


## SSS'23 Session Schedule

**November 17, 2023 (Friday)**

	<b>Room A</b>	<b>Room B</b>	<b>Room C</b>
10:30-12:10	1 A : Learning (1)	1 B:Engineering Applications of Stochastic Approaches (1)	1 C: Stochastic Control Systems
12:10-13:40	<b>Lunch</b>		
13:40-14:50	<b>Special Session</b> Control Problems from Pendulum to COE Projects (SMS and HAM) -Super Mechano-Systems and Human Adaptive Mechatronics-		
15:00-15:20	<b>Award and Announcement of SSS'24 Next Year</b>		
15:20-15:40	<b>Break</b>		
15:40-17:20	2 A: Learning (2)	2 B : Engineering Applications of Stochastic Approaches (2)	2 C: Stochastic Analysis Methods
17:30-18:30			<i>Tea Party</i>

**November 18, 2023 (Saturday)**

	<b>Room A</b>	<b>Room B</b>	<b>Room C</b>
9:20-11:00	3 A: Mathematical Finance	3 B:Mathematical Analysis of Stochastic Systems (1)	3 C: Biomedical Signal Analysis (1)
11:00-11:10	<b>Break</b>		
11:10-12:25	4 A: Mathematical Optimization of Stochastic Systems	4 B:Mathematical Analysis of Stochastic Systems (2)	4 C:Biomedical Signal Analysis (2)

**November 17, 2023 (Friday) RomA**

1A	Learning (1)	
	Chair: Yasuyuki Satoh (Tokyo Denki University)	
10:30	Market Simulator with Deep Propagator	
1A1		Sho Nishikawa (Ritsumeikan University) Koei Matsunaga(Ritsumeikan University) Jiro Akahori (Ritsumeikan University)
10:55	Impact of COVID-19 on Stock Price Prediction Using LSTM and ARIMA Models	
1A2		Yanbo Yang(Hosei University) Kazuhiro Yasuda(Hosei University)
11:20	Upper Bound of Real Log Canonical Threshold of Tensor Decomposition and its Application to Bayesian Inference	
1A3		Naoki Yoshida (Tokyo Institute of Technology) Sumio Watanabe(Tokyo Institute of Technology)
11:45	A Study on Effective Construction of Vision Transformers	
1A4		Gou Nakura(No Affiliation)
	Special Lecture	
	Chair: Izumi Hanazaki (Tokyo Denki University )	
13:40	Control Problems from Pendulum to COE Projects (SMS and HAM) -Super Mechano-Systems and Human Adaptive Mechatronics-	
		Katsuhisa Furuta President Emeritus, Tokyo Denki University Professor Emeritus, Tokyo Institute of Technology
2A	Learning (2)	
	Chair: Yuki Nishimura(Kagoshima University)	
15:40	Sig-Wasserstein GANs with volatility	
2A1		Yusuke Shirai(Ritsumeikan University) Riki Kitano(Ritsumeikan University) Jiro Akahori(Ritsumeikan University)
16:05	Analysis of Market Impact by Large Traders Using Artificial Markets	
2A2		Mizuho Sasaki(Hosei University) Kazuhiro Yasuda(Hosei University)
16:30	Canceled	
2A3		
16:30	A Fundamental Study on Practical AI models and Generalization of AI Methods	
2A4		Gou Nakura(No Affiliation)

**November 17, 2023 (Friday) RomB**

1B	Engineering Applications of Stochastic Approaches (1) Chair: Kanako Mikami(Kokushikan University)
10:30 1B1	Attitude stabilization by steering control of manned electrically-power-assisted bicycle Kazuki Shiino(Tokyo Denki University) Takaatsu Kihara(Tokyo Denki University) Yuzuki Sugasawa(Tokyo Denki University) Masami Iwase(Tokyo Denki University)
10:55 1B2	Implementation of Variable Frequency Filter Yuto Abe(Kobe City College of Technology) Yoshiharu Koya(Kobe City College of Technology) Takahiro Kubo(SOLIDSONIC)
11:20 1B3	Internal Disturbance Estimation and Its Compensation for PreInstalled Velocity Controller for Crane System Kazuma Mizuki1(Tadano Ltd.) Jun Ishikawa(Tokyo Denki University)
11:45 1B4	Bilateral Control Using Linear Motors:Toward Wide-Bandwidth Control with Wide Moving Range by Two-Stage Mechanism Runa Ichinose(Tokyo Denki University) Jun Ishikawa(Tokyo Denki University)

	Special Lecture Chair: Izumi Hanazaki (Tokyo Denki University )
13:40	Control Problems from Pendulum to COE Projects (SMS and HAM) -Super Mechano-Systems and Human Adaptive Mechatronics- Katsuhisa Furuta President Emeritus, Tokyo Denki University Professor Emeritus, Tokyo Institute of Technology

2B	Engineering Applications of Stochastic Approaches (2) Chair: Kunihiko Oura(Kokushikan University)
15:40 2B1	Subexponential memory of water environmental variables through the superstatistics Hidekazu Yoshioka(Japan Advanced Institute of Science and Technology) Yumi Yoshioka(Shimane University) Kunihiko Hamagami(Iwate University)
16:05 2B2	The Behavior of Nonlinear RED on 10 Gigabit Ethernet Takaya Hase(Chukyo University) Kaito Kato(Chukyo University) Daisuke Ito(Gifu University) Takuji Kousaka(Chukyo University)
16:30 2B3	Development of Snake-like Robot for Cable-Laying Yuuki Sadasue(Tokyo Denki University) Akito Oomori (Tokyo Denki University) Masami Iwase(Tokyo Denki University)
16:55 2B4	A Study of the Sampling Time Dependence on the Performance of Disturbance Feedforward Compensation Yuma Tanaka(Tokyo Denki University) Jun Ishikawa(Tokyo Denki University)

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**November 17, 2023 (Friday) RomC**

1C	Stochastic Control Systems Chair: Yasumasa Fujisaki(Osaka University)
10:30	On the finite time stability for stochastic delayed systems 1C1 Hu Wei(Jiangsu University of Technology)
10:55	Higher order schemes for solving stochastic control problems 1C2 Naoto Nomura(Ritsumeikan University) Mitsuki Hagai(Ritsumeikan University) Jiro Akahori(Ritsumeikan University)
11:20	On Stochastic Hamiltonian Systems arising from Stochastic Control Problems 1C3 Zhang Xinmiao(Ritsumeikan University) Jiro Akahori(Ritsumeikan University) Kitano Riki(Ritsumeikan University)
11:45	On Safety-Probability Compensator Based on Stochastic Control Barrier Functions 1C4 Yuki Nishimura(Kagoshima University)

	Special Lecture Chair: Izumi Hanazaki (Tokyo Denki University )
13:40	Control Problems from Pendulum to COE Projects (SMS and HAM) -Super Mechano-Systems and Human Adaptive Mechatronics- Katsuhisa Furuta President Emeritus, Tokyo Denki University Professor Emeritus, Tokyo Institute of Technology

2C	Stochastic Analysis Methods Chair: Satoru Goto (Saga University)
15:40	Analysis of chaotic attractor in an interrupted circuit with TEM characteristics 2C1 Ryota Komori(Chukyo University) Kaito Kato(Chukyo University) Yuu Miino(Naruto University of Education) Hiroyuki Asahara(Okayama University of Science) Takuji Kousaka(Chukyo University)
16:05	Manifold tracking method in 1-dimensional discrete-time systems using particle swarm optimization 2C2 Mai Hosoda(Chukyo University) Hiroyuki Kitajima(Kagawa University) Haruna Matsushita(Kagawa University) Takuji Kousaka(Chukyo University)
16:30	Analysis of the Effect of Increasing Peer Pressure on Consensus Building 2C3 Kazuma Fukumoto (Osaka University) Yasumasa Fujisaki(Osaka University)
16:55	High Accuracy Successive Moving Baseline Estimation Method for a Slow Speed Robot based on GNSS Positioning —Futher Results 2C4 Hiroki Hayashi(Ritsumeikan University) Fumihito Umemura(Ritsumeikan University) Yoshiharu Koya(Kobe City College of Technology) Yukihiko Kubo(Ritsumeikan University)

**November 18, 2023 (Saturday) RoomA**

3A	Mathematical Finance Chair: Jiro Akahori(Ritsumeikan University)
9:20	Local risk-minimization for market models in discrete time settings via discrete Malliavin calculus 3A1 Kazuki Horita(Ritsumeikan University) Ryoichi Suzuki(Ritsumeikan University)
9:45	Numerical analysis of local risk-minimization for digital options under exponential Lévy models 3A2 Masahiro Handa(Ritsumeikan University) Ryoichi Suzuki(Ritsumeikan University)
10:10	One-Step Survival Method for Barrier Option Price Simulation under Heston Model 3A3 Komei Yamaya(Hosei University) Kazuhiro Yasuda(Hosei University)
10:35	Estimation accuracy of real distribution for underlying asset using hypothetical volatility data 3A4 Yuzuki Asaga(Hosei University) Kazuhiro Yasuda(Hosei University)

4A	Mathematical Optimization of Stochastic Systems Chair: Tetsuo Shiotsuki (Tokyo Denki Univewrsity)
11:10	Stochastic Shortest Path Problem on Borel Space Considering Dead-ends and Undesired Terminal States 4A1 Ritsusamuel Otsubo(Industrial Research Center of Shiga Prefecture)
11:35	Solving Optimal Stopping Problems of Symmetric Diffusion Processes 4A2 Yu Mizuno(Ritsumeikan University) Zhi-Jie Jia(Ritsumeikan University) Jiro Akahori(Ritsumeikan University)
12:00	Risk Assessment for Sparse Optimization with Relaxation 4A3 Zhicheng Zhang(Osaka University) Yasumasa Fujisaki(Osaka University)

**November 18, 2023 (Saturday) RoomB**

3B	Mathematical Analysis of Stochastic Systems (1) Chair: Yukihiro Kubo(Ritsumeikan University)
9:20 3B1	On the Efficiency of the Malliavin-Mancino Fourier Estimators Hitomi Ishiwada(Ritsumeikan University) Natsuki Toda(Ritsumeikan University)
9:45 3B2	An algebraic expansion of the solution of a semi-linear partial differential equation Yudai Yasuda(Ritsumeikan University) Kaori Okuma(Ritsumeikan University)
10:10 3B3	Adaptive Parameter Control Using Search State Estimation and Extreme Individuals for Differential Evolution Tetsuyuki Takahama(Hiroshima City University) Setsuko Sakai(Hiroshima Shudo University)
10:35 3B4	System Performance Evaluation Based on Nonlinear Analysis of MPPT Controlled DC-DC Converter with TEM Daiki Hozumi(Okayama University of Science) Chihiro Kondo(Okayama University of Science) Yoshihisa Mori(Okayama University of Science) Nobuyuki Kasa(Okayama University of Science) Yuma Furutani(Okayama University of Science) Hiroyuki Asahara(Okayama University of Science)
4B	Mathematical Analysis of Stochastic Systems (2) Chair: Yoshiharu Koya(Kobe City College of Technology)
11:10 4B1	Application of Markov Chain Approximation Method to Nonlinear Diffusion Equation Itsuki Watanabe (Waseda University)
11:35 4B2	Nonlinear discrete Clark-Ocone formula for the solution of a semilinear partial differential equation Sae Odaira(Ritsumeikan University) Kaori Okuma(Ritsumeikan University)
12:00 4B3	Simulation Studies on Nonlaminar Piecewise Continuous Mappings associated with Nonlinear Dynamical Systems Takahiro Yamaguchi(Okayama University of Science) Hiroyuki Asahara(Okayama University of Science) Hirokazu Ohtagaki(Okayama University of Science)

**November 18, 2023 (Saturday) RoomC**

3C	Biomedical Signal Analysis (1) Chair: Keita Tanaka (Tokyo Denki University)
9:20	Utilization of Articulatory Shape Visualization Information in Pronunciation Training and Evaluation of Training Effect by Facial Muscle Surface Myopotential Signals 3C1 Kou Uken (Tokyo Denki University) Syunya Suzuki (Tokyo Denki University) Yuga Suzuki (Tokyo Denki University) Izumi Hanazaki(Tokyo Dinki University)
9:45	Epoch Segmentation Method for Mathematical Modeling of "Temporal Change of Occurrence Frequency of Bowel Sounds" 3C2 Koki Tozawa(Tokyo University of Science) Osamu Sakata(Tokyo University of Science)
10:10	Performance evaluation of wearable long-term intestinal sound measurement device using machine learning 3C3 Daichi Yato(Tokyo University of Science) Osamu Sakata(Tokyo University of Science)
10:35	Study of spatial frequency characteristics implicitly assumed by brain recording using electrodes array 3C4 Osamu Fukayama(Osaka University,)
4C	Biomedical Signal Analysis (2) Chair: Shigeo Wada (Tokyo Denki University)
11:10	Improving state feedback control model with dead band for reproducing human balancing motions 4C1 Yoshikazu Yamanaka(Utsunomiya University) Yuya Nakamura(Utsunomiya University) Hibiki Nakayama(Utsunomiya University) Katsutoshi Yoshida(Utsunomiya University)
11:35	Evaluation of Brain Wave and Heart Rate Related to Experience of VR Construction Educational System for Architecture Students 4C2 Kanakano Mikami(Kokushikan University) Tatsuya Inden(Kokushikan University)
12:00	Consideration of electrode placement to improve presentation resolution of phosphenes 4C3 Manami Kanamaru(Tokyo Denki University) Keita Tanaka(Tokyo Denki University) Eiji Kamioka(Shibaura Institute of Technology)