

# Program

## November 4, 2016 (Friday)

From	To	Room A	Room B	Room C
09:00	10:00	Registration		
10:00	10:30	Opening Address (Room A)		
10:30	11:45	Session: 1A1	Session: 1B1	Session: 1C1
		Control of Stochastic Systems and Stochastic Processes	Signal Detection and Statistical Signal Processing	Statistical Methods and Control of Networks
		Chair: Ihor Lubashevsky (University of Aizu)	Chair: Masahiro Tanaka (Konan University)	Chair: Kaoru Fujioka (Fukuoka Women's University)
11:45	13:30	Lunch		
13:30	14:45	Session: 1A2	Session: 1B2	Session: 1C2
		Modelling of Stochastic Systems and Stochastic Processes	Robotics, GNSS Navigation, and Applications with Stochastic Processes	Stochastic Optimization Methods and Evolutionary Methods
		Chair: Yoshiki Takeuchi (Osaka Kyoiku University)	Chair: Yoshiharu Koya (Kobe City College of Technology)	Chair: Kiyoharu Tagawa (Kindai University)
14:45	15:15	Coffee Break		
15:15	16:30	Session: 1A3	Session: 1B3	Session: 1C3
		System Identification and Parameter Estimation	Medical and Biomedical Systems I	Chaos, Neural Networks and Fuzzy Systems
		Chair: Yukio Fukayama (Hiroshima Institute of Technology)	Chair: Kunihiko Oura (Kokushikan University)	Chair: Akinori Hidaka (Tokyo Denki University)
16:30	16:50	Coffee Break		
16:50	17:50	Special Lecture: Masaaki Nagahara (The University of Kitakyushu) "Sparsity, discreteness, and optimal control"		
18:00	20:30	Banquet (Oasis Restaurant, Fukuoka Institute of Technology)		

## November 5, 2016 (Saturday)

From	To	Room A	Room B	Room C
10:30	11:45	Session: 2A1	Session: 2B1	Session: 2C1
		Applications in Engineering related to Stochastic Processes and Stochastic Systems I	Medical and Biomedical Systems II	Analysis of Stochastic Systems and Stochastic Processes I
		Chair: Dilmurat Azimov (University of Hawaii at Manoa)	Chair: Yukihiro Kubo (Ritsumeikan University)	Chair: Jing Fu (Fukuoka Institute of Technology)
11:45	13:30	Lunch (Bento Box)		
13:30	14:45	Session: 2A2	Session: 2B2	Session: 2C2
		Applications in Engineering related to Stochastic Processes and Stochastic Systems II	Estimation of Stochastic Systems and Stochastic Processes	Analysis of Stochastic Systems and Stochastic Processes II
		Chair: Masaaki Ishikawa (Yamaguchi University)	Chair: Masaya Murata (NTT Communication Science Laboratories)	Chair: Makoto Fukumoto (Fukuoka Institute of Technology)
14:45	15:15	Coffee Break		
15:15	16:30	Session: 2A3	Session: 2B3	Session: 2C3
		Applications in Engineering related to Stochastic Processes and Stochastic Systems III	Applications in Engineering related to Stochastic Processes and Stochastic Systems IV	Analysis of Stochastic Systems and Stochastic Processes III
		Chair: Yuichi Sawada (Kyoto Institute of Technology)	Chair: Takuya Tajima (Fukuoka Institute of Technology)	Chair: Tokuo Fukuda (Otemon Gakuin University)

**November 4, 2016 (Friday)**  
**Parallel Sessions: 10:30-11:45**

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**Session 1A1, Room A**

**Control of Stochastic Systems and Stochastic Processes**

**Chair: Ihor Lubashevsky (University of Aizu)**

- 1A1-1     Continuous-discrete robust UKF for nonlinear systems with parameter uncertainties  
**Shinji Ishihara (Hitachi Ltd., Tokyo Institute of Technology)**, Masaki Yamakita (Tokyo Institute of Technology)
- 1A1-2      $H_\infty$  Tracking with Preview for Linear Continuous-Time Systems Driven by Wiener and Poisson Processes  
**Gou Nakura**
- 1A1-3     Bilateral Control System of Nonlinear Flexible Master-Slave Arms with Random Delay Using Extended Kalman Filter  
Masaharu Yagi (Kyoto Prefecture), **Kengo Kimura (Kyoto Institute of Technology)**, Yuichi Sawada (Kyoto Institute of Technology)
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**Session 1B1, Room B**

**Signal Detection and Statistical Signal Processing**

**Chair: Masahiro Tanaka (Konan University)**

- 1B1-1     An Adaptive Filtering for Speech Applying Local Trigonometric Expansions  
**Yukio Fukayama (Hiroshima Institute of Technology)**, Masafumi Watanabe (Hiroshima Institute of Technology)
- 1B1-2     Performance improvement of synthetic Brillouin optical time-domain reflectometer employing Golay coding  
**Kenichi Nishiguchi (Osaka University)**
- 1B1-3     Alignment of Signals for Switching State Estimation against Irregular Delay  
**Kenji Sugimoto (Nara Institute of Science and Technology)**
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**Session 1C1, Room C**

**Statistical Methods and Control of Networks**

**Chair: Kaoru Fujioka (Fukuoka Women's University)**

- 1C1-1     Automatic selection and concatenation system for jazz piano trio using case data  
**Takeshi Hori (Meiji University)**, Kazuyuki Nakamura (Meiji University), Shigeki Sagayama (Meiji University)
- 1C1-2     Analysis of AKB48 general election in 2016 by using mathematical model for hit phenomena  
**Akira Ishii (Tottori University)**, Kana Fukui (Tottori University), Ayaka Miki (Tottori University), Taigen Oda (Tottori University), Hikaru Ueda (Tottori University), Yasuko Kawahata (Tottori University)
- 1C1-3     Effective herding in shepherding problem with two shepherds  
**Kaoru Fujioka (Fukuoka Women's University)**

## Parallel Sessions: 13:30-14:45

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### Session 1A2, Room A

#### Modelling of Stochastic Systems and Stochastic Processes

Chair: **Yoshiki Takeuchi (Osaka Kyoiku University)**

- 1A2-1 Mesolevel Intermittency of Car-Driving as Alternating Choice of Driving-Styles  
**Ryoji Yamauchi (University of Aizu)**, Kosuke Hijikata (University of Aizu), Ihor Lubashevsky (University of Aizu), Hiromasa Ando (University of Aizu)
- 1A2-2 Nonequilibrium phase transition in the model of human virtual stick balancing  
Arkady Zgonnikov (National University of Ireland, Galway), **Ihor Lubashevsky (University of Aizu)**
- 1A2-3 A Finite-Step Injection Problem of Discrete-Time Kalman Filter into the Stationary-State with the Optimal Observation Gain Matrix  
**Yoshiki Takeuchi (Osaka Kyoiku University)**
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### Session 1B2, Room B

#### Robotics, GNSS Navigation, and Applications with Stochastic Processes

Chair: **Yoshiharu Koya (Kobe City College of Technology)**

- 1B2-1 INS/GNSS/Vehicle Speed Integration for Land Vehicles with Utilizing Zero-Velocity Information  
**Toma Onishi (Ritsumeikan University)**, Ryo Sugiura (Ritsumeikan University), Yukihiro Kubo (Ritsumeikan University), Suelo Sugimoto (Ritsumeikan University)
- 1B2-2 Comparison of nonlinear optimal filters in target tracking  
**Kiyotsugu Takaba (Ritsumeikan University)**, Kengo Inoue (NAIST)
- 1B2-3 Model Construction of Warm Water Temperature of Heat Source in an OTEC Experimental Plant via Stochastic Process  
**Yoshitaka Matsuda (Saga University)**, Satoru Goto (Saga University), Takenao Sugi (Saga University), Takafumi Morisaki (Saga University), Takeshi Yasunaga (Saga University), Yasuyuki Ikegami (Saga University)
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### Session 1C2, Room C

#### Stochastic Optimization Methods and Evolutionary Methods

Chair: **Kiyoharu Tagawa (Kindai University)**

- 1C2-1 Estimation distribution algorithm based on a molecular target detector model  
**Satoru Iwasaki (Osaka University)**, Toshiharu Hatanaka (Osaka University)
- 1C2-2 A Randomized Algorithm for Robust BMI Optimization  
**Takayuki Wada (Osaka University)**, Yasumasa Fujisaki (Osaka University)
- 1C2-3 A Stochastic Optimization Method Using Weighted Empirical Distribution Function  
**Kiyoharu Tagawa (Kindai University)**, Shun Miyanaga (Kindai University)

## Parallel Sessions: 15:15-16:30

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### Session 1A3, Room A

#### System Identification and Parameter Estimation

**Chair: Yukio Fukayama (Hiroshima Institute of Technology)**

- 1A3-1 On Generalized Eigenvector Method for Errors-In-Variables Models Identification  
**Masato Ikenoue (National Institute of Technology, Ariake College)**, Kiyoshi Wada (Kyushu University)
- 1A3-2 Identification of Hammerstein-Wiener Systems using Subspace Method and Separable Least-Squares  
Hajime Ase (Mathematical Technology Institute), **Tohru Katayama (Ritsumeikan University)**
- 1A3-3 Ground Surface Estimation and Environmental Recognition by a Small Mobile Depth Sensor  
**Masahiro Tanaka (Konan University)**
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### Session 1B3, Room B

#### Medical and Biomedical Systems I

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

- 1B3-1 Gray Color Multi-Categorical Perception: Asymptotics of Psychometric Function  
**Ren Namae (University of Aizu)**, Marie Watanabe (University of Aizu), Ihor Lubashevsky (University of Aizu)
- 1B3-2 Change of Hemodynamics in Prefrontal Cortex Caused by Repeating the Attentional Control Task  
**Kanako Mikami (Kokushikan University)**, Kunihiko Oura (Kokushikan University)
- 1B3-3 Determination method of motor imagined limbs based on the EEG signals  
**Ryousuke Shibata (Kyushu Institute of Technology)**, Kenji Hontani (Kyushu Institute of Technology), Makoto Maeda (Kyushu Institute of Technology), Katsuhiko Inoue (Kyushu Institute of Technology)
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### Session 1C3, Room C

#### Chaos, Neural Networks and Fuzzy Systems

**Chair: Akinori Hidaka (Tokyo Denki University)**

- 1C3-1 Information Transparency in Multi-portfolio Optimization: A Game-Theoretic Approach  
**Jing Fu (Fukuoka Institute of Technology)**
- 1C3-2 On Two Dimensional Fuzzy Random Data as Vague Perceptions of Crisp Phenomena  
**Tokuo Fukuda (Otemon Gakuin University)**
- 1C3-3 Stochastic Process with Chaotic Dynamics: Human Complex Behavior in Multi-Factorial Decision-Making  
**Ihor Lubashevsky (University of Aizu)**, Namik Goussein-zade (General Physics Institute), Sergey Maslov (General Physics Institute)

## Special Lecture: 16:50-17:50

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SPL, Room A

Chair: Hiroyuki Fujioka (Fukuoka Institute of Technology)

SPL Sparsity, discreteness, and optimal control

Masaaki Nagahara (The University of Kitakyushu)

**November 5, 2016 (Saturday)**

**Parallel Sessions: 10:30-11:45**

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**Session 2A1, Room A**

**Applications in Engineering related to Stochastic Processes and Stochastic Systems I**

**Chair: Dilmurat Azimov (University of Hawaii at Manoa)**

- 2A1-1 Study of human intention in 19th century quantitatively using Ukiyo-e  
**Yasuko Kawahata (University of Tokyo)**
- 2A1-2 Hybrid Optimal Tracking Control by Most Probable Trajectory Approach  
**Gou Nakura**
- 2A1-3 Mean Square Stability of Model Based Network Control Systems with Multiplicative Noise  
**Wataru Toriumi (Osaka University), Yasumasa Fujisaki (Osaka University)**
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**Session 2B1, Room B**

**Medical and Biomedical Systems II**

**Chair: Yukihiro Kubo (Ritsumeikan University)**

- 2B1-1 A Gray-box Model Design of a Basal Ganglia-Cortical Brain-Machine Interface for a Rat  
**Osamu Fukayama (University of Tokyo), Naoki Sudo (University of Tokyo), Kunihiko Mabuchi (University of Tokyo)**
- 2B1-2 Identification of Ovarian Follicles for Infertility Treatment  
**Yoshiharu Koya (Kobe City College of Technology), Tomomoto Ishikawa (Ishikawa Hospital), Hidehiko Matsubayashi (Reproduction Clinic Osaka), Yutaka Hata (University of Hyogo)**
- 2B1-3 Development of Clinical Depression Diagnosis Support System for Solitary Person  
**Takuya Tajima (Fukuoka Institute of Technology), Takehiko Abe (Aichi University), Haruhiko Kimura (Kanazawa University)**
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**Session 2C1, Room C**

**Analysis of Stochastic Systems and Stochastic Processes I**

**Chair: Jing Fu (Fukuoka Institute of Technology)**

- 2C1-1 Convergence Analysis of Stochastic Consensus over Noisy Networks of Linear Symmetric Agents  
**Kenta Hanada (Osaka University), Takayuki Wada (Osaka University), Izumi Masubuchi (Kobe University), Toru Asai (Nagoya University), Yasumasa Fujisaki (Osaka University)**
- 2C1-2 Statistical Properties of Decision-Making Governed by Reinforcement Learning with Status Quo Bias  
**Kosuke Hijikata (University of Aizu), Ihor Lubashevsky (University of Aizu)**
- 2C1-3 Development of Visual Support Way for Pronunciation Practice Using Reflection Coefficients of Burg's Method  
**Ryosuke Karigome (Tokyo Denki University), Izumi Hanazaki (Tokyo Denki University)**

## Parallel Sessions: 13:30-14:45

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### Session 2A2, Room A

#### Applications in Engineering related to Stochastic Processes and Stochastic Systems II

**Chair: Masaaki Ishikawa (Yamaguchi University)**

- 2A2-1 Bayesian Modeling and Estimations for Reliability Predictions of Software Debugging Processes Based on the Weibull distribution  
**Toru Kaise (University of Hyogo)**
- 2A2-2 Stability Analysis of the Stochastic SIR Model with Discrete Delay  
**Masaaki Ishikawa (Yamaguchi University)**
- 2A2-3 On-board Spacecraft Attitude Guidance, Navigation, and Control using Micro-Thrusters  
**Cullen Matsumoto (University of Hawaii at Manoa), Dilmurat Azimov (University of Hawaii at Manoa)**
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### Session 2B2, Room B

#### Estimation of Stochastic Systems and Stochastic Processes

**Chair: Masaya Murata (NTT Communication Science Laboratories)**

- 2B2-1 VPPP Algorithms of Baseline Vector Estimation among Multiple Antennas  
**Atsushi Mouri (Ritsumeikan University), Goshi Okuda (Ritsumeikan University), Sueo Sugimoto (Ritsumeikan University), Yukihiro Kubo (Ritsumeikan University)**
- 2B2-2 Comparison of Performances of Nonlinear State Estimators for Stochastic Linear Systems Based on Random Delayed Observation Data  
**Yuichi Sawada (Kyoto Institute of Technology), Kengo Kimura (Kyoto Institute of Technology), Masaharu Yagi (Prefectural Government Buildings Division, Kyoto Prefecture)**
- 2B2-3 Non-Gaussian Estimation of Nonlinear Continuous-discrete Models  
**Masaya Murata (NTT Communication Science Laboratories), Kaoru Hiramatsu (NTT Communication Science Laboratories)**
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### Session 2C2, Room C

#### Analysis of Stochastic Systems and Stochastic Processes II

**Chair: Makoto Fukumoto (Fukuoka Institute of Technology)**

- 2C2-1 Cloud Type Interpretation of Statistical Properties of Human Response Delay in Pendulum Balancing  
**Takashi Suzuki (University of Aizu), Ihor Lubashevsky (University of Aizu), Shigeru Kanemoto (University of Aizu)**
- 2C2-2 Analysis of a Time Sequential-change of Motion during Hula-Hooping  
**Wataru Iwanaga (Tokyo Denki University), Izumi Hanazaki (Tokyo Denki University)**
- 2C2-3 A Proposal for Continuous Evaluation-based Interactive Evolutionary Computation  
**Makoto Fukumoto (Fukuoka Institute of Technology), Yoshiko Hanada (Kansai University)**

## Parallel Sessions: 15:15-16:30

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### Session 2A3, Room A

#### Applications in Engineering related to Stochastic Processes and Stochastic Systems III

Chair: Yuichi Sawada (Kyoto Institute of Technology)

- 2A3-1 New Method of Multiple Data Association Processing for Initial Orbit Determination and Error Quantification  
Dilmurat Azimov (University of Hawaii at Manoa)
- 2A3-2 Geographic Routing for 3-D Wireless Sensor Networks with Stochastic Learning Automata  
Motoshi Hara (National Institute of Technology, Matsue College), Wataru Aoto (Internet Initiative Japan Inc.), Ayumu Iwata (Mitsubishi Electric Control Software Corp.), Noriyo Kanayama, Toru Watanabe (National Institute of Technology, Matsue College), Hiroyuki Kamaya (National Institute of Technology, Hachinohe College)
- 2A3-3 Consecutive Dimensionality Reduction by Canonical Correlation Analysis for Visualization of Convolutional Neural Networks  
Akinori Hidaka (Tokyo Denki University), Takio Kurita (Hiroshima University)
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### Session 2B3, Room B

#### Applications in Engineering related to Stochastic Processes and Stochastic Systems IV

Chair: Takuya Tajima (Fukuoka Institute of Technology)

- 2B3-1 Reconstructing Chinese Characters using Dynamic Font Model and Support Vector Machine  
Wenli Zhu (Fukuoka Institute of Technology), Hiroyuki Fujioka (Fukuoka Institute of Technology), Hiroyuki Kano (Tokyo Denki University)
- 2B3-2 Prediction System of Subway Traffic Flow and Appropriate Parameters Shifting  
Yutaka Kono (Meiji University), Kazuyuki Nakamura (Meiji University)
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### Session 2C3, Room C

#### Analysis of Stochastic Systems and Stochastic Processes III

Chair: Tokuo Fukuda (Otemon Gakuin University)

- 2C3-1 Towards Incompleteness of Stochastic Processes Formalism: Example of Random Walks with Internal Causation  
Kosuke Hijikata (University of Aizu), Ihor Lubashevsky (University of Aizu)
- 2C3-2 Control Performance of Nonlinear Stochastic Systems Based on Optimally Controlled Stationary States  
Wan Mohammad Shazlan (Okayama University of Science), Masahiko Tamai (Okayama University of Science), Hirokazu Ohtagaki (Okayama University of Science)