Theory of Biomathematics and Its Applications VII

November 16 (Tue.) – 19 (Fri.), 2010

Research Institute for Mathematical Sciences (Room No. 111), Kyoto University

Chair: Hiromi SENO (Hiroshima University)
Academic Partner: The Japanese Society for Mathematical Biology

Program

November 16 (Tue.)

12:30   *Opening Address*

【Contributed Talks】

12:40–13:05   Toru SASAKI, Tsuyoshi KAJIWARA, and Toru INOUE (Okayama Univ.)
"Mathematical analysis of multi-strain infections and superinfection"

13:10–13:35   Tomohiko AKIYAMA and Tsuyoshi KAJIWARA (Okayama Univ.)
"Mathematical model for infection of multiple pathogens"

13:40–14:05   Toshiaki OKAMUNE and Tsuyoshi KAJIWARA (Okayama Univ.)
"Virus mutation and multi strain virus model in HIV"

14:10–14:35   Takayuki TOMIDA (Shizuoka Univ.)
"Dynamics of dendritic cells in HIV infection"

14:35–14:50   ∼ *Short Break* ∼

14:50–15:15   Isamu DOKU (Saitama Univ.)
"On a random model for immune response"

15:20–15:45   Kei SATO (IVR, Kyoto Univ.)
"DNA labeling system by peripheral blood of humanized mouse
— Animal model —"

15:50–16:15   Shingo IWAMI (JST PRESTO)
"DNA labeling system by peripheral blood of humanized mouse
— Mathematical model —"

16:20–16:45   Youko OKADA and Osamu SUZUKI (Nihon Univ.)
"Generations of butterfly wing design patterns by iteration dynamical systems of discrete Laplacians"

November 17 (Wed.)

【Contributed Talks】

09:30–09:55   Hisashi INABA (Univ. Tokyo)
"On a new definition of the basic reproduction number for infectious diseases in heterogeneous environments"

10:00–10:25   Masaki KISHIDA (Univ. Tokyo)
"A subclinical infection model with waning of immunity, boosting immunity"

10:30–10:55   Toshikazu KUNIYA (Univ. Tokyo)
"Global stability analysis with a discretization method for age-structured epidemic models"

11:00–11:25   Nariyuki NAKAGIRI (Univ. Hyogo)
"Effects of habitat destruction on model ecosystems: Effectiveness of habitat fragmentation"

11:25–13:00   **《Break for Lunch》**

13:00–13:25   Yasumasa SAISHO (Hiroshima Univ.)
"Probabilistic considerations on eclosion and copulation of cicadas"

13:30–13:55   Tsuyoshi KAJIWARA, Satoshi NAKAYAMA, Takahisa MIYATAKE, and Toru SASAKI (Okayama Univ.)
"Mathematical study for tonic immobility of tribolium castaneum"

14:00–14:25   Keiichi UEDA (RIMS, Kyoto Univ.)
"A mathematical model of adaptive behavior in the true slime mold"

14:25–14:45   ∼ *Short Break* ∼

【Invited Organized Session】 Mathematical and Statistical Modeling Based on Experimental Data of Biological Systems   (14:45–17:00)

(Organized by Ikkyu AIHARA and Atsushi J. NAGANO)

Ikkyu AIHARA (Kyoto Univ.)
"Experiments and modeling on frustration of calling frogs"

Atsushi J. NAGANO (National Institute of Agrobiological Sciences)
"Modeling of rice transcriptome in a paddy field"

Natsumaro KUTSUNA (Univ. Tokyo)
"Microscopic image analysis and simulation for cytoskeletal patterns"

Masato YAMAMICHI (The Graduate University for Advanced Studies)
"Chemostat experiments and mathematical models"

November 18 (Thu.)

【Contributed Talks】

09:30–09:55   Hiromi SENO (Hiroshima Univ.)

"On dynamical consistency between time-discrete and time-continuous SIR models"

10:00–10:25   Naomi FUJITA (Shizuoka Univ.)

"Mathematical analysis of Swine–Human influenza epidemic models"

10:30–10:55   Koujiro TANAKA (Shizuoka Univ.)

"Evaluation on efficiency of BCG vaccination for the prevention of tuberculosis epidemics"

11:00–11:25   Kei-ichi TAINAKA (Shizuoka Univ.)

"Mathematical model for batch culture of budding yeast: Paradoxes of declining birthrate"

11:25–13:00   **《Break for Lunch》**

【Invited Talk】

13:00–14:00   Masayasu MIMURA (MIMS, Meiji University)

"Self-organization and modeling"

14:00–14:20   ∼ *Short Break* ∼

【Contributed Talks】

14:20–14:45   Gang Huang (Shizuoka Univ.)

"Global stability for a class of delay differential equations in single species dynamic"

14:50–15:15   Kazunori SATO and Atsushi YAMAZAKI (Shizuoka Univ.)

"Predator–prey dynamics in chemostat model"

15:20–15:45   Zu Jian (Meiji Univ.)

"Coevolution in a predator–prey system subject to Allee effect"

15:50–16:15   Hiro-Sato NIWA (National Research Institute of Fisheries Science)

"Student's t-statistics for population time-series"

16:20–16:45   Takuya SEKIGUCHI (Tokyo Institute of Technology)

"How intergenerational interaction affects attitude–behavior inconsistency"

November 19 (Fri.)

【Invited Talk】

09:30–10:30   Yasumasa NISHIURA (RIES, Hokkaido Univ.)

"Inhomogeneities produce spontaneous rhythms and spatial structures"

10:30–10:45   ∼ *Short Break* ∼

【Contributed Talks】

10:45–11:10   S. Seirin LEE (Univ. Tokyo) and Eamonn A. GAFFNEY (Oxford Univ.)

"The sensitivity of Turing self-organisation to biological feedback delays: 2D models of zebrafish pigmentation"

11:15–11:40   Hideo IKEDA (Univ. Toyama)

"Responses of traveling front waves in some heterogeneous diffusive media"

11:40–13:00   **《Break for Lunch》**

13:00–13:25   Artibano MICALI (Montpellier Univ. II) and Osamu SUZUKI (Nihon Univ.)

"Nonassociative algebras generated by Mendel's laws in genetics"

13:30–13:55   Masanori SUGIURA and Kei TOKITA (Osaka Univ.)

"Species abundance of an ecosystem with adaptive changes in interactions"

14:00–14:25   Yosuke HORIUCHI, Tsuyoshi MIZUGUCHI (Osaka Pref. Univ.),
and Satoru MORITA (Shizuoka Univ.)

"Structural analysis of genealogical networks"

14:30–14:55   Yuuki YOSHINO and Tsuyoshi KAJIWARA (Okayama Univ.)

"Models of infectious disease on networks"

14:55   *Closing Address*