

November 1, 2013 (Friday)

Session: FA1, 10:20–11:40, Room A
Modeling and Filtering of Stochastic Processes
Chair: Tokuo Fukuda (Otemon Gakuin University)

10:20–10:40

FA1-1 On General Form of Gaussian Sum Filter
T. Katayama (Ritsumeikan University)

10:40–11:00

FA1-2 An Improved Method of Optimization of Linear Observations for the Stationary Kalman Filter
Y. Takeuchi and H. Nakai (Osaka University of Education)

11:00–11:20

FA1-3 State Estimation for Networked System with Random Delay Using Kalman Filter
M. Yagi and Y. Sawada (Kyoto Institute of Technology)

11:20–11:40

FA1-4 Adaptive Identification for Factor Model with Jump Processes
S. Aihara (Tokyo University of Science) and A. Bagchi (Univeristy of Twente)

Session: FB1, 10:20–11:40, Room B
Computer Vision and Image Processing 1
Chair: Kohji Kamejima (Osaka Institute of Technology)

10:20–10:40

FB1-1 Information Theoretic Geometric Features Selection for 3-D Object Recognition
S. Matsuzaki, M. Maeda and K. Inoue (Kyushu Institute of Technology)

10:40–11:00

FB1-2 Target Tracking for Networked Moving Camera using Unsynchronous Multiple Sensor Data
T. Umetani, M. Tanaka, M. Wada (Konan University) and M. Ito (Maizuru National College of Technology)

11:00–11:20

FB1-3 Automatic Moving Person Detection in Lecture Scene
H. Nishino and T. Saitoh (Kyushu Institute of Technology)

11:20–11:40

FB1-4 A Study on Intelligent Security Camera for Crime Scene Detection
A. Miyahara, K. Shimabukuro and I. Nagayama (University of the Ryukyus)

Session: FC1, 10:20–11:40, Room C

Mathematical Finance 1

Chair: Yukie Yasuda (American Home Assurance Company)

10:20–10:40

FC1–1 A degenerate elliptic equation arising in an optimization problem under partial information
Y. Watanabe (Osaka University)

10:40–11:00

FC1–2 The Effectiveness of Unconventional Monetary Policy in USA
Y. Sawada (Kwansei Gakuin University)

11:00–11:20

FC1–3 Efficiency of Quantitative Easing in Japan during (2001,2006) through Estimation of
Precautionary Money Demand
Y. Morita and S. Miyagawa (Kyoto Gakuen University)

11:20–11:40

FC1–4 On Effects of Estimations and Information for Expected Log-Utility Maximization Problems
Y. Asakura and K. Yasuda (Hosei University)

Session: FA2, 13:10–14:50, Room A

System Identification and Parameter Estimation

Chair: Kenji Sugimoto (Nara Institute of Science and Technology)

13:10–13:30

FA2–1 Superstatistics and System Identification for A Class of Generalized Cauchy Processes
H. Konno, Y. Uchiyama (University of Tsukuba) and I. Pazsit (Chalmers Institute of
Technology)

13:30–13:50

FA2–2 A Study of Relation Between Robustness of Parameter Estimation and Model Order in System
Identification - Revised
M. Matsubara

13:50–14:10

FA2–3 Identification of Unknown Parameters of Partially Observed Discrete-time Stochastic Systems
via Pseudomeasurement Approach
A. Tanikawa (Osaka Institute of Technology) and Y. Sawada (Kyoto Institute of Technology)

14:10–14:30

FA2–4 Grey-box modeling for mechanical systems in frequency domain
H. Tanaka (Hiroshima University) and Y. Ohta (Kyoto University)

14:30–14:50

FA2–5 A signal for online whiteness testing generated by recursive subspace model identification from
closed-loop data
H. Oku (Osaka Institute of Technology)

Session: FB2, 13:10–14:30, Room B
Computer Vision and Image Processing 2
Chair: Takeshi Saitoh (Kyushu Institute of Technology)

13:10–13:30

FB2–1 Estimation of Background Images using the Levinson Algorithm
Y. Koya and F. Minato (Kobe City College of Technology)

13:30–13:50

FB2–2 Discrimination Between Real and Forged Notes Using Subband Images
T. Kodama, S. Omatu and H. Araki (Osaka Institute of Technology)

13:50–14:10

FB2–3 Compression of Digital-Ink with Pen Slip Using Optimal L_1 Smoothing Splines
H. Fujioka (Fukuoka Institute of Technology) and H. Kano (Tokyo Denki University)

14:10–14:30

FB2–4 Stochastic Sub-sampling of Environmental Saliency
K. Kamejima (Osaka Institute of Technology)

Session: FC2, 13:10–14:50, Room C
Mathematical Finance 2
Chair: Shin Ichi Aihara (Tokyo University of Science)

13:10–13:30

FC2–1 Earthquake Insurance Reserves Implied by a Coherent Risk Measure
J. Akahori, Y. Imamura, H. Ohgaki and K. Uchida (Ritsumeikan University)

13:30–13:50

FC2–2 The Put-Call Symmetry Method by a Higher-Order Scheme
R. Akimoto, Y. Imamura and N. Shimizu (Ritsumeikan University)

13:50–14:10

FC2–3 Exact Simulation of Multi-dimensional Diffusions
S. Tateiri (Ritsumeikan University)

14:10–14:30

FC2–4 Wiener-Hopf Euler-Maruyama Scheme for Stochastic Differential Equations
T. Inoue (Ritsumeikan University)

14:30–14:50

FC2–5 Strong Rate of Euler-Maruyama Approximation for Stochastic Differential Equations with Irregular Coefficients
D. Taguchi (Ritsumeikan University) and N. H. Long (Hanoi National University of Education)

Session: FD2, 13:10–14:50, Room D
Statistical Methods for GNSS Navigation
Chair: Toshiyuki Aoki (Hitachi, Ltd.)

13:10–13:30

FD2–1 Improvement of INS-Aided GPS Tracking Performance under Strong Ionospheric scintillation
T. Tsujii, T. Fujiwara and T. Kubota (Japan Aerospace Exploration Agency (JAXA))

13:30–13:50

FD2–2 Improvement of GPS Precise Point Positioning Accuracy in Urban Canyons by Using Barometric Pressure Sensor
M. Ozaki, M. Ohashi, Y. Kubo and S. Sugimoto (Ritsumeikan University)

13:50–14:10

FD2–3 RTK-VPPP Algorithms in Urban Canyons
S. Sugimoto, Y. Suzuki and Y. Kubo (Ritsumeikan University)

14:10–14:30

FD2–4 Regional Ionospheric VTEC Estimation Applied by Spherical Cap Harmonic Analysis and Kalman Filter
M. Ohashi, K. Nishimoto, Y. Kubo and S. Sugimoto (Ritsumeikan University)

14:30–14:50

FD2–5 Klobuchar Like Regional Ionospheric Models - Further Investigation and Results
K. Nishimoto, M. Ohashi, Y. Kubo and S. Sugimoto (Ritsumeikan University)

Session: FA3, 15:10–16:30, Room A
Stochastic Optimization Methods and Evolutionary Methods
Chair: Satoru Goto (Saga University)

15:10–15:30

FA3–1 Study on Adiabatic Quantum Computation for Solving Linear Algebraic Equation
S. Nakayama (Kagoshima University)

15:30–15:50

FA3–2 A Matrix Expression of Finite Horizon Optimal Control Algorithm for Stochastic Logical Dynamical Systems
Y. Wu (Harbin University of Science and Technology) and T. Shen (Sophia University)

15:50–16:10

FA3–3 Randomized Algorithms for Optimal Power Flow
T. Wada, R. Morita, T. Asai (Osaka University), I. Masubuchi (Kobe University) and Y. Fujisaki (Osaka University)

16:10–16:30

FA3–4 Optimal Power Flow Problem with Energy Storage, Voltage Control and Reactive Power
A. Zeinalzadeh and R. Ghorbani (University of Hawaii at Manoa)

Session: FB3, 15:10–16:30, Room B
Computer Vision and Image Processing 3
Chair: Tomohiro Umetani (Konan University)

15:10–15:30

FB3–1 A Study on Simple Gaze Tracking Interface for Laptop PC
M. Higa and I. Nagayama (University of the Ryukyus)

15:30–15:50

FB3–2 Gaze Estimation using Inside-Out Camera for First Person Vision
J. Iwagami and T. Saitoh (Kyushu Institute of Technology)

15:50–16:10

FB3–3 Image Zooming using Total Variation Minimization
M. Ito, Y. Kubo and S. Sugimoto (Ritsumeikan University)

16:10–16:30

FB3–4 Study on Noninvasive MRI Measurement of the Temperature Distribution
S. Nakamura (Kokushikan University), M. Nakamura (Tokyo Therapeutic Institute), Y. Yamakawa (Okinawa College of Integrative Medicine) and Y. Nikawa (Kokushikan University)

Session: FC3, 15:10–16:30, Room C

Mathematical Finance 3

Chair: Kazuhiro Yasuda (Hosei University)

15:10–15:30

FC3–1 Dynamic Capital Growth Model with Uncertain Technological Changes
J. Akahori (Ritsumeikan University), L. Taschini (London School of Economics) and H. Yu (Ritsumeikan University)

15:30–15:50

FC3–2 On Optimal Consumption-Investment Problems with a Stochastic Factor Model via Viscosity Approach
M. Kondo (Osaka University)

15:50–16:10

FC3–3 Arbitrage Opportunity on Nonlinear Wealth Processes
K. Thoednithi (Osaka University)

16:10–16:30

FC3–4 Optimal execution problem: a combined stochastic optimal control approach
M. Ieda (Tokyo Institute of Technology)

Session: FD3, 15:10–16:30, Room D

Applications to Stochastic Processes and Stochastic Systems

Chair: Masahiro Tanaka (Konan University)

15:10–15:30

FD3–1 A Map-matching Method with a Function to Calculate Errors of Position and Direction Angle of Road Data for Car-navigation Systems
T. Aoki, M. Bando, T. Hiruta (Hitachi, Ltd.), K. Kato, A. Kawabata and Z. Liu (Clarion Co., Ltd.)

15:30–15:50

FD3–2 The Effect of Visual Feedback on Coupled Balancing Tasks with Artificial Controllers
S. Matsumoto and K. Yoshida (Utsunomiya University)

15:50–16:10

FD3–3 Reliability Prediction Methods Using Real Options Based on Hierarchical Bayesian Models
T. Kaise (University of Hyogo)

16:10–16:30

FD3–4 Real-Time Guidance, Control and Targeting Algorithms for Autonomous Planning and Execution of Space Operations
D. Azimov (University of Hawaii at Manoa)

Session: IS, 16:50–17:50, Room B+C

Invited Session

Chair: Shiro Tamaki (University of the Ryukyus)

16:50–17:50

IS–1 Insider's maximal logarithmic utility in markets driven by additive processes
M. Yamazato (University of the Ryukyus)

November 2, 2013 (Saturday)

Session: SA1, 10:00–11:40, Room A

Modeling, Analysis and Control of Stochastic Systems

Chair: Yukihiro Kubo (Ritsumeikan University)

10:00–10:20

SA1-1 Analysis of Deterioration of Rotating Equipment with Misalignment via Experimental Data
T. Matsuura, Y. Matsuda, T. Sugi and S. Goto (Saga University)

10:20–10:40

SA1-2 Design of Electromagnetic and Centrifugal Force Pitch Angle Stall Controller on Application to Small-Scaled Wind Turbine System
F. Asharif, S. Tamaki, T. Hirata, T. Nagado and T. Nagtata (University of the Ryukyus)

10:40–11:00

SA1-3 Balancing of Overdamped Virtual Pendulums: Universal Properties of Human Control
S. Kanemoto, I. Lubashevsky, T. Miyazawa, T. Suzuki and A. Zgonnikov (University of Aizu)

11:00–11:20

SA1-4 Probabilistic Dynamical Trap: Intrinsic Stochasticity of Human Control
A. Zgonnikov and I. Lubashevsky (University of Aizu)

11:20–11:40

SA1-5 Synchronization over stochastically switching networks with imperfect prior information
K. Takaba (Ritsumeikan University)

Session: SB1, 10:00–11:40, Room B

Medical and Biomedical Systems

Chair: Kunihiko Oura (Kokushikan University)

10:00–10:20

SB1-1 On Effect of Visual Support for Articulation in Pronunciation Correction
S. Ito, T. Yamazaki and I. Hanazaki (Tokyo Denki University)

10:20–10:40

SB1-2 Consideration on Human Brain Activities under Glucose Tolerance Test
K. Oura, K. Mikami (Kokushikan University) and I. Hanazaki (Tokyo Denki University)

10:40–11:00

SB1-3 A diffusion approximation of a stochastic model of metastasis formation
J. Akahori, Y. Imamura, T. Nakai, A. Naganawa and T. Shibutani (Ritsumeikan University)

11:00–11:20

SB1-4 Estimation of the pulmonary elastance and setting of the ventilation condition using fuzzy logic
M. Nakamichi, S. Kanae and K. Uosaki (Fukui University of Technology)

11:20–11:40

SB1-5 A Study of Mathematical Model of Infection Spread on Caprine Arthritis Encephalitis and Its Application
T. Hirata, Y. Yonahara, F. Asharif (University of the Ryukyus), T. Omatsu (Tokyo University of Agriculture and Technology), Y. Nishihira, Y. Kinjo (University of the Ryukyus), T. Mizutani (Tokyo University of Agriculture and Technology) and S. Tamaki (University of the Ryukyus)

Session: SC1, 10:00–11:40, Room C

Mathematical Finance 4

Chair: Masaaki Ishikawa (Yamaguchi University)

10:00–10:20

SC1-1 On absolute rates of a triple decrement model in life insurance mathematics

T. Fujita and M. Sato (Chuo University)

10:20–10:40

SC1-2 Discrete stochastic calculus and its applications to pricing a lookback option

T. Fujita (Chuo University) and M. Suga (Hasuda city hall)

10:40–11:00

SC1-3 On Asymptotic Behaviors of Exponential Hedging: Numerical Examples in the Basis-Risk Model

K. Takino (Nagoya University of Commerce and Business)

11:00–11:20

SC1-4 Classification Method for High-Dimensional Articles Using Parallelized Self-Organizing Map

H. Uyama, N. Koide and K. Okuhara (Osaka University)

11:20–11:40

SC1-5 The Application of the RMT-test on the high-frequency price time series

M. Tanaka-Yamawaki and X. Yang (Tottori University)

Session: SA2, 13:10–14:50, Room A

Analysis of Stochastic Processes 1

Chair: Toru Kaise (University of Hyogo)

13:10–13:30

SA2-1 Bifurcation Analysis in the Stochastic Lumped Parameter System

M. Ishikawa (Yamaguchi University)

13:30–13:50

SA2-2 Taylor method of initial value problem in diffusion

T. Nishitani and K. Yasutomi (Ritsumeikan University)

13:50–14:10

SA2-3 Towards Multi-Dimensional Nonlinear Langevin Equation

I. Lubashevsky (University of Aizu)

14:10–14:30

SA2-4 Stochastic Systems on Finite State Space

C. F. Martin, Y. Pang and X. Xue (Texas Tech University)

14:30–14:50

SA2-5 Existence of Chaotic Oscillation in Nonlinear Systems of Van der Pol-Mathieu Type

H. Ohtagaki and T. Yamaguchi (Okayama University of Science)

Session: SB2, 13:10–14:30, Room B
Signal Detection and Statistical Signal Processing
Chair: Hiroyuki Fujioka (Fukuoka Institute of Technology)

13:10–13:30

SB2–1 A Study of Classification Methods in Auditory Steady-State Response based Brain-Computer Interface
G. Takahashi and K. Inoue (Kyushu Institute of Technology)

13:30–13:50

SB2–2 Analysis of parameter estimation error for Brillouin distributed sensing
K. Nishiguchi (Osaka University)

13:50–14:10

SB2–3 Odor Measurement and Classification Using Metal Oxide Semiconductor Gas Sensors
D. Hayashi, S. Omatu and H. Araki (Osaka Institute of Technology)

14:10–14:30

SB2–4 Semi-Blind Channel Estimation for QAM-OFDM System
H. Sogo, H. Tanaka, T. Matszaki, H. Shiratsuchi and H. Gotanda (Kinki University)

Session: SC2, 13:10–14:30, Room C
Chaos and Fractal
Chair: Yasumasa Fujisaki (Osaka University)

13:10–13:30

SC2–1 Remarks on a class of periodic points for p -adic transformations and stylized Chebyshev polynomials
M. Takei (Yokohama National University)

13:30–13:50

SC2–2 Noise-induced effect on asymptotic periodicity for random dynamical systems
H. Ishitani (Mie University) and K. Ishitani (Meijo University)

13:50–14:10

SC2–3 Velocity Fluctuation of Hole in 1D Defect Turbulence
Y. Uchiyama and H. Konno (University of Tsukuba)

14:10–14:30

SC2–4 On Convergences of Estimates Concerned with Fuzzy Random Data
T. Fukuda (Otemon Gakuin University)

Session: SA3, 15:10–16:30, Room A
Analysis of Stochastic Processes 2
Chair: Yoshiki Takeuchi (Osaka University of Education)

15:10–15:30

SA3–1 Guerrilla Rainstorm prediction of using a state transition
S. Inafuku, S. Tamaki, T. Hirata (University of the Ryukyus) and S. Ohsawa (Weathernews Inc.)

15:30–15:50

SA3–2 Some basic properties of a rotor-router model with i.i.d. initial rotor-routers on the line
Y. Ide (Kanagawa University), N. Konno and M. Takei (Yokohama National University)

15:50–16:10

SA3–3 Convergence Analysis of Multi-Agent Consensus with Noisy Communication
R. Morita, T. Wada (Osaka University), I. Masubuchi (Kobe University), T. Asai and Y. Fujisaki (Osaka University)

16:10–16:30

SA3–4 On the Theory of a Time-varying Bilinear Stratonovich Stochastic Differential System and its Application to a Dynamic Circuit
N. S Patil and S. N Sharma (S V National Institute of Technology)

Session: SB3, 15:10–16:30, Room B
Time Series Analysis and Statistical Signal Processing
Chair: Yoji Morita (Kyoto Gakuen University)

15:10–15:30

SB3–1 A Scheme for Independent Component Analysis via Adjoint Polynomial Matrix
M. Marimon, D. Tanaka and K. Sugimoto (Nara Institute of Science and Technology)

15:30–15:50

SB3–2 Sound Separation by Impulse Response
T. Tamai and S. Omatu (Osaka Institute of Technology)

15:50–16:10

SB3–3 A Noise Reduction Method Using Joint Distribution of Observed Signals
T. Ishibashi, Y. Tajiri (Kumamoto National College of Technology), K. Inoue (Kyushu Institute of Technology) and H. Gotanda (Kinki University)

16:10–16:30

SB3–4 Framewise DOA Estimation of Sound Sources
N. Iwasaki (Kyushu Institute of Technology), S. Nishimura (Kinki University), K. Inoue (Kyushu Institute of Technology) and H. Gotanda (Kinki University)

Session: SC3, 15:10–16:10, Room C

Stochastic Robotics

Chair: Ken'ichi Nishiguchi (Osaka University)

15:10–15:30

SC3-1 Parameter Estimation of Mixture PDF Model for Mobile Robots by EM Algorithm

M. Tanaka, M. Wada, T. Umetani (Konan University) and M. Ito (Maizuru National College of Technology)

15:30–15:50

SC3-2 Detection of Surface of the Road using Depth Sensor on the Pan-Tilt Unit for an Inverted Pendulum Mobile Robot

T. Matsuda, N. Hatakeyama, M. Takimura, M. Wada, M. Tanaka, T. Umetani (Konan University) and M. Ito (Maizuru National College of Technology)

15:50–16:10

SC3-3 Basic Experiments of Position Measurement for an Underwater Mobile object using the Particle Filter

F. Takemura, N. Uechi (Okinawa National College of Technology), K. Kawabata (RIKEN), S. Sagara (Kyushu Institute of Technology) and S. Tamaki (University of the Ryukyus)