RIMS Workshop: Theory of Biomathematics and Its Applications XIII
- Modeling and Analysis for Discrete and Continuous Models -

Date: Nov 14 (Mon) - Nov 17 (Thr), 2016  
Venue: RIMS, Kyoto Univ. (Room No. 420)  
Organizer: Koichi Osaki (School of Science and Technology, Kwansei Gakuin Univ. and The Director of Research Center for Mathematical Sciences, Kwansei Gakuin Univ.)  
Endorsement: The Japanese Society for Mathematical Biology

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### Program

#### Nov 14 (Mon)

12:55〜13:00 Opening Address

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**Contributed Talk**

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<tr>
<th>Time</th>
<th>Presenter</th>
<th>Title</th>
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<tr>
<td>13:00〜13:20</td>
<td>Ichiro K. Shimatani (The Institute of Statistical Mathematics)</td>
<td>Synchronized modeling for reproductive movements and parameter estimation by AKB algorithm</td>
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<td>13:20〜13:40</td>
<td>Sho Kato and Satoru Morita (Shizuoka University)</td>
<td>Evolutionary game considering intra-cell and inter-cell interactions</td>
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<td>13:40〜14:00</td>
<td>Isamu Doku (Department of Mathematics, Faculty of Education, Saitama University)</td>
<td>Survival property for superprocesses and its application to models</td>
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<td>14:00〜14:20</td>
<td>Masakazu Akiyama and Takamichi Sushida (Research Institute for Electronic Science, Hokkaido University)</td>
<td>A mathematical model of cell polarity and cell migration</td>
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<td>14:20〜14:30</td>
<td>Mitsuo Takase (LINFORPS Inc.)</td>
<td>In cut tail reproduction model, its reformation according to Homeotic genes, tumor production and its detection by immune system</td>
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<td>14:50〜15:10</td>
<td>Naohiro Okamoto (Doshisha University Graduate School of Life and Medical Sciences)</td>
<td>Particle method simulation for the construction of the blood flow model</td>
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<td>15:10〜15:30</td>
<td>Ryosuke Kono (Doshisha University Graduate School of Life and Medical Sciences)</td>
<td>Analysis of the synchronization phenomena to be caused by the network circuits</td>
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<td>15:30〜15:40</td>
<td>Short Break</td>
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<td>15:40〜16:00</td>
<td>Daisuke Shikayama (Graduate School of Integrated Science and Technology Department of Engineering Mathematical and System Engineering course, Shizuoka University)</td>
<td>Improvement of the overestimation for invasion speed in higher birth-rate population</td>
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<td>16:00〜16:20</td>
<td>Kazunori Sato (Faculty of Engineering, Shizuoka University)</td>
<td>Patch models of lake ecosystem</td>
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<td>16:20〜16:40</td>
<td>Ryusuke Kon (Faculty of Engineering, University of Miyazaki)</td>
<td>A dynamic dichotomy for semelparous Leslie matrix models</td>
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Nov 15 (Tue)

Contributed Talk

9:10~9:30 Takuji Oba and Jun Kigami (Graduate School of Informatics, Kyoto University)
When does invasion implies substitution?

9:30~9:50 Atsushi Okamoto and Tsuyoshi Kajiwara (Graduate School of Environmental and Life Science, Okayama University)
Global stability of an age-structured model for epidemics

9:50~10:10 Syunpei Takemura and Tsuyoshi Kajiwara (Graduate School of Environmental and Life Science, Okayama University)
Analysis of non-symmetric replicator equations

10:10~10:30 Yusuke Kumagai and Tsuyoshi Kajiwara (Graduate School of Environmental and Life Science, Okayama University)
Competition in chemostat with two resources

10:30~10:40 Short Break

10:40~11:00 Tsuyoshi Kajiwara (Graduate School of Environmental and Life Science, Okayama University)
Global stability of age-structured model of multi-strain pathogen-immune interaction

11:00~11:20 Ryohei Saito (Graduate School of Mathematical Sciences, University of Tokyo)
Mathematical analysis of an age-structured population model for demographic transition

11:20~11:40 Yoji Otani (Graduate School of Environmental and Life Science, Okayama University)
Global stability for an SEIR multigroup model with infinite delay

11:40~12:00 Toshikazu Kuniya (Graduate School of System Informatics, Kobe University)
Global asymptotic stability of epidemic models with diffusion terms and space-dependent coefficients

12:00~13:00 Break for Lunch

13:00~13:20 Yusuke Ito (Mathematical biology laboratory, Graduate school of system life science, Kyushu univ.)
The number of infection events per cell during cell-free HIV-1 infection obeys negative-binomial distribution

13:20~13:40 Yusuke Kakizoe (Systems Life Sciences, Graduate school of Kyushu University)
Modeling to quantify HIV-1 entry process

13:40~14:00 Kenji Mizumoto (Graduate School of Medicine, Hokkaido University)
Estimating the infection fatality risk associated with influenza in Japan

14:00~14:20 Hiroshi Nishiura (Graduate School of Medicine, Hokkaido University)
Prioritizing rubella vaccination program by age using two modeling strategies

14:20~14:30 Short Break

14:30~14:40 Opening Address

14:40~15:00 Takaaki Funo (Department of Biology, Faculty of sciences, Kyushu University)
Correlation between Malaria cases and rain fall

15:00~15:30 Marko Jusup (Hokkaido University, Research Institute for Electronic Science)
Pattern formation and pattern transitions in spatial epidemiology

15:30~15:40 Short Break

15:40~16:10 Yuuya Tachiki (Institute for Virus Research, Kyoto University; Department of Biology, Kyushu University)
The Evolution of influenza virus driven by immunological memory

16:10~16:40 Yuya Miyazaki (clustium Inc.)
Potential of ecological simulation game
Nov 16 (Wed)

Contributed Talk

9:30~9:50 Tatsuya Kurusu(Department of Biology, Faculty of Sciences, Kyushu University)
Modeling Hepatitis B Virus entry

9:50~10:10 Shoya Iwanami(Kyushu University)
Mathematical model of hematopoietic system with myeloid bypass

10:10~10:30 Kousaku Kitagawa(Kyushu University)
Multiscale model of HCV infection and its reduction to ODE

10:30~10:40 Short Break

10:40~11:00 Shun Kurokawa(Kyoto University; Institute of Zoology, Chinese Academy of Sciences)
Evolution of stubbornness

11:00~11:20 Masaaki Mizukami(Department of Mathematics, Tokyo University of Science)
Global existence and asymptotic stability in a two-species chemotaxis-competition system

11:20~11:40 Nariyuki Nakagiri*, Shuhei Hagino* and Yukio Sakisaka** (School of Human Science and Environment University of Hyogo*; Division of Early Childhood Care and Education, Nakamura Gakuen University Junior College**)
Growth Pattern of Colony in Bacillus subtilis natto: effects by environmental conditions

11:40~12:50 Break for Lunch

12:50~13:10 Tohru Tsujikawa(Faculty of Engineering, University of Miyazaki)
Propagating pulses in E. coli patterns

13:10~13:30 Horibe Kazuya(Osaka University Graduate School of Information Science and Technology)
Curvature-driven splitting of a planar traveling wave

13:30~13:40 Short Break

Mini-Symposium “Toward Biomathematics of Insects –Termite, Honeybee, and Drosophila–”
Organizer: Takayuki Narumi (Faculty of Engineering, Kyushu Sangyo University)

13:40~13:45 Opening Address

13:45~14:25 Keita Endo(Laboratory for Circuit Mechanisms of Sensory Perception, RIKEN BSI)
Sparse coding of the odor information in the Drosophila mushroom body

14:25~15:05 Osamu Yamanaka(Department of Mathematical and Life Sciences, Hiroshima University)
Statistical Analysis on Dynamic Division of Labor in Ant Colony using RFID chip

15:05~15:15 Short Break

15:15~15:50 Takayuki Narumi(Faculty of Engineering, Kyushu Sangyo University)
An agent model for the first process of honeycomb construction

15:50~16:00 Short Break

Invited Talk

16:00~16:50 Hisao Honda(Kobe University Graduate School of Medicine)
Mathematical Models are indispensable to bridge between genes and morphogenesis
Nov 17 (Thr)

Contributed Talk

09:40～10:00 Kenta Odagiri(School of Network and Information, Senshu University)
  Dynamics of chemotactic agents in inhomogeneous environment
10:00～10:20 Hirotaka Kanazawa(Kyoto Prefectural University of Medicine)
  Some considerations about a mathematical structure of a renal tube morphology
10:20～10:40 Nariya Uchida(Department of Physics, Tohoku University)
  Collective motion of bacteria at solid-fluid interfaces
10:40～10:50 **Short Break**
10:50～11:10 Hiroto Shoji(Kyoto Prefectural University of Medicine)
  Morphological changes in hepatic lobule of fatty liver
11:10～11:30 Martyushev Alexey(Department of Biology, Faculty of Science, Kyushu University)
  Mathematical modeling of infectious diseases
11:30～11:50 Yasuhisa Saito(Department of Mathematics, Shimane University)
  Global stability and limit cycle in predator-prey interactions with indirect effect

11:50～12:00 Closing Address