

ADVANCE PROGRAM
SSS'03
The 35th ISCIE International Symposium
on
Stochastic Systems Theory and Its Applications

October 30-31, 2003

International Hotel Ube

1-7-1 Shima, Ube, 755-0047, Japan

Sponsored by The Institute of Systems, Control and Information Engineers

In Association with:

The Society of Instrument and Control Engineers, Japan

The Information Processing Society of Japan

The Institute of Electrical Engineers of Japan

The Institute of Electronics, Information and Communication Engineers, Japan

Research Institute of Signal Processing, Japan

IEEE Tokyo Section: Societies of Control Systems;

Geoscience and Remote Sensing; Signal Processing; Systems, Man and Cybernetics

The Mazda Foundation

Electric Technology Research Foundation of Chugoku

Faculty of Engineering, Yamaguchi University (The 50th Anniversary Memorial Foundation)

Session Schedule

	Room A	Room B
Oct.30	10:00-12:05 A1 Neural Network and Genetic Algorithm	10:00-12:05 B1 Image Processing and Pattern Recognition
	12:05-13:10 Lunch	
	13:10-14:25 A2 Mathematical Finance and Related Topics	13:10-14:50 B2 Acoustic Signal Processing
	14:50-15:10 Coffee Break	
	15:10-17:15 A3 State Estimation	15:10-17:15 B3 Biomedical and Medical Systems
	17:20-18:20 Sunahara Memorial Lecture	
	18:30-20:30 Banquet	
Oct.31	09:00-10:40 A4 System Identification I	09:00-10:40 B4 Digital Signal Processing I
	10:40-10:50 Coffee Break	
	10:50-12:05 A5 System Identification II	10:50-12:05 B5 Digital Signal Processing II
	12:05-13:10 Lunch	
	13:10-14:25 A6 Diagnosis and Maintenance Method	13:10-14:25 B6 Time Series Analysis
	14:25-14:40 Coffee Break	
	14:40-16:20 A7 Stochastic Systems	14:40-16:45 B7 Complex and Fuzzy Systems

GENERAL INFORMATION

Date and Location

The 35th International Symposium on Stochastic System Theory and its Applications will be held on October 30-31, 2003 at International Hotel Ube, 1-7-1 Shima, Ube, 755-0047, Japan. The Symposium Program and Steering Committee joins in inviting you to participate in this annual international symposium of ISCIE. One Sunahara Memorial Lecture and fourteen technical sessions will feature a wide range of theoretical and applied topics in stochastic systems.

Language

The official Languages of the Symposium are both English and Japanese, but **slides for OHP should be prepared only in English**. Each presentation is allotted 25 minutes including discussions.

Public Transportation

From JR Ogori station (from October 1 renamed as Shin-Yamaguchi station, bullet train station) to the International Hotel Ube, please take an Ube-city Express (or Rapid) BUS for JR Ube-Shinkawa station (terminal bus stop) and get off at "Ube-Chuo" Bus Stop or JR Ube-Shinkawa station (about 30 minutes' drive). From there 5 minutes by taxi or 7 minutes on foot.

Symposium Preprints

A copy of the collection of extended abstracts will be provided to each symposium registrant. Additional copies of the preprints may be purchased at the symposium for ¥3,000/copy.

Banquet

All registrants are encouraged to participate in the banquet.

Date & Place: October 30, 18:30 – 20:30,
at International Hotel Ube

Full registration fee includes the banquet fee. Full-registrants will be invited to the banquet. Student registrants and Spouses of registrants are requested to pay ¥ 2,000 and ¥ 3,000, respectively. Although the banquet tickets are available at the registration desk, it is recommended to purchase the banquet tickets in advance together with advanced payment of registration fees.

Proceedings

Authors are requested to bring their camera-ready manuscripts for the proceedings and their **four (4) copies** to the registration desk at the Symposium. In order to assure high-quality proceedings, all manuscripts will be reviewed and only accepted ones will appear in the proceedings. Accepted papers more than six (6) pages will be charged for ¥5,000 per each exceeded two (2) pages.

Presentation tools

The OHPs for transparent films and liquid crystal projectors for Microsoft power point are prepared. However, oversea made note-PCs are not guaranteed to work with our projectors.

Registration

All participants are requested to pay the registration fees **in advance** in principle. The deadline for the advanced registration is **October 23, 2003**. Those who cannot finish the advanced registration due to unavoidable reasons are required to pay at a symposium registration desk (on-site registration). Full registration includes attendance at all technical sessions, a copy of the collection of extended abstracts and one banquet ticket. Registration fees are as follows:

	Advanced (before October 23, 2003)	On-Site
Full Registration	¥12,000	¥14,000
Student Registration	¥ 2,000	¥ 3,000
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Banquet Fees for Student and Spouse		
Student	¥2,000	
Spouse	¥3,000	

[A]

All registrants are requested to fill the following items 1)-4) in a A4-size (or Letter-size) sheet and send it via standard mail or facsimile together with a copy of a duplicate which proves the payment of the advanced registration fees before October 23.

- 1) Name of registrant
- 2) Affiliation and Address
- 3) Phone Number, Fax, and E-mail address
- 4) Participation or Not in Bus Tour (If you have accompanying persons, please write their names. For the tour a total of 28 persons are accepted on a first-come-first-served basis.)

[B]

Advanced payment of the registration fees should be done by Bank Transfer to the bank bellow.

Bank Name: Yamaguchi Bank
Branch Name: Norisada Branch Branch No.: 183
Account Title: ISCIE SSS03 TANAKA SHOGO
Account Number: 6146317

[C]

The address the sheet should be sent to is:
Prof. Shogo Tanaka, SSS'03 Secretariat
Department of Electrical and Electronic Engineering,
Faculty of Engineering, Yamaguchi University
2-16-1 Tokiwadai, Ube, 755-8611 Japan
Phone: +81-836-85-9425, FAX: +81-836-85-9401,
E-mail : tanaka@sens.eee.yamaguchi-u.ac.jp
URL: <http://www.sss03.eee.yamaguchi-u.ac.jp>

Technical Program

October 30, Thursday

Room A	Room B
<p>Session A1 10:00-12:05 Neural Network and Genetic Algorithm Chair: T. Fukuda (Otemon Gakuin Univ.)</p> <p>A1-1 10:00-10:25 <i>Reinforcement Learning System with Time Varying Parameters Using Neural Network</i> M. Obayashi, T. Oda, K. Kobayashi, T. Kuremoto and H. Kitano (Yamaguchi Univ.)</p> <p>A1-2 10:25-10:50 <i>Neural Prediction of Chaotic Time Series Using Stochastic Gradient Ascent Algorithm</i> T. Kuremoto, M. Obayashi, A. Yamamoto, and K. Kobayashi (Yamaguchi Univ.)</p> <p>A1-3 10:50-11:15 <i>An Experimental Study on Adaptive Robust PCA Neural Network</i> C. Dachapak, S. Kanae, Z.J. Yang and K. Wada (Kyushu Univ.)</p> <p>A1-4 11:15-11:40 <i>A Study of Crossover Operator in Real Coded Genetic Algorithm</i> M. Ito and M. Sugisaka (Oita Univ.)</p> <p>A1-5 11:40-12:05 <i>Revised GMDH-Type Neural Networks Using PSS or AIC Criterion for Model Selection</i> T. Kondo (Tokushima Univ.) and A. S. Pandya (Florida Atlantic Univ.)</p>	<p>Session B1 10:00-12:05 Image Processing and Pattern Recognition Chair: F. Kojima (Kobe Univ.)</p> <p>B1-1 10:00-10:25 <i>Identification of Bird's Kinds from Songs Using DP Matching and SOM</i> K. Yoshida and M. Tanaka (Konan Univ.)</p> <p>B1-2 10:25-10:50 <i>Information Extraction from Traffic Images</i> M. Tanaka, R. Hamamura (Konan Univ.) and A. Bargiela (The Nottingham Trent Univ.)</p> <p>B1-3 10:50-11:15 <i>Segmentation of Entire Circumferential Range Data by Using a Competitive Clustering Method</i> M. Maeda (Kyushu Institute of Tech.)</p> <p>B1-4 11:15-11:40 <i>Identification of Generalized Semicausal Stochastic Image Models</i> H. Kunieda, T. Nogami and S. Sugimoto (Ritsumeikan Univ.)</p> <p>B1-5 11:40-12:05 <i>Chromatic Consistency Analysis for Object Identification in Noisy Scene</i> K. Kamejima (Osaka Institute of Tech.)</p>
12:05-13:10	Lunch
<p>Session A2 13:10-14:25 Mathematical Finance and Related Topics Chair: Y. Takeuchi (Osaka Univ. of Education)</p> <p>A2-1 13:10-13:35 <i>Optimal Portfolio for Parabolic Type Infinite-Dimensional Factor Model with Power Utility</i> S. Aihara (Tokyo Univ. of Science) and A. Bagchi (FELab, Univ. of Twente)</p> <p>A2-2 13:35-14:00 <i>Evaluation of Price of a Currency Option with Knock-Out by Using Reflection Principle</i> T. Maruyama and T. Katayama (Kyoto Univ.)</p> <p>A2-3 14:00-14:25 <i>Multi-Dimensional Discrete Stochastic Calculus: Its Applications to Problems in Mathematical Finance</i> J. Akahori (Ritsumeikan Univ.)</p>	<p>Session B2 13:10-14:50 Acoustic Signal Processing Chair: K. Nishimura (Kinki Univ.)</p> <p>B2-1 13:10-13:35 <i>Unconstrained and Noninvasive Measurement of Heartbeat and Respiration Using an Acoustic Sensor Enclosed in an Air Pillow</i> A. Matsubara and S. Tanaka (Yamaguchi Univ.)</p> <p>B2-2 13:35-14:00 <i>Accurate Pipe Length Measurement Under Noisy Environment Using Stationary Waves</i> M. Okamoto, M. Nakayama and S. Tanaka (Yamaguchi Univ.)</p> <p>B2-3 14:00-14:25 <i>A Study on Acoustic Time-Of-Flight Identification in Outdoor Environment</i> Y. Fukayama (Niihama National College of Tech.)</p> <p>B2-4 14:25-14:50 <i>Optimal Location of Acoustic Sensor for Pipe Length Measurement of Branch Pipes with Open Ends</i> F. Rizkiyev, M. Okamoto and S. Tanaka (Yamaguchi Univ.)</p>
14:50-15:10	Coffee Break

<p>Session A3 15:10-17:15 State Estimation Chair: S. Aihara (Tokyo Univ. of Science)</p> <p>A3-1 15:10-15:35 <i>Minimum Variance State Estimators with Disturbance Decoupling Property for Optimal Filtering Problems with Unknown Inputs</i> A. Tanikawa (Osaka Institute of Tech.) and Y. Sawada (Kyoto Institute of Tech.)</p> <p>A3-2 15:35-16:00 <i>Nonlinear Filtering Method in INS/GPS/VMS In-Motion Alignment</i> M. Oiwa, N. Asaoka, M. Tanikawara (Ritsumeikan Univ.), T. Numajima (Daihatsu Motor Co. Ltd.), K. Kubo (Mitsubishi Electric Corp.) and S. Sugimoto (Ritsumeikan Univ.)</p> <p>A3-3 16:00-16:25 <i>Estimation of Spot on Flexible Structures Where Unlooked-for Obstacles Collide</i> Y. Sawada and T. Sako (Kyoto Institute of Tech.)</p> <p>A3-4 16:25-16:50 <i>Evolution Strategies Based Particle Filters for Nonlinear State Estimation</i> K. Uosaki, Y. Kimura and T. Hatanaka (Osaka Univ.)</p> <p>A3-5 16:50-17:15 <i>Optimal Transmission of a Set of Gaussian Signals through Discrete-Time Channels with Feedback</i> Y. Takeuchi and A. Ida (Osaka Univ. of Education)</p>	<p>Session B3 15:10-17:15 Biomedical and Medical Systems Chair: K. Kamejima (Osaka Institute of Tech.)</p> <p>B3-1 15:10-15:35 <i>Spatiotemporal Response of Alpha Wave to Flicker Stimuli of Temporally Alternated Colors</i> S. Nishifuji, H. Ohkado and S. Tanaka (Yamaguchi Univ.)</p> <p>B3-2 15:35-16:00 <i>Saccadic Undershoot Can Be Explained as a Trade-Off Between Accuracy and Flight-Time</i> A. Toyomura and T. Omori (Hokkaido Univ.)</p> <p>B3-3 16:00-16:25 <i>Medical Image Recognition by Revised GMDH-Type Neural Networks Using PSS or AIC Criterion</i> T. Kondo (Tokushima Univ.) and A. S. Pandya (Florida Atlantic Univ.)</p> <p>B3-4 16:25-16:50 <i>Control-Theoretic Analysis of a Robust Adaptation Mechanism of Circadian Rhythms</i> Y. Wakasa, G. Fujie and K. Tanaka (Yamaguchi Univ.)</p> <p>B3-5 16:50-17:15 <i>Feature Extraction of Human EEG Sleep Stages by Using Wavelet Analysis</i> K. Inoue, T. Tsujihata, Y. Aso, K. Kumamaru (Kyushu Institute of Tech.) and S. Matsuoka (Univ. of Occupational and Environmental Health)</p>
<p>17:20-18:20</p>	<p>Sunahara Memorial Lecture Chair: H. Sakai (Kyoto Univ.)</p> <p><i>Canonical Correlation Analysis of Time-Series and Stochastic Realization</i> T. Katayama (Kyoto Univ.)</p>
<p>18:30-20:30</p>	<p>Banquet</p>

October 31, Friday

Room A	Room B
<p>Session A4 9:00-10:40 System Identification I Chair: K. Wada (Kyushu Univ.)</p> <p>A4-1 9:00-9:25 <i>EM Algorithm for System Identification in the Presence of Outliers</i> J. Almutawa, H. Tanaka and T. Katayama (Kyoto Univ.)</p> <p>A4-2 9:25-9:50 <i>Modeling of Traffic Systems via a Traffic Simulator</i> Y. Wakasa, K. Hanaoka, K. Tanaka and Y. Mizukami (Yamaguchi Univ.)</p> <p>A4-3 9:50-10:15 <i>System Order Determination by Using LDL^T Decomposition and Information Criteria</i> Y. Kawabata, M. Matsubara and S. Sugimoto (Ritsumeikan Univ.)</p> <p>A4-4 10:15-10:40 <i>Direct Closed-Loop Identification in Frequency Domain</i> L. Sun (Kitakyushu Univ.) and A. Sano (Keio Univ.)</p>	<p>Session B4 9:00-10:40 Digital Signal Processing I Chair: K. Nishiguchi (Mitsubishi Electric Corp.)</p> <p>B4-1 9:00-9:25 <i>Convergence Analysis of a Complex LMS Algorithm for Active Control of Multitonal Noise</i> H. Sakai (Kyoto Univ.) and M. Chakraborty (Indian Institute of Tech.)</p> <p>B4-2 9:25-9:50 <i>A Trial on Stochastic Evaluation of Near-by Electromagnetic Field Leaked from ITE Group Under Parallel Operating Situation</i> H. Ogawa (Hiroshima Prefectural Women's Univ.), M. Ohta (Emeritus Prof. of Hiroshima Univ.) and A. Ikuta (Hiroshima Prefectural Women's Univ.)</p> <p>B4-3 9:50-10:15 <i>Blind Estimation in CDMA MIMO Channels</i> T. Honda, H. Ishihara and T. Katayama (Kyoto Univ.)</p> <p>B4-4 10:15-10:40 <i>LMS Adaptive Filter Design for Frequency Selective Feedback Using Semidefinite Programming</i> Y. Wakasa (Yamaguchi Univ.), T. Izumi and Y. Yamamoto (Kyoto Univ.)</p>

10:40-10:50 Coffee Break	
<p>Session A5 10:50-12:05 System Identification II Chair: S. Sugimoto (Ritsumeikan Univ.)</p> <p>A5-1 10:50-11:15 <i>A Unified Approach for Subspace Identification Algorithms</i> Y. Takei, H. Nanto (Kanazawa Institute of Tech.), S. Kanae, Z.J. Yang and K. Wada (Kyushu Univ.)</p> <p>A5-2 11:15-11:40 <i>A Numerical Aspect of Recursive Subspace Algorithm for Time-Varying Systems</i> K. Kameyama and A. Ohsumi (Kyoto Institute of Tech.)</p> <p>A5-3 11:40-12:05 <i>Identification of the Plant Operating in Closed-Loop System Using Inter-Sampled Data</i> K. Oura (Kokushikan Univ.) and I. Hanazaki (Tokyo Denki Univ.)</p>	<p>Session B5 10:50-12:05 Digital Signal Processing II Chair: M. Tanaka (Konan Univ.)</p> <p>B5-1 10:50-11:15 <i>Cycle Slips Detection in GPS Positioning Based on Statistical Tests of Innovation Processes</i> K. Sone, Y. Mutoh (Ritsumeikan Univ.), Y. Kubo (Mitsubishi Electric Corp.) and S. Sugimoto (Ritsumeikan Univ.)</p> <p>B5-2 11:15-11:40 <i>Adaptive Threshold Determination Method for Recursive Maximum Filter</i> K. Nishiguchi (Mitsubishi Electric Corp.)</p> <p>B5-3 11:40-12:05 <i>Adaptive Direction-of-Arrival Estimation in Array Signal Processing</i> J. Xin (Fujitsu Lab. Ltd.) and A. Sano (Keio Univ.)</p>
12:05-13:10 Lunch	
<p>Session A6 13:10-14:25 Diagnosis and Maintenance Method Chair: S. Nishifuji (Yamaguchi Univ.)</p> <p>A6-1 13:10-13:35 <i>Maintenance Scheduling Method of Equipments Based on Deterioration Prediction and Reliability</i> S. Goto and M. Nakamura (Saga Univ.)</p> <p>A6-2 13:35-14:00 <i>Identification of Defect Profiles Using an Inspection Model and Informative Distributions</i> F. Kojima and S. Kamezaki (Kobe Univ.)</p> <p>A6-3 14:00-14:25 <i>Anomaly Diagnosis of Metal Poles Using Acceleration Pickup</i> K. Yamane, Y. Yamane (Ube National College of Tech.) and S. Tanaka (Yamaguchi Univ.)</p>	<p>Session B6 13:10-14:25 Time Series Analysis Chair: Y. Fukayama (Niihama National College of Tech.)</p> <p>B6-1 13:10-13:35 <i>Minimum Cross Entropy Method with the Constraints of Uncertain Autocorrelations</i> K. Nakamuro, K. Tanaka, Y. Togawa and S. Sugimoto (Ritsumeikan Univ.)</p> <p>B6-2 13:35-14:00 <i>The Speech-Displaying System: KanNon</i> K. Nakamuro, Y. Togawa, K. Tanaka, and S. Sugimoto (Ritsumeikan Univ.)</p> <p>B6-3 14:00-14:25 <i>Quantitative Impulse Response Approach to Monetary Transmission Mechanism</i> Y. Morita and S. Miyagawa (Kyoto Gakuen Univ.)</p>
14:25-14:40 Coffee Break	

<p>Session A7 14:40-16:20 Stochastic Systems Chair: K. Kumamaru (Kyushu Institute of Tech.)</p> <p>A7-1 14:40-15:05 <i>Analysis of Combustion Processes by Stochastic Reaction Diffusion Systems and Simulation Studies</i> M. Ishikawa, K. Miyajima, T. Tanabe and T. Kitani (Yamaguchi Univ.)</p> <p>A7-2 15:05-15:30 <i>Limiting Form of Stochastic Regulator With Time-Delay Noisy Observation</i> T. Kudou (The Defense Agency), N. Kobayashi (Kanazawa Institute of Tech.) and T. Nakamizo (Ashikaga Institute of Tech.)</p> <p>A7-3 15:30-15:55 <i>A Stochastic Response of Sound Insulation System Based on Equivalent Electric Circuit Model and Some Improvement of Mass Law with Elastic Effect</i> K. Nishimura (Kinki Univ.) and M. Ohta (Emeritus Prof. of Hiroshima Univ.)</p> <p>A7-4 15:55-16:20 <i>Optimal Design of Production Rate in a Stochastic Manufacturing System with a Failure-Prone Machine</i> B. C. Giri and T. Doi (Hiroshima Univ.)</p>	<p>Session B7 14:40-16:45 Complex and Fuzzy Systems Chair: M. Obayashi (Yamaguchi Univ.)</p> <p>B7-1 14:40-15:05 <i>On Martingales for a Class of Fuzzy Random Vectors</i> T. Fukuda (Otemon Gakuin Univ.)</p> <p>B7-2 15:05-15:30 <i>Analysis of the Influence of Random Disturbances on Turing Patterns in Bounded Domains</i> M. Ishikawa, K. Miyajima and T. Tanabe (Yamaguchi Univ.)</p> <p>B7-3 15:30-15:55 <i>Analysis of Two-Phase Stefan Problems by the Stochastic Phase Field Model and Simulation Studies</i> M. Ishikawa, K. Miyajima, T. Tanabe and T. Kitani (Yamaguchi Univ.)</p> <p>B7-4 15:55-16:20 <i>Stabilization of Unstable Periodic Orbit in Unknown Chaotic System Using Sliding Mode Control Based on Fuzzy Model</i> Y. Shimizu and M. Miyazaki (Kanto Gakuin Univ.)</p> <p>B7-5 16:20-16:45 <i>Analysis of the Influence of the Disturbance on Bacterial Colony by Stochastic Reaction Diffusion Equations</i> M. Ishikawa, K. Miyajima and T. Tanabe (Yamaguchi Univ.)</p>
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