**ThA01** Meeting Room 1 (1F)/Online

## Modeling of Stochastic Systems and Stochastic Processes

Chair: Kenji Sugimoto — Nara Institute of Science and Technology

Co-Chair: Kiyoharu Tagawa — Kindai University

12:10-12:30 ThA01.1

*Student's t-process Regression on the Space of Probability Density Functions*

Yusuke Uchiyama — MAZIN Inc.

Hiroki Oka — MAZIN Inc.

Ayumu Nono — The University of Tokyo

12:30-12:50 ThA01.2

*Reliability Analysis for Degradation Data Based on Hierarchical Bayesian Methods*

Toru Kaise — University of Hyogo

12:50-13:10 ThA01.3

*Second-Order Moment Closures for Networked Susceptible-Infected-Susceptible Model*

Masaki Ogura — Osaka University

13:10-13:30 ThA01.4

*System Identification with Student's t-Process Dynamical Model*

Ayumu Nono — The University of Tokyo

Yusuke Uchiyama — MAZIN Inc.

13:30-13:50 ThA01.5

*Equilibrium on Distributed Welfare Games with Utility Functions Based on Egalitarian Non-Separable Contribution*

Ayumi Makabe — Osaka University

Takayuki Wada — Osaka University

Yasumasa Fujisaki — Osaka University

**ThA02** Training Room (1F)/Online

## Signal Detection and Statistical Signal Processing

Chair: Toshiharu Hatanaka — The University of Fukuchiyama

Co-Chair: Masaya Murata — Japan Aerospace Exploration Agency

12:10-12:30 ThA02.1

*Precise Point Positioning Algorithms based on GR Models by Applying CLAS*

Katsumasa Miyatake — Mitsubishi Electric Corporation

Kento Suzuki — Ritsumeikan University

Yukihiro Kubo — Ritsumeikan University

Sueo Sugimoto — Ritsumeikan University

12:30-12:50 ThA02.2

*Detection and Separation Methods for Transient Signals Applied to Instrumental Sounds*

Yukio Fukayama — Hiroshima Institute of Technology

12:50-13:10 ThA02.3

*GNSS Precise Point Positioning Using Triple Frequency Measurements*

Hiroki Tomioka — Ritsumeikan University

Kento Suzuki — Ritsumeikan University

Yukihiro Kubo — Ritsumeikan University

13:10-13:30 ThA02.4

*Corresponding Point Determination by Bilateral Search*

Kohei Okishio — Kobe City College of Technology

Yoshiharu Koya — Kobe City College of Technology

13:30-13:50 ThA02.5

*Pedestrian Navigation Algorithm by Gaussian Sum Filters Using GNSS Raw Data with Smartphones*

Shinya Miyai — Ritsumeikan University

Naoki Tanaka — Ritsumeikan University

Yukihiro Kubo — Ritsumeikan University

**ThB01** Meeting Room 1 (1F)/Online

## Stochastic Optimization Methods and Evolutionary Methods

Chair: Kiyotsugu Takaba — Ritsumeikan University

Co-Chair: Osamu Fukayama — National Institute of Information and Communications Technology

14:05-14:25 ThB01.1

*A Simple PDE-Constrained Optimization Problem to Evaluate the Strategy for Fishery Resource Transportation*

Hidekazu Yoshioka — Shimane University
Tomomi Tanaka — Shimane University
Masahiro Horinouchi — Shimane University
Futoshi Aranishi — Shimane University

14:25-14:45 ThB01.2

*Statistical Property of Solutions of Gradient System with Degenerated Gaussian Noise Input*

Satoru Iwasaki — Osaka University
Toshiharu Hatanaka — The University of Fukuchiyama

14:45-15:05 ThB01.3

*A Support Vector Machine based Approach to Chance Constrained Problems Using Huge Data Sets*

Kiyoharu Tagawa — Kindai University

15:05-15:25 ThB01.4

*An Asynchronous Heuristic Algorithm for Generalized Mutual Assignment Problem: Gossip-Based Approach*

Yuki Amemiya — Nara Institute of Science and Technology
Kenta Hanada — Nara Institute of Science and Technology
Kenji Sugimoto — Nara Institute of Science and Technology

**ThB02** Training Room (1F)/Online

## Mathematical Finance

Chair: Masaki Ogura — Osaka University

Co-Chair: Toru Kaise — University of Hyogo

14:05-14:25 ThB02.1

*Static Hedge of Levy Timing Risk*

Tatsuki Hashimoto — Ritsumeikan University
Jirô Akahori — Ritsumeikan University

14:25-14:45 ThB02.2

*Numerical Experiments of Dynamic Cointegrated Pairs Trading with Mean-Variance Criterion*

Takuga Oh — Hosei University
Kazuhiro Yasuda — Hosei University

14:45-15:05 ThB02.3

*Generalization of Symmetrization of Stochastic Differential Equations to $C^2$-boundary*

Yuma Tamura — Ritsumeikan University

15:05-15:25 ThB02.4

*Numerical Comparisons of Optimal Timing for Selling a Stock under Complete/Incomplete Information*

Tsubasa Ito — Hosei University
Kazuhiro Yasuda — Hosei University

**ThP01** Meeting Room 1 (1F)/Online

## Special Lecture

Chair: Yasumasa Fujisaki, Osaka University

Co-Chair: Takayuki Wada, Osaka University

15:40-16:40 ThP01.1

*Stochastic Approaches Towards Distributed Algorithms*

Hideaki Ishii, Tokyo Institute of Technology

**FrC01** Meeting Room 1 (1F)/Online

## Analysis of Stochastic Systems and Stochastic Processes

Chair: Satoshi Satoh — Osaka University

Co-Chair: Satoru Iwasaki — Osaka University

09:20-09:40 FrC01.1

*On the Stability Analysis of the Stochastic Infectious Model under Subclinical Infections*

Masaaki Ishikawa — Yamaguchi Gakugei University

09:40-10:00 FrC01.2

*Survey for Double Barrier Backward Doubly Stochastic Differential Equations*

Tadashi Hayashi — Mitsubishi UFJ Trust and Banking Corporation

10:00-10:20 FrC01.3

*Stochastic Analysis of Discrete Hyperbolic Brownian Motion*

Jiro Akahori — Ritsumeikan University

Reina Hashimoto — Ritsumeikan University

10:20-10:40 FrC01.4

*Performance of Controllers Based on Optimally Controlled Stationary States for Nonlinear Stochastic Systems*

Masahiko Tamai — Toshiba Lightech Co. Ltd.

Hiroyuki Asahara — Okayama University of Science

Hirokazu Ohtagaki — Okayama University of Science

10:40-11:00 FrC01.5

*Introduction to Nash Tracking with Preview by State Feedback for Linear Discrete-Time Systems*†

Gou Nakura — No affiliation

†The title has been modified based on the author's request (Oct. 30, 2020).

**FrC02** Training Room (1F)/Online

## Applications Related to Stochastic Processes

Chair: Yukihiro Kubo — Ritsumeikan University

Co-Chair: Kenta Hanada — Nara Institute of Science and Technology

09:20-09:40 FrC02.1

*Visualizing Dynamic Deformation Motion of Colloidal Nanosheet from CLSM Images Using Two-Dimensional Warping*

Xie Zhenyu — Fukuoka Institute of Technology

Hiroyuki Fujioka — Fukuoka Institute of Technology

Nobuyoshi Miyamoto — Fukuoka Institute of Technology

Shinya Anraku — Fukuoka Institute of Technology

Akinori Hidaka — Tokyo Denki University

Hiroyuki Kano — Tokyo Denki University

09:40-10:00 FrC02.2

*Convolutional Neural Network Based on Temporal Pose Features for Surgical Procedure Recognition*

Shota Kishi — Tokyo Denki University

Nozomu Suzuki — Tokyo Denki University

Shota Tsuyuki — Tokyo Denki University

Takio Kurita — Hiroshima University

Fujio Miyawaki — Tokyo Denki University

Akinori Hidaka — Tokyo Denki University

10:00-10:20 FrC02.3

*Noise Reduction of SEM Images Using U-net with SSIM Loss Function*

Koshiro Nagano — Tokyo Denki University

Yoshiharu Mukouyama — Tokyo Denki University

Takashi Nishimura — Osaka Research Institute of Industrial Science and Technology

Hiroyuki Fujioka — Fukuoka Institute of Technology

Kenji Watanabe — National Institute of Advanced Industrial Science and Technology

Takio Kurita — Hiroshima University

Akinori Hidaka — Tokyo Denki University

10:20-10:40 FrC02.4

*Properties of Estimated Models for Event Related Potential Evoked by Attentional Task*

Kunihiko Oura — Kokushikan University

Kanako Mikami — Kokushikan University

10:40-11:00 FrC02.5

*Decoding Sensory Responses in a Rat Brain Cortex Using a Gaussian-Process Regression Filter*

Osamu Fukayama — NICT & Osaka Univ.

Keisuke Take — Osaka Univ.

Takafumi Suzuki — NICT & Osaka Univ.

**FrD01** Meeting Room 1 (1F)/Online

## Filtering and Control of Stochastic Systems and Stochastic Processes

Chair: Kazuyoshi Hatada — Fukuoka University

Co-Chair: Takayuki Wada — Osaka University

11:15-11:35 FrD01.1

*Constrained RLS Identification of Equivalent Circuit Model Parameters of Lithium-Ion Battery*

Ryuta Utsunomiya — Ritsumeikan University
Lei Lin — Ritsumeikan University
Kiyotsugu Takaba — Ritsumeikan University
Masahiro Fukui — Ritsumeikan University

11:35-11:55 FrD01.2

*An Improvement of Attitude Estimation based on Stochastic Kinematics Modeling on $SO(3)$*

Satoshi Satoh — Osaka University
Katsuhiko Yamada — Osaka University

11:55-12:15 FrD01.3

*On a New Low-Rank Kalman-Bucy Filter and Its Convergence Property*

Shuto Yamada — Kyoto University
Kentaro Ohki — Kyoto University

12:15-12:35 FrD01.4

*Ensemble Kalman Filter Using Gaussian-Sum Predicted State Probability Density Functions*

Masaya Murata — Japan Aerospace Exploration Agency
Isao Kawano — Japan Aerospace Exploration Agency
Koichi Inoue — Japan Aerospace Exploration Agency

12:35-12:55 FrD01.5

*Introduction to Nash Tracking with Preview by State Feedback for Linear Discrete-Time Markovian Jump Systems*†

Gou Nakura — No affiliation

**FrD02** Training Room (1F)/Online

## Applications Related to Stochastic Systems

Chair: Jiro Akahori — Ritsumeikan University

Co-Chair: Hiroyuki Fujioka — Fukuoka Institute of Technology

11:15-11:35 FrD02.1

*Control System with Anti-Windup Compensation for Water Level Control of Flash Chamber in a Spray Flash Desalination System via Stochastic Processes*

Yoshitaka Matsuda — Saga University
Ryoichi Sakai — Saga University
Takenao Sugi — Saga University
Satoru Goto — Saga University
Takeshi Yasunaga — Saga University
Yasuyuki Ikegami — Saga University

11:35-11:55 FrD02.2

*Three Degree-of-freedom Stochastic Modeling of Human-bicycle Balance Fluctuations*

Mikinori Ito — Utsunomiya University
Hayate Kaido — Utsunomiya University
Yoshikazu Yamanaka — Utsunomiya University
Katsutoshi Yoshida — Utsunomiya University

11:55-12:15 FrD02.3

*Modeling of Articulator Using Vocal Tract Area Function by Reflection Coefficients of Burg's Method*

Hiroya Nagayama — Tokyo Denki University
Keisuke Nogi — Tokyo Denki University
Shogo Saito — Tokyo Denki University
Izumi Hanazaki — Tokyo Denki University

12:15-12:35 FrD02.4

*Sampled-data Suboptimal State Estimation over Lossy Networks*

Kenji Sugimoto — Nara Institute of Science and Technology
Masaki Ogura — Osaka University
Kenta Hanada — Nara Institute of Science and Technology
Toshitaka Aihara — Nara Institute of Science and Technology

12:35-12:55 FrD02.5

*Inter-Clique Influence Networks*

Emerico Aguilar — Osaka University
Yasumasa Fujisaki — Osaka University

†The title has been modified based on the author's request (Oct. 30, 2020).