

# The 47th ISCIE International Symposium on Stochastic Systems Theory and Its Applications

Waikiki Beach Marriott Resort & Spa, Honolulu, Hawaii, USA

December 5-8, 2015

## Session Schedule

### December 5, 2015 (Saturday)

From	To	Room 1 (Salon C)	Room 2 (Milo 4&5)
08:00	08:30	Registration	
08:30	09:00	Opening (8:30~8:50)	
09:00	10:20	1S1: Control of Stochastic Systems and Stochastic Processes Chair: Fumio Kojima (Kobe University)	1M1: Mathematical Finance 1 Chair: Jiro Akahori (Ritsumeikan University)
10:20	10:40	Break	
10:40	12:00	1S2: Medical and Biomedical Systems 1 Chair: Katsuhiko Inoue (Kyushu Institute of Technology)	1M2: Mathematical Finance 2 Chair: Kazuhiro Yasuda (Hosei University)
12:00	13:20	Lunch	
13:20	14:40	1S3: Signal Detection and Statistical Signal Processing Chair: Yuichi Sawada (Kyoto Institute of Technology)	1M3: Statistical Methods of Big Data and Their Applications Chair: Akinori Hidaka (Tokyo Denki University)
14:40	15:00	Break (14:40-15:00)	
15:00	16:00	1S4: Control of Networks Chair: Kenji Sugimoto (Nara Institute of Science and Technology)	1M4: Analysis of Stochastic Systems and Stochastic Processes Chair: Koichi Matsumoto (Kyushu University)
16:00	16:20	Break	
16:20	18:00	1S5: System Identification and Parameter Estimation 1 Chair: Kenji Ikeda (Tokushima University)	1M5: Applications in Engineering related to Stochastic Processes and Stochastic Systems 1 Chair: Hiroyuki Fujioka (Fukuoka Institute of Technology)

## December 6, 2015 (Sunday)

From	To	Room 1 (Salon C)	Room 2 (Milo 4&5)
08:00	09:00	Registration	
09:00	10:20	2S1: Filtering of Stochastic Systems and Stochastic Processes Chair: Hirokazu Ohtagaki (Okayama University of Science)	
10:20	10:40	Break	
10:40	11:55	2S2: Organized Session: Novel Big Data Analysis in Science and Engineering Organizer and Chair: Naonori Ueda (NTT Communication Science Laboratories)	
11:55	13:20	Lunch	
13:20	14:20	2S3: Applications in Engineering related to Stochastic Processes and Stochastic Systems 2 Chair: Yoshitaka Matsuda (Saga University)	
14:20	14:40	Break	
14:40	15:40	2S4: Applications in Engineering related to Stochastic Processes and Stochastic Systems 3 Chair: Dilmurat Azimov (University of Hawaii at Manoa)	
15:40	16:00	Break	
16:00	17:00	2S5: Special Lecture: The Ubiquitous Switching System (Clyde Martin) (*1) Chair: Hiroyuki Kano (Tokyo Denki University)	
17:00	17:20	Award Ceremony	
18:00	20:00	Banquet (Tiki's Grill & Bar)	

(\*1) As of December 1, Special Lecture by Clyde Martin has been changed to 'Control Problems from Multiocular Mechanics' by Professor Bijoy K. Ghosh of Texas Tech University.

## December 7, 2015 (Monday)

From	To	Room 1 (Salon C)	Room 2 (Milo 4&5)
08:00	09:00	Registration	
09:00	10:20	3S1: Modeling and Control of Stochastic Systems and Stochastic Processes Chair: Yukihiro Kubo (Ritsumeikan University)	3M1: Mathematical Finance 3 Chair: Yoji Morita (Kyotogakuen University)
10:20	10:40	Break	
10:40	12:00	3S2: Medical and Biomedical Systems 2 Chair: Yoshiharu Koya (Kobe City College of Technology)	3M2: Neural Networks and Pattern Recognition Chair: Izumi Hanazaki (Tokyo Denki University)
12:00	13:20	Lunch	
13:20	15:00	3S3: System Identification and Parameter Estimation 2 Chair: Hideyuki Tanaka (Hiroshima University)	3M3: Image and Video Processing Chair: Masahiro Wada (Konan University)
15:00	15:20	Break	
15:20	16:40	3S4: Probabilistic Robotics Chair: Norimitsu Sakagami (Tokai University)	3M4: Nonlinear Filtering and GNSS Navigation Chair: Kunihiko Oura (Kokushikan University)
16:50	17:50		Organizing and Steering Committee

## December 8, 2015 (Tuesday)

Technical Tour to University of Hawaii at Manoa (09:00-12:00)

# December 5, 2015 (Saturday)

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## Session 1S1, 09:00 - 10:20, Salon C

### Control of Stochastic Systems and Stochastic Processes

Chair: Fumio Kojima (Kobe University)

- 1S1-1 Time-Domain Equalization for Single-Frequency Full-Duplex Wireless Relay Using H2 Optimal Control  
Hampei Sasahara (Kyoto University), Kazunori Hayashi (Kyoto University), Masaaki Nagahara (Kyoto University) 3
- 1S1-2 Path integral approach to stochastic optimal control under non-Gaussian white noise  
Yuta Okumura (Kyoto University), Kenji Kashima (Kyoto University), Yoshito Ohta (Kyoto University) 5
- 1S1-3 Non-Fragile Control for Fuzzy Stochastic Systems  
Jun Yoneyama (Aoyama Gakuin University), Kenta Hoshino (Aoyama Gakuin University) 7
- 1S1-4 Controller Design for Stochastic Systems Based on Optimally Controlled Stationary States  
Wan Mohammad Shazlan (Okayama University of Science), Masahiko Tamai (Toshiba Lighting and Technology Corporation), Hirokazu Ohtagaki (Okayama University of Science) 9
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## Session 1M1, 09:00 - 10:20, Milo 4&5

### Mathematical Finance 1

Chair: Jiro Akahori (Ritsumeikan University)

- 1M1-1 Binomial Hedging with transaction costs  
Tadashi Uratani (Hosei University), Takaaki Kondo (Hosei University), Kenta Terai (Hosei University) 11
- 1M1-2 Higher order K-scheme and application to derivative pricing  
Yuji Shinozaki (Tokyo Institute of Technology) 13
- 1M1-3 Model Risk of two Assets Derivatives  
Koichi Matsumoto (Kyushu University), Maki Ichikawa (Kyushu University) 15
- 1M1-4 Effects on Hedging Errors of First-to-Default Swap from Parameter Estimation Errors  
Hirofumi Hebiguchi (Hosei University), Kazuhiro Yasuda (Hosei University) 17
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## Session 1S2, 10:40 - 12:00, Salon C

### Medical and Biomedical Systems 1

Chair: Katsuhiko Inoue (Kyushu Institute of Technology)

- 1S2-1 Feature extraction for Finger Motor Imagery  
Wataru Taketoshi (Kyushu Institute of Technology), Makoto Maeda (Kyushu Institute of Technology), Jun Kobayashi (Kyushu Institute of Technology), Katsuhiko Inoue (Kyushu Institute of Technology) 19

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	Bijoy K. Ghosh (Texas Tech University), Takafumi Oki (Texas Tech University)	21
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	Ihor Lubashevsky (University of Aizu), Marie Watanabe (University of Aizu)	23
1S2-4	Active Noise Reduction with the Wiener Filter for Vagal Nerve Recording of a Goat with an Implanted Artificial Heart Device	
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### Mathematical Finance 2

#### Chair: Kazuhiro Yasuda (Hosei University)

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	Takashi Shibata (Tokyo Metropolitan University), Michi Nishihara (Osaka University)	29
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	SHIGEO KUSUOKA, MARIKO NINOMIYA (The Japanese Red Cross College of Nursing), SYOITI NINOMIYA (Tokyo Institute of Technology)	31
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### Signal Detection and Statistical Signal Processing

#### Chair: Yuichi Sawada (Kyoto Institute of Technology)

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	Nobuo Iwasaki (National Institute of Technology, Wakayama College), Masato Tamaki (National Institute of Technology, Wakayama College), Shun Fukase (National Institute of Technology, Wakayama College), Katsuhiko Inoue (Kyushu Institute of Technology), Hiromu Gotanda (Kinki University)	35
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1M3-1	Nursing Activity Sensing Using Mobile Sensors and Proximity Sensors Tatsuya ISODA (Kyushu Institute of Technology), Yasunobu NOHARA (Kyushu University Hospital), Sozo INOUE (Kyushu Institute of Technology), Mako SHIROUZU (Prefecture University of Kumamoto), Yasuhiko SUGIYAMA (CeFox Co. Ltd), Mari HIRATA (Fukusei-kai hospital), Kyoko MACHIDA (Fukusei-kai hospital), Naoki NAKASHIMA (Kyushu University Hospital)	43
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# December 6, 2015 (Sunday)

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## Session 2S1, 09:00 - 10:20, Salon C

### Filtering of Stochastic Systems and Stochastic Processes

Chair: Hirokazu Ohtagaki (Okayama University of Science)

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### Organized Session: Novel Big Data Analysis in Science and Engineering

Organizer and Chair: Naonori Ueda (NTT Communication Science Laboratories)

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**Session 2S5, 16:00 - 17:00, Salon C****Special Lecture: The Ubiquitous Switching System****Chair: Hiroyuki Kano (Tokyo Denki University)**

2S5-1	The Ubiquitous Switching System Clyde Martin (CBT International Consulting)	1
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**Award Ceremony, 17:00 - 17:20, Salon C**

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**Banquet, 18:00 - 20:00, Tiki's Grill & Bar (2nd floor, Aston Waikiki Beach Hotel)**



# December 7, 2015 (Monday)

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## Session 3S1, 09:00 - 10:20, Salon C

### Modeling and Control of Stochastic Systems and Stochastic Processes

Chair: Yukihiro Kubo (Ritsumeikan University)

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## Session 3M1, 09:00 - 10:20, Milo 4&5

### Mathematical Finance 3

Chair: Yoji Morita (Kyotogakuen University)

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### Medical and Biomedical Systems 2

Chair: Yoshiharu Koya (Kobe City College of Technology)

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#### Neural Networks and Pattern Recognition

**Chair: Izumi Hanazaki (Tokyo Denki University)**

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**Chair: Hideyuki Tanaka (Hiroshima University)**

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### Session 3M3, 13:20 - 15:00, Milo 4&5

#### Image and Video Processing

##### Chair: Masahiro Wada (Konan University)

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##### Chair: Norimitsu Sakagami (Tokai University)

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**Session 3M4, 15:20 - 16:40, Milo 4&5**

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**Chair: Kunihiko Oura (Kokushikan University)**

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