



# HOKKAIDO UNIVERSITY

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| Title            | Program                                                                                                                                                     |
| Description      | JSTさきがけ研究集会 環境問題における数理の可能性. 平成20年6月11日～平成20年6月13日. 札幌市                                                                                                      |
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# JST Presto Symposium on Mathematical Sciences towards Environmental Problems

Dates: June 11 (Wednesday) - 13 (Friday), 2008  
Venue: Room 8-309, Faculty of Science Building #8, Hokkaido University  
Organizers: JST Presto Project,  
Hokkaido University Graduate School of Science (Department of Mathematics)  
Co-organizers: Research Center for Integrative Mathematics (Hokkaido University),  
Global Eco-Risk Management from Asian Viewpoints  
(Yokohama National University)  
JST Symposium Organizing Committee:  
Takashi Sakajo (Hokkaido University/Presto Researcher, Corresponding Organizer)  
Yasumasa Nishiura (Hokkaido University/Research Supervisor)  
Hiroshi Suito (Okayama University/Presto Researcher)  
Katsuhiro Nishinari (University of Tokyo/Presto Researcher)  
Masaharu Nagayama (Kanazawa University/Presto Researcher)  
Takashi Amemiya (Yokohama National University)  
URL: [http://www.math.sci.hokudai.ac.jp/sympo/080611/index\\_en.html](http://www.math.sci.hokudai.ac.jp/sympo/080611/index_en.html)

## June 11 (Wednesday)

14:00-15:00 Marco Picasso (IACS/Switzerland)  
Numerical simulation of Rhone glacier between 1874 and 2100  
\*joint work with Guillaume Jouvet, Jacques Rappaz (EPF-Lausanne), Heinz Blatter, Martin Funk (ETH-Zurich)

15:30-16:30 Koji Kurihara (Okayama University)  
Statistical approach for environmental problems based on spatial structure

## June 12 (Thursday)

9:30-10:30 Mitsuhiro Denda (Shiseido Co., Ltd)  
Aridification of modern cities and skin pathology

11:00-12:00 Axel Rossberg (IIASA/Austria)  
The problem of biodiversity

14:00-15:00 Kiminori Itoh (Yokohama National University)  
Will statistics give the sensitivity of the global climate system?

15:30-17:30 Poster Session

## June 13 (Friday)

9:30-10:30 Tetsuro Tujimoto (Nagoya University)  
River management for ecosystem conservation  
- Policy-making support through mathematical modelling -

11:00-12:00 Discussion Time

## Poster Session

Yousuke Amaya (Hokkaido University)

Charge simulation method for approximating the complex potential in a channel domain with multiple cylindrical islands

\*joint work with Takashi Sakajo

Kazunori Fujisawa (Okayama University)

Simultaneous analysis method of deformation and internal erosion for soil structures

Myungjin Na (Okayama University)

A study on appropriate selection of final waste disposal sites

Fumio Nakajima (Iwate University)

The paradox of enrichment

Shinji Nakaoka (University of Tokyo)

Mathematical study on microbial coexistence mediated by syntrophic association

\*joint work with Chie Katsuyama, Yasuhiro Takeuchi, Kenji Katoh

Takashi Nakazawa (Okayama University)

Numerical and mathematical approaches to flow analyses in ponds induced by a water circulator

Takashi Nitta (Mie University)

Constructing the optimal solutions to the infinite horizon optimization problems as the limit of the optimal solutions to the finite horizon problems

\*joint work with Dapeng Cai

Isamu Ohnishi (Hiroshima University)

A binary digit induced by multiple covalent modifications and its application to molecular rhythm

\*joint work with Tatsuo Shibata and Kazumi Ebisu

Kazumichi Ohtsuka (University of Tokyo)

Real option valuation of social systems

\*joint work with Katsuhiro Nishinari

Akiko Satake (Hokkaido University)

Modelling forest transition: Bistability of forested and abandoned landscapes

Kenichi Shibata (Yokohama National University)

Activities of algicidal bacteria and their influences on microbial communities

Hiroshi Suito (Okayama University)

Motion of aquatic plants interacting with water flows

\*joint work with K. Tanino

Akiyasu Tomoeda (University of Tokyo)

Fuel loss and jams due to stopping at railroad crossings

\*joint work with Katsuhiro Nishinari and Yoshiaki Harada

Daichi Yanagisawa (University of Tokyo)

Easing pedestrian jam for preventing global warming

\*joint work with Katsuhiro Nishinari