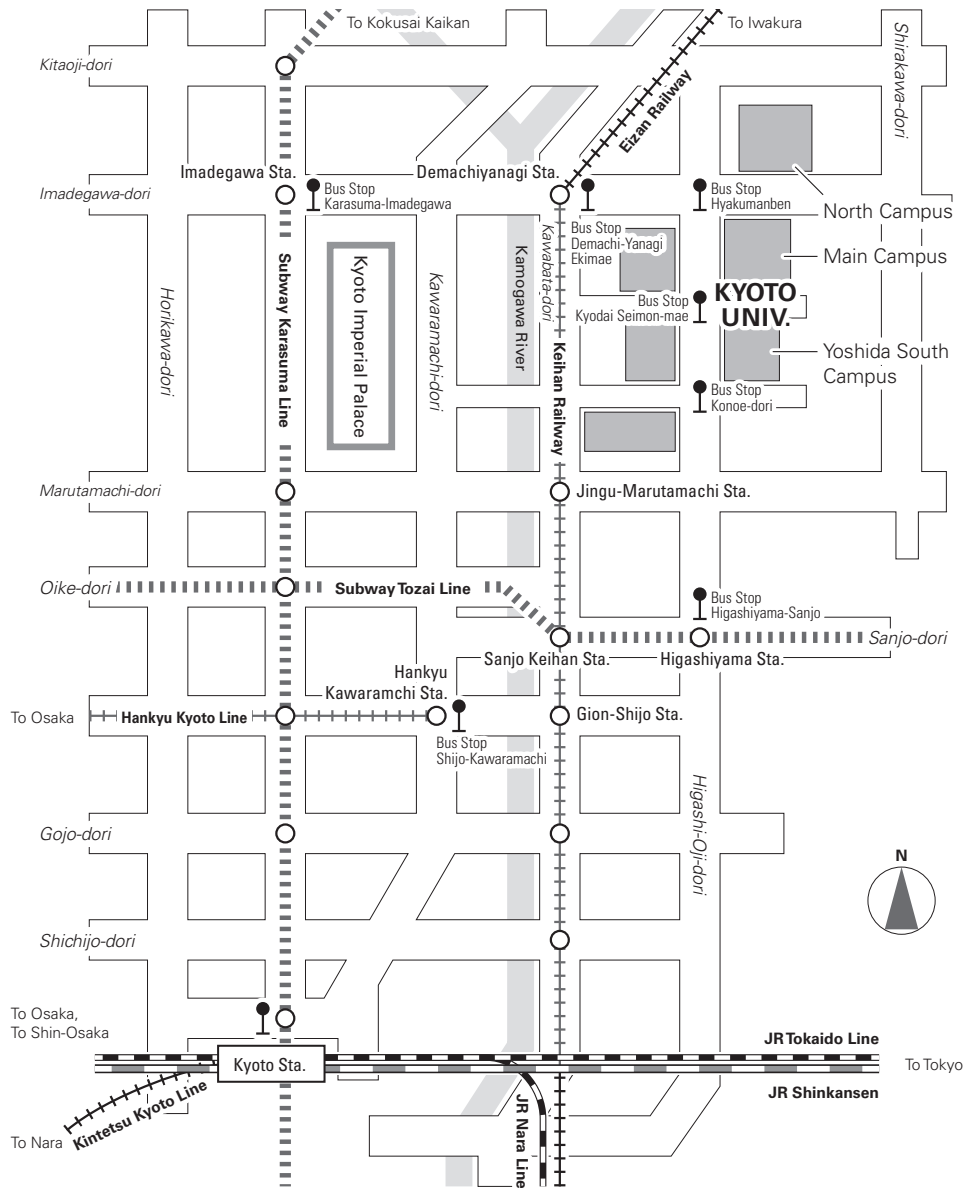
<http://mathsoc.jp/en/meeting/kyoto13mar/>

## Other Rooms

Extended Abstracts and Membership Discussion Rooms	Grad Sch of Human and Environmental Studies Bldg, Rm 226 Yoshida-S Cmps Bldg No. 4, Rm 4C22, Yoshida-S Cmps Acad Ctr Bldg, Rm CS21
Book Display and Sale	Yoshida-S Cmps Acad Ctr Bldg, Rm CN11/CN12
Executive Committee, MSJ President	Grad Sch of Human and Environmental Studies Bldg, Rm 222
Official Party	Clock Tower Centennial Hall, Internationa Conference Hall (2F)

# Access Map

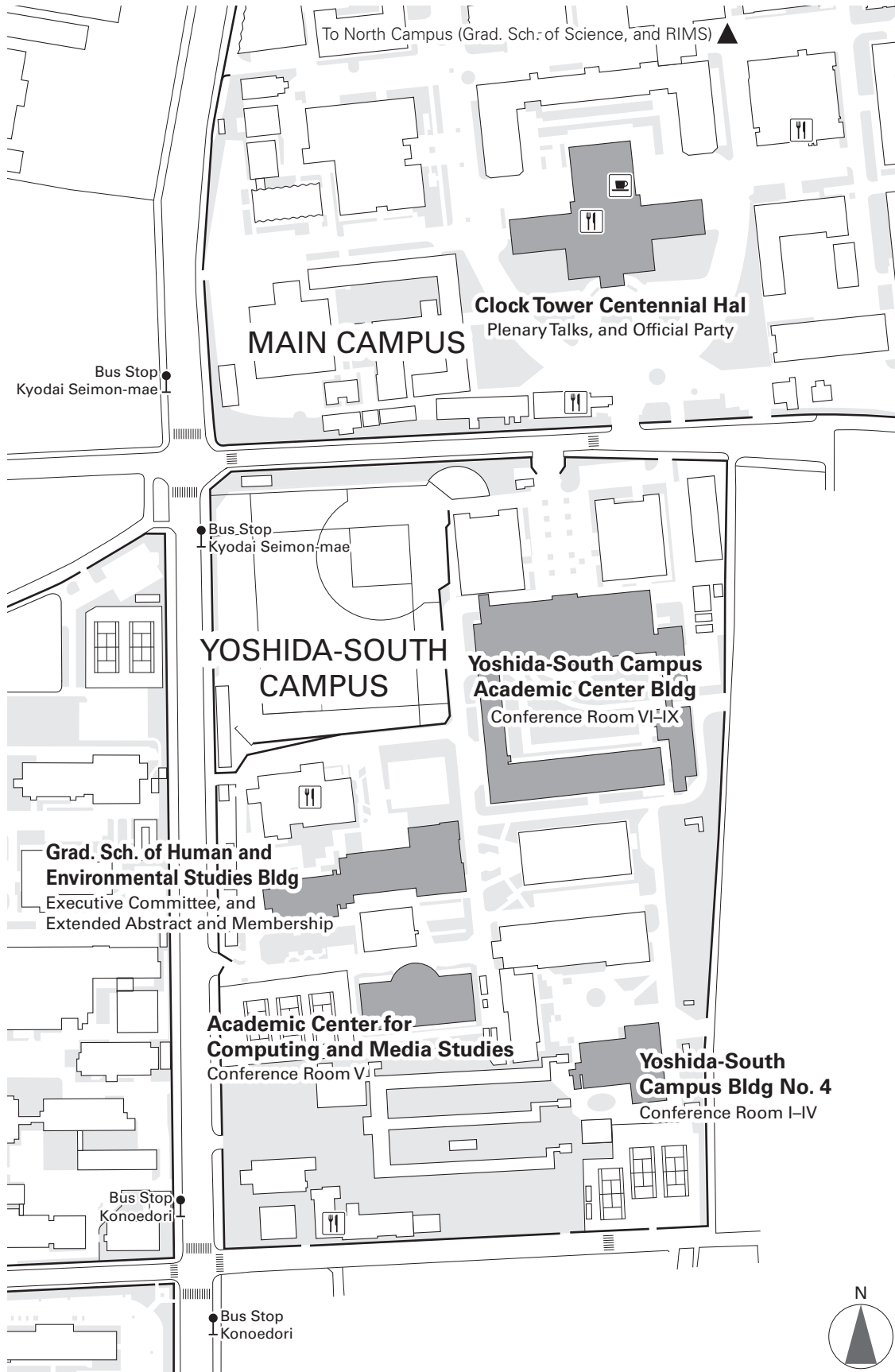
From Kyoto station to Kyoto University



Station	Bus Stop (get on)	Bus Stop (get off)
Kyoto Station (JR / Kintetsu Railway)	Kyoto Station — D2 Route 206: Higashiyama-dori – Kitaoji-dori Bus Terminal	Kyodai Seimon-mae
Kawaramachi Station (Hankyu Railway)	Shijo-Kawaramachi — F Route 201: Gion – Hyakumanben Route 31: Kumano – Iwakura	
Demachiyanagi Station (Keihan Railway)	Demachi-Yanagi Ekimae Route 201: Gion – Mibu	
Imadegawa Station (Subway Karasuma Line)	Karasuma-Imadegawa Ekimae Route 201: Hyakumanben – Gion	
Higashiyama Station (Subway Tozai Line)	Higashiyama Sanjo Route 201: Hyakumanben – Senbon-Imadegawa Route 206: Takano – Senbon-Kitaoji Route 31: Shugakuin – Iwakura	

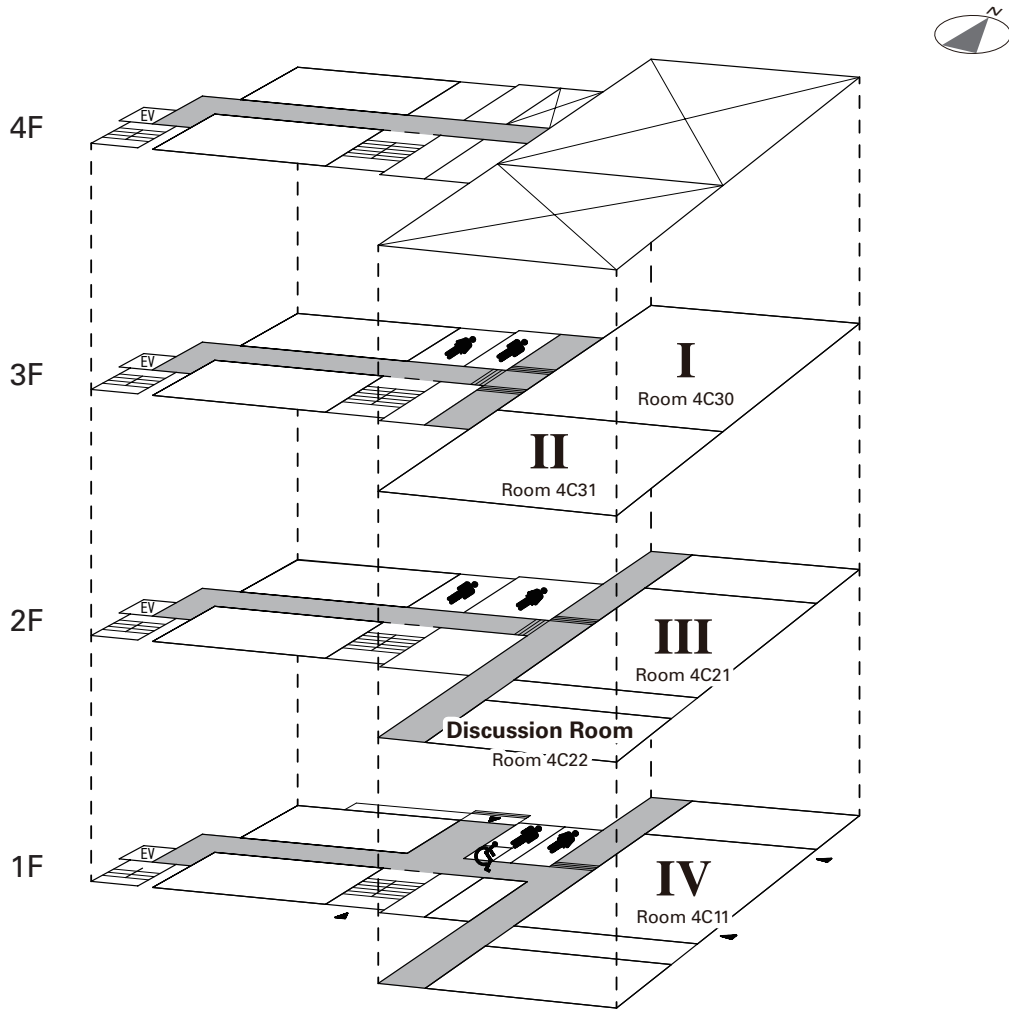
To use the bus within the city centre, the fare is 220yen.

Kyoto University, Yoshida-South Campus, and part of Main Campus

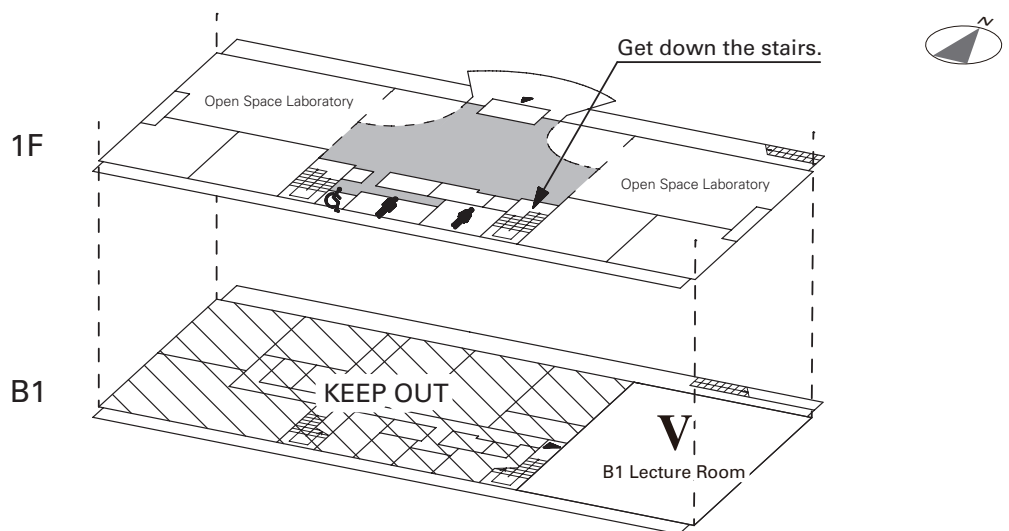


# Floor Maps

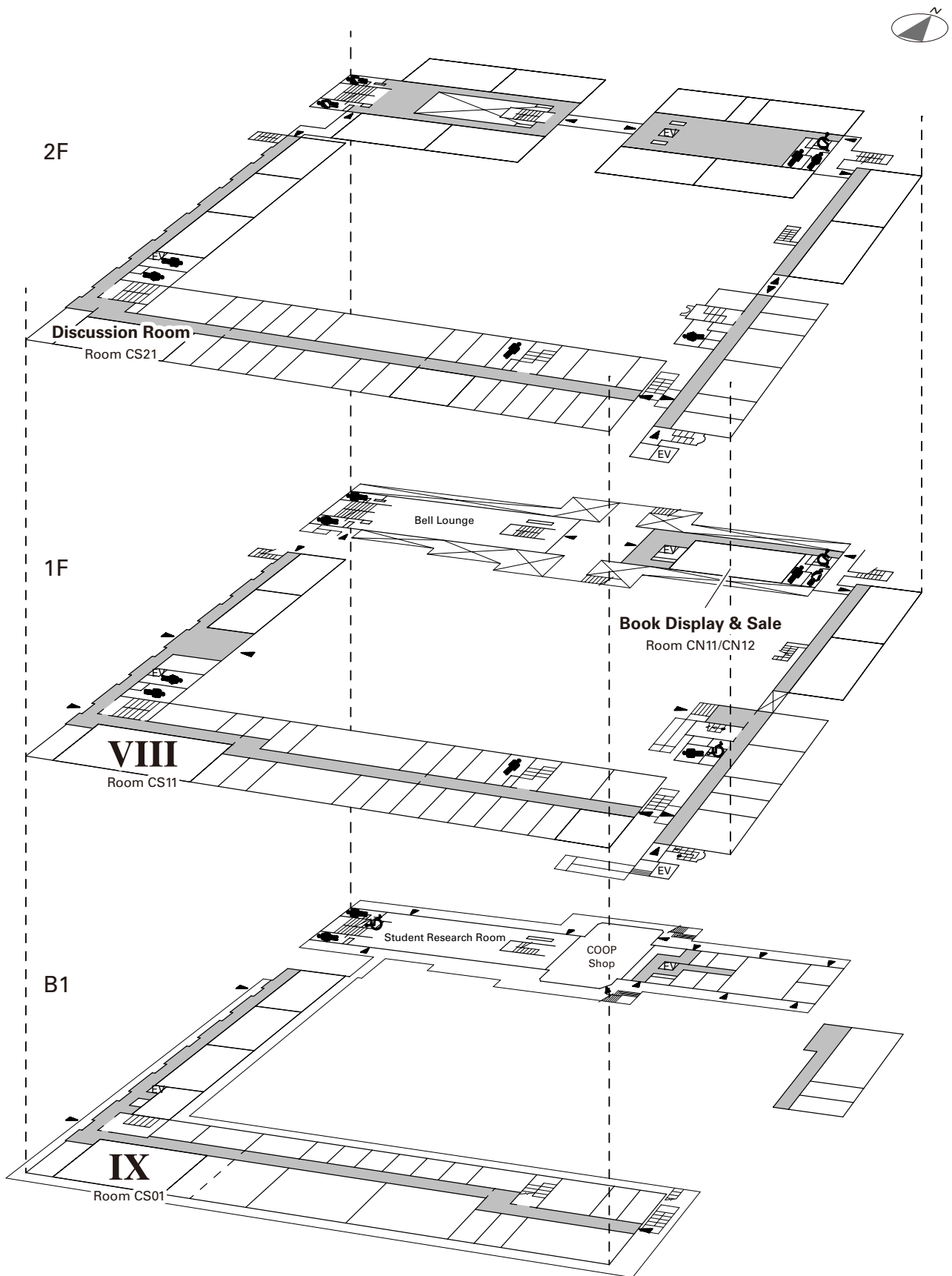
## Yoshida-South Campus Bldg No. 4



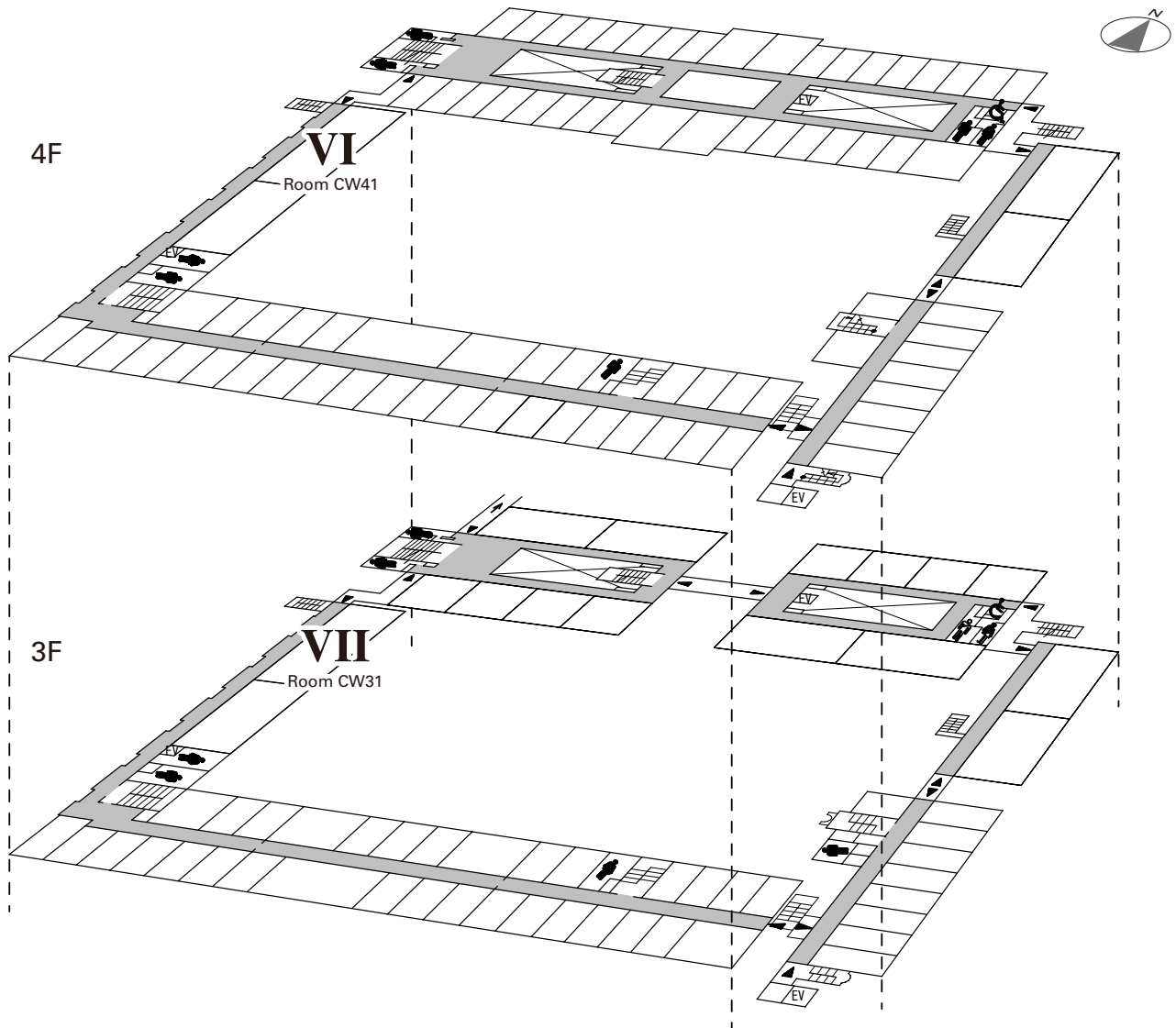
## Academic Center for Computing and Media Studies



# Yoshida-South Campus Academic Center Bldg (B1-2F)



### Yoshida-South Campus Academic Center Bldg (3F-4F)





### Graduate School of Human and Environmental Studies Bldg

