

SSS'12
The 44th International Symposium
on
Stochastic Systems Theory and Its Applications
November 1-2, 2012
Kokushikan University, Tokyo, JAPAN

Session Schedule

November 1, 2012 (Thursday)

From	To	Room A	Room B	Room C	Room D
10:30	10:40		Opening Address (Room S)		
10:40	11:50	Session: TA0 (Room S) Modeling and Filtering of Stochastic processes Chair: Y.Morita (Kyotogakuen univ.)			
11:50	13:00		Lunch (Sky Rounge, 34-10F)		
13:00	14:10	Session: TA1 Statistical Methods for GNSS Navigation Chair: T.Izumi (Tokyo Denki Univ.)	Session: TB1 System Identification and Parameter Estimation 1 Chair: S.Aihara (Tokyo Univ.of Science)	Session: TC1 Analysis of Stochastic Processes 1 Chair: Y.Takeuchi (Osaka Univ. of Education)	
14:10	14:40		Coffee Break (Sky Rounge, 34-10F)		
14:40	16:10	Session: TA2 Image and Signal Processing Chair: K.Kamejima (Osaka Inst. Of Tech)	Session: TB2 Stochastic Optimization Methods Chair: T.Kaise (Univ. of Hyogo)	Session: TC2 Applications in Engineering related to Stochastic Processes and Stochastic Systems 1 Chair: K.Kameyama (Fukui National College of Technology)	Session: TD2 Modeling of Stochastic Systems Chair: T.Fukuda (Otemon Gakuin University)
16:10	16:25		Coffee Break (Sky Rounge, 34-10F)		
16:25	17:45		Invited Session (Room S) Chair: H.Kano (Tokyo Denki Univ.)		
18:00	18:50		From Kokushikan University to Sunshine city (Ikebukuro)		
19:00	21:00		Banquet (Sunshine city)		

November 2, 2012 (Friday)

From	To	Room A	Room B	Room C	
10:45	12:15	Session: FA1 Stochastic Optimization Methods and Evolutionary Methods Chair: M.Tanaka (Konan Univ.)	Session: FB1 Applications in Engineering related to Stochastic Processes and Stochastic Systems 2 Chair: T.Umetani (Konan Univ.)	Session: FC1 Analysis of Stochastic Processes 2 Chair: K.Inoue (Kyusyu Institute of Technology)	
12:15	13:10		Lunch (Sky Rounge, 34-10F)		
13:10	15:00	Session: FA2 Control of Stochastic Systems and Stochastic Processes Chair: Y.Fujisaki (Osaka Univ.)	Session: FB2 Signal Detection and Statistical Signal Processing Chair: H.Fujioka (Fukuoka Institute of Technology)	Session: FC2 System Identification and Parameter Estimation 2 Chair: Y.Wakasa (Yamaguchi Univ.)	
15:00	15:30		Coffee Break (Sky Rounge, 34-10F)		
15:30	17:05	Session: FA3 Applications in Engineering related to Stochastic Processes and Stochastic Systems 3 Chair: T.Shimizu (Kokushikan Univ.)	Session: FB3 Modeling, Filtering of Stochastic Systems and Stochastic Processes Chair: Y.Kubo (Ritsumeikan Univ.)		

November 1, 2012 (Thursday)

Session: TA0, 10:40–11:50, Room S

Modeling and Filtering of Stochastic processes

Chair: Y.Morita (Kyotogakuen univ.)

TA0-1	Identification Problem for Stochastic Distributed Parameter Systems with Unknown Boundary Conditions S. Aihara (Tokyo Univ. of Science) and A. Bagchi (Twente University)	1
TA0-2	On Statistical Moments for Capricious Vague Perceptions T. Fukuda (Otemon Gakuin University)	3
TA0-3	A New Method of Optimization of Linear Observations for the Stationary Kalman Filter Y. Takeuchi and H. Nakai (Osaka Univ. of Education)	5

Session: TA1, 13:00–14:10, Room A

Statistical Methods for GNSS Navigation

Chair: T.Izumi (Tokyo Denki Univ.)

TA1-1	Investigation of Regional Ionospheric models for GNSS Positioning in Japan M. Ohashi, K. Nishimoto, Y. Kubo and S. Sugimoto (Ritsumeikan University) 7	
TA1-2	Carrier Phase Based GNSS Positioning with Ambiguity Resolution Using Gaussian Sum Filter Y. Kubo, K. Ohta, Y. Ikebuchi and S. Sugimoto (Ritsumeikan Univ.)	9
TA1-3	A Map-matching Method Using a Chi-squared Statistic for Car-navigation Systems T. Aoki, M. Bando and T. Hiruta (Hitachi Ltd.) and K. Kato, A. Kawabata and Z. Liu (Clarion Co. Ltd.)	11

Session: TB1, 13:00–14:10, Room B

System Identification and Parameter Estimation 1

Chair: S.Aihara (Tokyo Univ.of Science)

TB1-1	Identification of Partially Unknown System Matrix of Discrete-time Stochastic Systems via Pseudomeasurement Approach A. Tanikawa and Y. Sawada (Osaka Institute of Technology.)	13
TB1-2	The Use of Inequality Constraints on Unknown Parameters as Pseudomeasurement in System Identification A. Ohsumi (Kyoto Institute of Technology) and K. Kameyama (Fukui National College of Technology)	15
TB1-3	A Study of Relation Between Robustness of Parameter Estimation and Model order in System identificatiion M. Matsubara (Ritsumeikan University)	17

Session: TC1, 13:00–14:10, Room C
Analysis of Stochastic Processes 1
Chair: Y.Takeuchi (Osaka Univ.of Education)

TC1-1	P=NP-hard: H-infinity Static Output Feedback Control and H2 Estimation for Discrete-time Linear Systems by LMIs Y. Kuroiwa	19
TC1-2	Reliability Analysis of Software Debugging Processes Based on Hierarchical Bayesian Methodologies for Remaining Errors T. Kaise (University of Hyogo)	21
TC1-3	Levy Random Walks as Nonlinear Brownian Motion I. Lubashevsky (University of Aizu), K. Saito and Y. Uchimura (Meijo University)	23

Session: TA2, 14:40–16:10, Room A
Image and Signal Processing
Chair: K.Kamejima (Osaka Inst. Of Tech)

TA2-1	Single Image Super-Resolution using Total Variation T. Miyazaki, M. Ito, Y. Kubo and S. Sugimoto (Ritsumeikan University)	25
TA2-2	Blind Restoration of Motion Blurred Images by Applying a Non-iterative Algorithm S. Kuroyanagi, R. Maruo, Y. Kubo and S. Sugimoto (Ritsumeikan University)	27
TA2-3	Preamble Design for Joint estimation of Channel CFO and Receiver I/Q-Imbalance in OFDM Systems E. Manasseh, S. Ohno and M. Nakamoto (Hiroshima University)	29
TA2-4	Developing of pronunciation training support system M. Ishii and I. Hanazaki (Tokyo Denki University)	31

Session: TB2, 14:40–16:10, Room B
Stochastic Optimization Methods
Chair: T.Kaise (Univ. of Hyogo)

TB2-1	Integrated Optimization Using Global and Local Modeling T. Onodera, K. Tamura and K. Yasuda (Tokyo Metropolitan University)	33
TB2-2	A Stopping Rule for Finite-Difference Stochastic Approximation T. Wada and Y. Fujisaki (Osaka University)	35
TB2-3	Automatic Generation of Robust Agents Using Knowledge Database Oriented Evolutionary Computation N. Koide, K. Okuhara (Osaka University) and N. Sonehara (National Institute of Informatics)	37
TB2-4	Multi-objective Particle Swarm Optimization with Regular Graph Structure T. Uchitane, M. Yamamoto and T. Hatanaka (Osaka University)	39

Session: TC2, 14:40–16:10, Room C

Applications in Engineering related to Stochastic Processes and Stochastic Systems 1

Chair: K.Kameyama (Fukui National College of Technology)

TC2-1	A Weak Taylor Scheme with Simulating Stochastic Area N. Shimizu, K. Yoshikawa, K. Imamura, K. Kado and H. Fukunaga (Ritsumeikan University)	41
TC2-2	An Experimental Study on Coupled Balancing Tasks Between Human Subjects and Artificial Controllers S. Matsumoto, K. Yoshida (Utsunomiya University) and A. Higeta (Gunma National College of Technology)	43
TC2-3	PPP Algorithms Based on GPS/GLONASS Integration T. Miyazaki, N. Takegawa, M. Ohashi, Y. Kubo and S. Sugimoto (Ritsumeikan University)	45
TC2-4	Refining the Klobuchar Ionospheric Model with Spherical Cap Harmonic Model for GNSS Positioning K. Nishimoto, M. Ohashi, Y. Kubo and S. Sugimoto (Ritsumeikan Univarsity)	47

Session: TD2, 14:40–16:10, Room D

Modeling of Stochastic Systems

Chair: T. Fukuda (Otemon Gakuin University)

TD2-1	Knowledge Dynamics Structure Design of Corporation Based on System Dynamics K. Ding and K. Okuhara (Osaka University)	49
TD2-2	Analysis for the extraction of phonological and personal information using the vocal tract area A. Fukatu and I. Hanazaki (Tokyo Denki University)	51
TD2-3	Modeling humans perception of their own actions: the dynamical traps approach A. Zgonnikov and I. Lubashevsky (University of Aizu)	53

Session: IS, 16:25–17:45, Room S

Invited Session

Chair: H.Kano (Tokyo Denki Univ.)

IS-1	Equivalent Linearization Kalman Filter – Revisited T. Katayama (Ritsumeikan University)	55
IS-2	Further Investigation of a Gaussian Sum Filter Based on Stochastic Equivalent Linearization S. Sugimoto, Y. Kubo and M. Ohashi (Ritsumeikan University)	59

November 2, 2012 (Friday)

Session: FA1, 10:45–12:15, Room A

Stochastic Optimization Methods and Evolutionary Methods

Chair: M.Tanaka (Konan Univ.)

FA1-1	An approximation scheme for optimal stochastic control problems Y. Nakano (Tokyo Institute of Technology)	61
FA1-2	Monotone Smoothing Spline Curves Using Normalized Uniform Cubic B-splines H. Fujioka (Fukuoka Institute of Technology) and H. Kano (Tokyo Denki University)	63
FA1-3	Evolution of cooperation by indirect reciprocity with imperfect monitoring S. Uchida (RINRI Institute)	65
FA1-4	A Scenario Approach to Optimization Subject to Robust and Average LMIs N. Tsutsumoto and Y. Fujisaki (Osaka University)	67

Session: FB1, 10:45–12:15, Room B

Applications in Engineering related to Stochastic Processes and Stochastic Systems 2

Chair: T.Umetani (Konan Univ.)

FB1-1	Monotone EM Scheme for Cooperative Saliency Analysis K. Kamejima (Osaka Institute of Technology)	69
FB1-2	Output synchronization of passive agents over stochastically switching networks K. Takaba (Ritsumeikan University)	71
FB1-3	Multi-layered GMDH-type Neural Network Algorithm Using Principal Component-Regression Analysis and PSS Criterion T. Kondo, J. Ueno and S. Takao (The University of Tokushima)	73
FB1-4	Template estimation of overlapped neural spikes using Hidden Markov Model T. Haga, O. Fukayama and K. Mabuchi (University of Tokyo)	75

Session: FC1, 10:45–12:15, Room C

Analysis of Stochastic Processes 2

Chair: K.Inoue (Kyusyu Institute of Technology)

FC1-1	Origin of Stochastic Behavior in Chaotic Brownian Motion T. Shimizu (Kokushikan University)	77
FC1-2	Equivalence of Solvability Conditions to Covariance Extension Problem Y. Kuroiwa	79
FC1-3	Long Memory and Features of Fluctuation in A Fractional Generalized Cauchy Process H. Konno and Y. Uchiyama (University of Tsukuba)	81
FC1-4	Order in Chaotic Oscillation in Nonlinear Systems T. Yamaguchi and H. Ohtagaki (Okayama University of Science)	83

Session: FA2, 13:10–15:00, Room A

Control of Stochastic Systems and Stochastic Processes

Chair: Y.Fujisaki (Osaka Univ.)

FA2-1	On Noncausal H_∞ Tracking Control for Linear Impulsive Systems with Stochastic Uncertainties G. Nakura	85
FA2-2	Optimal Vaccination Problems for the Stochastic SIR Model with Saturated Treatment M. Ishikawa (Yamaguchi University)	87
FA2-3	Optimal Design System for Electromagnetic Actuator Using Integrated Optimization J. Tsuchiya, T. Kosuge and K. Yasuda (Tokyo Metropolitan University)	89
FA2-4	Virtual Stick Balancing: Statistical Invariants of Human Response S. Kanemoto, I. Lubashevsky, A. Zgonnikov, T. Miyazawa and D. Taniguchi (University of Aizu)	91
FA2-5	A Study on Tracking Control of Pan-Tilt Unit for an Inverted Pendulum Mobile Robot T. Matsuda, M. Wada, M. Tanaka, T. Umetani (Konan University) and M. Ito (Maizuru National College of Technology)	93

Session: FB2, 13:10–15:00, Room B

Signal Detection and Statistical Signal Processing

Chair: H.Fujioka (Fukuoka Institute of Technology)

FB2-1	Blind Source Separation based on Estimation for the Number of Source Signals using Hough Transform T. Ishibashi, Y. Tajiri (Kumamoto National College of Technology), K. Inoue (Kyushu Institute of Technology) and H. Gotanda (Kinki University)	95
FB2-2	Target Speech Extraction based on Orthogonalization of Joint Distribution of Observed Signals T. Ishibashi, K. Fujimori (Kumamoto National College of Technology), K. Inoue (Kyushu Institute of Technology) and H. Gotanda (Kinki University)	97
FB2-3	KanNon System Consonant Recognition for Phonemes K. Nakamura, H. Murata, T. Sagara, S. Sugimoto and Y. Kubo (Ritsumeikan University)	99
FB2-4	Optimization and experimental verification of synthetic Brillouin optical time-domain reflectometry K. Nishiguchi (Osaka Univ.), L. Che-Hsien, A. Guzik and K. Kishida (Neubrex Co.)	101
FB2-5	How does a Hot Spot come into existence? N. Shimizu and T. Tsuchiya (Ritsumeikan University)	103

Session: FC2, 13:10–14:40, Room C

System Identification and Parameter Estimation 2

Chair: Y.Wakasa (Yamaguchi Univ.)

FC2-1	Estimation of Precautionary Demand in USA Y. Morita and S. Miyagawa (Kyotogakuen University)	105
FC2-2	Calculation methods of the operational risk : Haar wavelets-based approach and the Bromwich integral approach K. Ishitani (Tokyo Metropolitan University) and K. Sato (Mitsubishi UFJ Trust Investment Technology Institute Co. Ltd.)	107
FC2-3	Analytical calculation methods of portfolio credit risk under the Vasicek multi-factor model : Haar wavelets-based approach and the Bromwich integral approach K. Ishitani (Tokyo Metropolitan University)	109
FC2-4	Decision Making Analysis of One-Room Apartment Based on Consumer's Behavior for Commodity Selection J. Shibata (Kobe Gakuin University), K. Okuhara (Osaka University) and S. Shiode (Kobe Gakuin University)	111

Session: FA3, 15:30–17:05, Room A

Applications in Engineering related to Stochastic Processes and Stochastic Systems 3

Chair: T.Shimizu (Kokushikan Univ.)

FA3-1	Neural networks invariant to Fourier transform for fault diagnosis of nonlinear systems G. Rigatos and P. Siano (Industrial Systems Institute)	113
FA3-2	Estimation of Wave Movement Using Gauss-Markov Estimation Y. Koya (Kobe City College of Technology)	115
FA3-3	Residual Life Prediction System for Condition Based Maintenance of Rotating Equipment S. Goto, K. Tsukamoto, Y. Matsuda and T. Sugi (Saga University)	117
FA3-4	Medical Image Diagnosis of Liver Cancer by Multi-layered GMDH-type Neural Network Using Principal Component-Regression Analysis and PSS Criterion T. Kondo, J. Ueno and S. Takao (The University of Tokushima)	119

Session: FB3, 15:30–17:05, Room B

Modeling, Filtering of Stochastic Systems and Stochastic Processes

Chair: Y.Kubo (Ritsumeikan Univ.)

FB3-1	State Estimation of Depth Sensor's Postures Attached to an Unstable Dynamic Object M. Tanaka (Konan University)	121
FB3-2	An Approach to Hybrid Optimal Smoothing for Linear Discrete-Time Systems with Non-Gaussian Noises G. Nakura	123
FB3-3	State Estimation of Mobile Clinet based on Sensor Data Fusion for Localization in Multistory Building T. Umetani, S. Yamane and Y. Tamura (Konan University)	125
FB3-4	Controller Parameter Tuning Based on Particle Filtering Y. Wakasa, K. Tanaka and S. Nakashima (Yamaguchi University)	127
