

# The 4th Japan-Taiwan Joint Workshop for Young Scholars in Applied Mathematics

February 28-March 2, 2013

Venue: Room B101, Shofukan Building, Omiya Campus, Ryukoku University

<http://www.ryukoku.ac.jp/english2/about/access/omiya.html>

## Program

### February 28 (Thursday)

- 08:45 Registration
- 09:15 Opening
- Session 1** **Chair : Jong-Shenq Guo** (Tamkang University)
- 09:20 -- 09:35 Aida, Chihiro 相田千尋 (Meiji University, MC)  
*Diffusion-induced bifurcation from infinity*
- 09:35 -- 09:50 Chen, Shih-Hsin 陳世昕 (National Taiwan University, MC)  
*On the time periodic solutions of a Burgers' Type equation*
- 09:50 -- 10:05 Inoue, Soichiro 井上総一郎 (Meiji University, MC)  
*Time Series Analysis of Japanese Government Bond*
- 10:05 -- 10:20 Kaihara, Mai 海原麻衣 (Meiji University, MC)  
*Propagation behavior of single traveling wave depending on interaction with an obstacle*
- 10:20 -- 10:35 Ota, Satoshi 太田智史 (Ryukoku University, MC)  
*Existence and stability of periodic solutions of saltwater oscillators model*
- 10:35 -- 11:00 **Break**
- Session 2** **Chair: Junta Matsukidaira** (Ryukoku University)
- 11:00 -- 11:15 Matumoto, Junichi 松本純一 (Meiji University, MC)  
*Wavelet Analysis for detecting business cycles*
- 11:15 -- 11:30 Mori, Tatsuki 森竜樹 (Ryukoku University, MC)  
*Numerical approach on structure and stability of stationary solutions to a cross-diffusion equation*
- 11:30 -- 11:45 Nakamoto, Tatuya 中本達哉 (Hiroshima University, MC)  
*A cellular automaton model for sediment transport by fluid flow coupled with the lattice Boltzmann method*
- 11:45 -- 12:00 Nakamura, Yuumi 中村優美 (Meiji University, MC)  
*Groove Feeling Extracted from Data of Drum Performance by NMF*
- 12:00 -- 12:15 Ohya, Yoshito, 大家義登 (Meiji University, DC)  
*Parameter estimation of bottom friction for simulation of tsunami run-up phenomenon*

12:15 -- 13:30 **Lunch Break**

**Session 3** **Chair: Chiun-Chuan Chen** (National Taiwan University)

13:30 -- 13:45 Shinoda, Satoshi 篠田諭 (Hiroshima University, MC)

*Effects of Visual Cue on Ants' Routing*

13:45 -- 14:00 Shimizu, Takayoshi 清水隆秀 (Meiji University, MC)

*Kinematic equation of the curve and numerical computation*

14:00 -- 14:15 Shinjo, Naoyuki 新城直幸 (Ryukoku University, MC)

*Mathematical models for the capillary-alveoli gas exchange*

14:15 -- 14:30 Tateno, Kurina 館野紅里奈 (Meiji University, MC)

*Collective motion of camphor disks generating rhythm and synchronization*

14:30 -- 14:50 **Break**

**Session 4** **Chair: Kota Ikeda** (Meiji University)

14:50 -- 15:05 Takahashi, Jin 高橋仁 (Tokyo Institute of Technology, MC)

*Removability of moving singularities for the heat equation*

15:05 -- 15:20 Yamaguchi, Masahiro 山口将大 (Meiji University, DC)

*A self-organized mesh generator using pattern formation in a reaction-diffusion system*

15:20 -- 15:35 Yueh, Mei-Heng 樂美亨 (National Chiao Tung University, MC)

*Conformal Surface Morphing with Applications*

15:35 -- 15:50 Ekeoma Rowland Ijioma (Meiji University, DC)

*Effects of Material Properties on a Smouldering Combustion Wave*

15:50 -- 16:10 **Break**

**Session 5** **Chair: Jann-Long Chern** (National Central University)

16:10 -- 16:25 Chien, Hong-Yu 簡鴻宇 (National Taiwan University, DC)

*A periodic traveling wave of a reaction diffusion equation with non-local nonlinearity*

16:25 -- 16:40 Chen, Yan-Yu 陳彥宇 (Meiji University, DC)

*Traveling spots on singular limit problems of FitzHugh-Nagumo equations*

16:40 -- 16:55 Chen, Chih-Ho 陳志和 (National Central University, DC)

*On the classification of all singular solutions for Hardy-Sobolev Equation*

16:55 -- 17:10 Hsieh, Han-En 謝函恩 (National Taiwan University, DC)

*Eigendecomposition of The Discrete Double-Curl Operator with Application to Fast Eigensolver for Three Dimensional Photonic Crystals*

17:10 -- 17:20 **Break**

**Session 6** **Chair: Yoshikazu Yamagishi** (Ryukoku University)

17:20 -- 17:35 Iwamoto, Mayuko 岩本真裕子 (Meiji University, DC)

*Unidirectional Propagation of Chemical Waves on Heterogeneous Excitable Media*

17:35 -- 17:50 Huang, Chun-Ming 黃俊銘 (National Chiao Tung University, DC)

*Global Synchronization For Coupled Map Lattices In Ecology*

18:20 -- 20:00

**Dinner Party** (3F Seiwakan Building)

**March 1 (Friday)**

**Session 7**      **Chair: Weichung Wang** (National Taiwan University)

9:00 -- 9:15

Lin, Chia-Hung 林嘉宏 (National Taiwan University, DC)

*Detection of the inclusions of the elasticity system with general residual stress*

09:15 -- 9:30

Mohammad Osman Gani (Meiji University, DC)

*Spiral breakup occurs in a generalized FitzHugh-Nagumo model due to the alternans in excitable media*

09:30 -- 09:45

Liu, Gi-Ren 劉聚仁 (National Taiwan University, DC)

*Partial Differential Equation with Random Initial Data*

09:45 -- 10:00

Ono, Jun 小野隼 (Meiji University, MC)

*Methodology of Footsteps Illusion Art*

10:00 -- 10:20

**Break**

**Session 8**

**Chair: Nobuhiko J. Suematsu** (Meiji University)

10:20 -- 10:35

Wang, Sheng-Yi 王聖毅 (National Chiao Tung University, DC)

*Parallel Lanczos and Jacobi-Davidson Type Eigensolver in Quantum Dot Simulation*

10:35 -- 10:50

Suzuno, Kohta 鈴野浩太 (Meiji University, DC)

*Collective motion of self-driven particles through a bottleneck*

10:50 -- 11:05

Wu, Yen-Lin 吳彥霖 (National Central University, DC)

*Existence and Uniqueness of the Eigenvalue Problem for the Singular Ergodic Control*

11:05 -- 11:20

Sushida, Takamichi 須志田 隆道 (Ryukoku University, DC)

*Phyllotactic Voronoi spiral tilings*

11:20 -- 11:40

**Break**

**Session 9**

**Chair: Dong-Ho Tsai** (National Tsing Hua University)

11:40 -- 11:55

Lue, Yang-Kai 呂楊凱 (National Tsing Hua University, PD)

*The stability of self-shrinkers of mean curvature flow*

11:55 -- 12:10

Huang, Chih-Chiang 黃志強 (National Taiwan University, PD)

*Monostable-type travelling wave solutions of the diffusive FitzHugh-Nagumo type system in  $R^N$*

- 12:10 -- 12:25 Huang, Bo-Chih 黃博峙 (Tamkang University, PD)  
*Characterization of the transonic stationary solutions for the hydrodynamic escape problem*
- 12:25 -- 12:40 Wu, Chang-Hong 吳昌鴻 (National University of Tainan, AP)  
*Wave propagation for a two-species competition system in a lattice*
- 14:10 -- 14:30 Award Ceremony
- 14:30 -- 18:00 Free Discussions

**March 2 (Saturday) 9:00 – 18:00 : Free Discussions**

**Organizers:**

Chiun-Chuan Chen (National Taiwan University)  
Jann-Long Chern (National Central University)  
Jong-Sheng Guo (Tamkang University)  
Kota Ikeda (Meiji University)  
Junta Matsukidaira (Ryukoku University)  
Yoshihisa Morita (Ryukoku University)  
Hirokazu Ninomiya (Meiji University)  
Toshiyuki Ogawa (Meiji University)  
Nobuhiko J. Suematsu (Meiji University)  
Yoshikazu Yamagishi (Ryukoku University)  
Shoji Yotsutani (Ryukoku University)

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- National Center for Theoretical Sciences/TPE
- National Taiwan University
- Tokyo Institute of Technology

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