

# Functional Equations

March 21st (Sat) Conference Room Va

## 9:15–12:00

- 05-01-0067  
1 Mika Tanda (Kinki Univ.) The hypergeometric function and WKB solutions ..... 10  
Takashi Aoki (Kinki Univ.)
- 05-01-0057  
2 Toshinori Takahashi (Kinki Univ.) Exact WKB analysis of Schrödinger equation with a Stokes curve of  
Kohei Iwaki (Kyoto Univ.) loop type ..... 10  
Takashi Aoki (Kinki Univ.)
- 05-01-0063  
3 Yoshiaki Goto (Kobe Univ.) Contiguity relations of Lauricella's  $F_D$  and contingency tables ..... 10
- 05-01-0059  
4 Youko Umeta (Tokyo Univ. of Sci.) On the monodromy structure of holonomic D-modules associated with  
Shinichi Tajima (Univ. of Tsukuba) simple line singularities ..... 10  
Toshinori Oaku  
(Tokyo Woman's Christian Univ.)
- 05-01-0014  
5 Masafumi Yoshino (Hiroshima Univ.) behavior of the system for three species with evolutionary character ... 10  
Yoshinari Tanaka  
(Nat. Inst. for Environ. Stud.)
- 05-01-0017  
6 Masafumi Yoshino (Hiroshima Univ.) Borel summability of formal solutions of system of semilinear partial  
Hiroschi Yamazawa differential equations ..... 10  
(Shibaura Inst. of Tech.)
- 05-01-0060  
7 Yoshikatsu Sasaki (Hiroshima Univ.) Nonintegrability of Hamiltonian system perturbed from integrable sys-  
Yoshino Masafumi (Hiroshima Univ.) tem with two singular points ..... 10
- 05-01-0020  
8 Kodai Fujimoto (Osaka Pref. Univ.) Existence of limit cycles for Liénard type systems with mean curvature  
Naoto Yamaoka (Osaka Pref. Univ.) operator ..... 10
- 05-01-0058  
9 Tomoyuki Tanigawa (Kumamoto Univ.) Existence of positive solutions of fourth order sub-half-linear differential  
equations ..... 10
- 05-01-0005  
10 Tetsutaro Shibata (Hiroshima Univ.) Global and local behavior of oscillatory bifurcation curve ..... 10
- 05-01-0039  
11 Hiroyuki Usami (Gifu Univ.)\* Asymptotic behavior of solutions of a Lanchester-type model ..... 10  
Huyen Trang Tran Thi (Gifu Univ.)
- 05-01-0025  
12 Seiji Saito (Doshisha Univ.) On Graef–Qian's theorem of difference equations ..... 10
- 05-01-0047  
13 Motohiro Sobajima (Univ. of Salento) Analytic semigroups generated by  $|x|^\alpha \Delta$  with singular lower-order terms  
Giorgio Metafune (Univ. of Salento) ..... 10  
Noboru Okazawa (Tokyo Univ. of Sci.)  
Chiara Spina (Univ. of Salento)
- 05-01-0049  
14 Motohiro Sobajima (Univ. of Salento) Spectral properties of non-selfadjoint extensions of Calogero Hamilton-  
Giorgio Metafune (Univ. of Salento) ian ..... 10
- 05-01-0044  
15 Fumihiko Hirose (Yamaguchi Univ.) On the energy estimates of the wave equation with time dependent  
Marcelo Rempel Ebert propagation speed asymptotically monotone functions ..... 10  
(Univ. de São Paulo)  
Fitriana Laila (Yamaguchi Univ.)

**14:15–16:30**

05-01-0031

16 Wataru Ichinose (Shinshu Univ.) The Feynman path integral for the Dirac equation (1), the electron going across the infinite past and future ..... 10

05-01-0032

17 Wataru Ichinose (Shinshu Univ.) The Feynman path integral for the Dirac equation (2), Causality (finite propagation property not exceeding  $c$ ) ..... 10

05-01-0036

18 Sojiro Murai (Univ. of Electro-Comm.) \* Kiyoshi Mochizuki (Tokyo Metro. Univ.\*/Chuo Univ.) Smoothing and Strichartz estimates for wave equation in an exterior domain ..... 10

05-01-0018

19 Masato Hashizume (Osaka City Univ.) Futoshi Takahashi (Osaka City Univ.)  $L^p$ -Lyapunov inequality on Neumann boundary condition ..... 10

05-01-0022

20 Shinji Adachi (Shizuoka Univ.) Tatsuya Watanabe (Kyoto Sangyo Univ.) Asymptotic uniqueness of ground states of quasilinear elliptic equations with  $H^1$ -supercritical exponent ..... 10

05-01-0068

21 Yohei Sato (Saitama Univ.) \* Masataka Shibata (Tokyo Tech) Remark on Nehari type condition for a least energy solution of semi-linear elliptic equations ..... 10

05-01-0004

22 Kenichiro Umezū (Ibaraki Univ.) \* Humberto Ramos Quoirin (Univ. de Santiago de Chile) On the role of indefinite weights in the positive solutions set for an elliptic boundary value problem with convex-concave mixed nonlinearity ..... 10

05-01-0071

23 Ryo Takahashi (Osaka Univ.) Takashi Suzuki (Osaka Univ.) Xiao Zhang (Osaka Univ.) Extremal boundedness of a variational functional in point vortex mean field theory associated with probability measures ..... 10

05-01-0061

24 Kotaro Watanabe (Nat. Defense Acad. of Japan) Naoki Shioji (Yokohama Nat. Univ.)  $L^p$  elastic closed curves and flat-core solutions on  $\mathbf{S}^2(G)$  ..... 10

05-01-0013

25 Atsushi Kosaka (Osaka City Univ.) Yasuhito Miyamoto (Univ. of Tokyo) Structure of solutions to the Emden–Fowler equation on a spherical cap ..... 10

05-01-0003

26 Yasuhito Miyamoto (Univ. of Tokyo) Nonradial maximizers for a Hénon type problem and Liouville–Gel’fand problem ..... 10

05-01-0010

27 Ryuji Kajikiya (Saga Univ.) Symmetric mountain pass lemma and sublinear elliptic equations ..... 10**16:50–17:50 Talk Invited by Functional Equations Section**

05-02-0002

Kazuyuki Yagasaki (Kyoto Univ.) Existence and bifurcation of positive radial solutions in elliptic equations

March 22nd (Sun) Conference Room Vb

**9:15–12:00**

05-01-0019

28 Toshiharu Kawasaki (Tamagawa Univ.) Masashi Toyoda (Tamagawa Univ.) Fixed point theorem and fractional differential equation with multiple delays ..... 10

05-01-0078

29 Tatsuya Miura (Univ. of Tokyo) Singular limit of an adhesive obstacle problem ..... 10

05-01-0021

30 Toshikazu Kuniya (Kobe Univ.) Asymptotic behavior of age-structured SIS epidemic models with spatial heterogeneity ..... 10

05-01-0002

31 Saori Nakamori (Hiroshima Univ.) Kazuhiro Takimoto (Hiroshima Univ.) Bernstein type theorem for the parabolic  $k$ -Hessian equation ..... 10

05-01-0076	32	Masato Iida (Univ. of Miyazaki) Hideki Murakawa (Kyushu Univ.) Harunori Monobe (Meiji Univ.) Hirokazu Ninomiya (Meiji Univ.)	Generalization of fast reaction limit for a two-component system . . . . .	10
05-01-0054	33	Hiroshi Matsuzawa (Numazu Nat. Coll. of Tech.) Yuki Kaneko (Waseda Univ.)	Spreading speed and sharp asymptotic profiles of solutions in free boundary problems for nonlinear advection-diffusion equations . . . . .	10
05-01-0033	34	Tatsuki Mori (Ryukoku Univ.) Kousuke Kuto (Univ. of Electro-Comm.) Tohru Tsujikawa (Univ. of Miyazaki) Shoji Yotsutani (Ryukoku Univ.)	Profile of global bifurcation sheet and diagrams of a reaction-diffusion model for cell polarization . . . . .	10
05-01-0009	35	Noriaki Umeda (Meiji Univ.)	On blow-up at space infinity for semilinear heat equations with inhomogeneous terms . . . . .	10
05-01-0045	36	Hiroshi Kamiya (Osaka Pref. Univ.)	Life span of solutions for a semilinear heat equation with a large exponent . . . . .	10
05-01-0035	37	Junichi Harada (Akita Univ.)*	Possibility of nonsimultaneous blow-up for a complex valued semilinear heat equation . . . . .	10
05-01-0069	38	Goro Akagi (Kobe Univ.)	Stability of non-isolated asymptotic profiles for fast diffusion . . . . .	10
05-01-0046	39	Kazuhiro Ishige (Tohoku Univ.) Ryuichi Sato (Tohoku Univ.)	Heat equation with a nonlinear boundary condition and uniformly local $L^r$ spaces . . . . .	10
05-01-0023	40	Yohei Fujishima (Osaka Univ.)*	On the effect of higher order derivatives of initial data on the blow-up set for a semilinear heat equation . . . . .	10
05-01-0075	41	Shigeru Sakaguchi (Tohoku Univ.)*	Stationary isothermic surfaces and curves have some symmetry . . . . .	10

### 13:15–14:15 Talk Invited by Functional Equations Section

05-02-0001		Hiro Yoshi Mitake (Hiroshima Univ.) <sup>b</sup>	Large-time asymptotics and selection problems for degenerate viscous Hamilton–Jacobi equations	
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March 23rd (Mon) Conference Room Va

### 9:30–12:00

05-01-0030	42	Koichi Osaki (Kwansei Gakuin Univ.)* Etsushi Nakaguchi (Tokyo Med. Dent. Univ.)	$L_p$ -estimates of solutions to $n$ -dimensional parabolic-parabolic chemotaxis system with weak degradation . . . . .	10
05-01-0055	43	Sachiko Ishida (Tokyo Univ. of Sci.)	Boundedness in chemotaxis-Navier–Stokes systems with position dependent sensitivity in 2D domains . . . . .	10
05-01-0034	44	Kentarou Fujie (Tokyo Univ. of Sci.) Takasi Senba (Kyushu Inst. of Tech.)	Global existence and boundedness in a parabolic-elliptic Keller–Segel system with general sensitivity . . . . .	10
05-01-0008	45	Noriko Mizoguchi (Tokyo Gakugei Univ.)	Type II blowup in the doubly parabolic Keller–Segel system in the two dimension . . . . .	10
05-01-0043	46	Yuta Wakasugi (Osaka Univ.)* Kenji Nishihara (Waseda Univ.)	Critical exponent for a system of semilinear damped wave equations . . . . .	10

- 05-01-0016  
47 Kunio Hidano (Mie Univ.) \* Combined effects of two nonlinearities in lifespan of small solutions to  
Chengbo Wang (Zhejiang Univ.) semi-linear wave equations ..... 10  
Kazuyoshi Yokoyama  
(Hokkaido Univ. of Sci.)
- 05-01-0015  
48 Shigehiro Sakata (Waseda Univ.) Movement of spatial maximizers of the solution of the damped wave  
Yuta Wakasugi (Osaka Univ.) equation ..... 10
- 05-01-0051  
49 Hiroshi Takeda (Fukuoka Inst. of Tech.) \* Large time behavior of solutions for a nonlinear damped plate equation  
..... 10
- 05-01-0079  
50 Takamori Kato (Nagoya Univ.) Invariant measure for the periodic fourth order Schrödinger equation  
..... 10
- 05-01-0053  
51 Shinya Kinoshita (Nagoya Univ.) \* The Cauchy problem of nonlinear Schrödinger equations below  $L^2$  ..... 10
- 05-01-0066  
52 Kota Uriya (Tohoku Univ.) \* On the ill-posedness for a quadratic nonlinear Schrödinger equation  
Tsukasa Iwabuchi (Chuo Univ.) ..... 10
- 05-01-0064  
53 Toshiyuki Suzuki Scattering problem for Hartree equations with inverse-square potentials  
(Kanagawa Univ./Kogakuin Univ.) ..... 10
- 14:15–16:00**
- 05-01-0048  
54 Yoshihisa Nakamura \* Global existence and asymptotic behavior of solutions to some nonlinear  
(Kumamoto Univ.) systems of Schrödinger equations ..... 10  
Akihiro Shimomura (Univ. of Tokyo)  
Satoshi Tonegawa (Nihon Univ.)
- 05-01-0012  
55 Yohei Yamazaki (Kyoto Univ.) \* Transverse instability for nonlinear Schrödinger equation with a linear  
potential ..... 10
- 05-01-0007  
56 Gaku Hoshino (Waseda Univ.) Space-time analytic smoothing effect for the global solutions to the  
Tohru Ozawa (Waseda Univ.) pseudo conformally invariant Schrödinger equations ..... 10
- 05-01-0037  
57 Reinhard Farwig (TU Darmstadt) \* Initial values for the Navier–Stokes equations in spaces with weights in  
Yoshikazu Giga (Univ. of Tokyo) time ..... 10  
Penyuan Hsu (Tokyo Tech)
- 05-01-0073  
58 Ken Abe (Nagoya Univ.) On the Stokes semigroup in some non-Helmholtz domains ..... 10  
Yoshikazu Giga (Univ. of Tokyo)  
Katharina Schade (TU Darmstadt)  
Takuya Suzuki (Univ. of Tokyo)
- 05-01-0052  
59 Tsubasa Itoh (Tokyo Tech) Remark on single exponential bound of the vorticity gradient for the  
Hideyuki Miura (Tokyo Tech) two-dimensional Euler flow around a corner ..... 10  
Tsuyoshi Yoneda (Tokyo Tech)
- 05-01-0065  
60 Yasunori Maekawa (Tohoku Univ.) On Ukai-type solution formula for the Stokes system in a domain with  
Hideyuki Miura (Tokyo Tech) graph boundary ..... 10
- 05-01-0070  
61 Teppei Kobayasi (Meiji Univ.) \* A stationary solution of the Navier–Stokes equations in a perturbed  
layer domain in  $\mathbb{R}^3$  ..... 10
- 05-01-0080  
62 Toshiaki Hishida (Nagoya Univ.)<sup>b</sup> Asymptotic structure of steady Stokes flow around a rotating obstacle  
in two dimensions ..... 10
- 16:20–17:20 Award Lecture for 2014 Analysis Prize**
- 05-02-0004  
Kazuhiro Ishige (Tohoku Univ.) Concavity properties of the solutions for parabolic equations

## March 24th (Tue) Conference Room Va

**9:30–11:30**

- 05-01-0001  
63 Tetu Makino (Yamaguchi Univ.)\* On spherically symmetric solutions to the Einstein–Euler equations ··· 10
- 05-01-0072  
64 Naofumi Mori (Kyushu Univ.)  
Shuichi Kawashima (Kyushu Univ.) Dissipative structure and nonlinear stability for the dissipative Timoshenko system ··········· 10
- 05-01-0041  
65 Hirotada Honda (Keio Univ.)  
Atusi Tani (Keio Univ.\*) Large-time solvability of primitive equations for the ocean with free surface ··········· 10
- 05-01-0050  
66 Hiroki Ueno (Keio Univ.)  
Tatsuo Iguchi (Keio Univ.) A mathematical justification of the thin film approximation for the flow down an inclined plane ··········· 10
- 05-01-0077  
67 Noboru Chikami (Tohoku Univ.)\*  
Raphaël Danchin (Univ. Paris-Est) On the well-posedness of the full compressible Navier–Stokes system in critical Besov spaces ··········· 10
- 05-01-0042  
68 Kazuyuki Tsuda (Kyushu Univ.) Time-periodic problem for the compressible Navier–Stokes–Korteweg system on the whole space ··········· 10
- 05-01-0024  
69 Ryouta Oomachi (Kyushu Univ.) Stability of time periodic solution of incompressible Navier–Stokes equation on the half-space under oscillatory moving boundary condition ··· 10
- 05-01-0040  
70 Yoshiyuki Kagei (Kyushu Univ.)  
Takaaki Nishida (Kyoto Univ.) Instability of plane Poiseuille flow in viscous compressible gas ······· 10
- 05-01-0038  
71 Miho Murata (Waseda Univ.)  
Matthias Hieber (TU Darmstadt) On the local in time unique existence to the Fluid–Rigid body interaction problem for compressible fluids ··········· 10
- 05-01-0056  
72 Senjo Shimizu (Shizuoka Univ.)  
Shintaro Yagi (Shizuoka Univ.) On local  $L_p$ - $L_q$  well-posedness of incompressible two-phase flows with phase transitions: Non equal densities with large initial data ······· 10

**14:15–15:15**

- 05-01-0062  
73 Hirokazu Saito (Waseda Univ.)  
Matthias Hieber (TU Darmstadt) Strong solutions for two-phase free boundary problems for a class of non-Newtonian fluids ··········· 10
- 05-01-0026  
74 Yoshihiro Shibata (Waseda Univ.) Local well-posedness of compressible-incompressible two-phase flows with phase transitions ··········· 10
- 05-01-0027  
75 Yoshihiro Shibata (Waseda Univ.) On the  $L_p$ - $L_q$  maximal regularity theorem arising in the study of the compressible-incompressible two phase flow with phase transition ···· 10
- 05-01-0028  
76 Yoshihiro Shibata (Waseda Univ.) On strong dynamics of compressible nematic liquid crystals ········· 10
- 05-01-0029  
77 Yoshihiro Shibata (Waseda Univ.) On the global wellposedness of strong dynamics of compressible nematic liquid crystals in  $\mathbb{R}^N$  ··········· 10

**15:30–16:30 Talk Invited by Functional Equations Section**

- 05-02-0003  
Satoshi Masaki (Hiroshima Univ.)<sup>b</sup> On mass-subcritical nonlinear Schrödinger equation