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### 4AM1–1: Chaos Circuit

**Date:** March 4, 10:00–11:30  
**Room:** Waikiki Ballroom Salon I  
**Chair:** Hiroyuki Kitajima (Kagawa University)

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**Date:** March 4, 10:00–11:30  
**Room:** Waikiki Ballroom Salon II  
**Chair:** Tetsushi Ueta (Tokushima University)

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Takahiro Kitajima (The University of Tokushima), Takashi Yasuno (The University of Tokushima)

Investigation of Collision Avoidance Using Vibration Device for Electric Wheelchair Support System
Takeshi Nakatani (The University of Tokushima), Takashi Yasuno (The University of Tokushima), Kenji Yamanaka (The University of Tokushima), Akinobu Kuwahara (The University of Tokushima)

4AM1-3: Image Processing 1

Date: March 4, 10:00–11:30
Room: Waikiki Ballroom Salon III
Chair: Masayuki Ikebe (Hokkaido University)

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Kiyoshi Takigawa (Shikoku Research Institute Inc.), Koichi Iwabu (Shikoku Research Institute Inc.), Takashi Yasuno (The University of Tokushima)

Specifying Method of Cloud Area Affecting Solar Radiation on the Ground Using Cloud Images
Koichi Iwabu (Shikoku Research Institute Inc.), Kiyoshi Takigawa (Shikoku Research Institute Inc.), Takashi Yasuno (The University of Tokushima)

Detection of Architectural Distortion Based on Angles of Aberrant Mammary Gland
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Den Nagaregawa (The University of Tokushima), Koji Kashihara (The University of Tokushima), Momoyo Ito (The University of Tokushima), Minoru Fukumi (The University of Tokushima)

4AM1-4: [Special Session] Stochastic Resonance and its Application to Communications

Date: March 4, 10:00–11:30
Room: Milo III
Chair: Hisato Fujisaka (Hiroshima City University)

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Yukihiro Tadokoro (TOYOTA Central R&D Laboratories, Inc.), Seiya Kasai (Hokkaidou University), Akihisa Ichiki (TOYOTA Central R&D Laboratories, Inc.)

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Compression Efficiency Study of Directional Morphological Wavelet Transform

Masayoshi Nawata (Ritsumeikan University), Shota Shirai (Ritsumeikan University), Masaki Nakai (Ritsumeikan University), Takeshi Kumaki (Ritsumeikan University), Tomohiro Fujita (Ritsumeikan University), Takeshi Ogura (Ritsumeikan University)

A Novel Nonlinear Discriminant Analysis by Iterative Operations

Yohei Takeuchi (The University of Tokushima), Momoyo Ito (The University of Tokushima), Koji Kashihara (The University of Tokushima), Minoru Fukumi (The University of Tokushima)

4PM1–3: Image Processing 2

Date: March 4, 13:00–14:30
Room: Waikiki Ballroom Salon III
Chair: Yang Yang (Xi’an Jiaotong University)

Background Subtraction Using Multi Radial Proportion Filter

Shinya Miyamori (Ritsumeikan University), Kazunori Saito (Ritsumeikan University), Yohei Fukumizu (Ritsumeikan University), Hironori Yamauchi (Ritsumeikan University)

Gaze Estimation Using 3D Active Appearance Models

Yukari Nakamatsu (Kobe University), Tetsuya Takiguchi (Kobe University), Yasuo Ariki (Kobe University)

Reconstruction of Face Figures from 2D Face Images

Kazuyasu Arakaki (Keio University), Yukio Sato (Keio University), Hideto Kameshima (Space Vision), Ikuji Honda (Keio University)

Classification Back Shape of Bodies Using 3D Data

Atsushi Ishida (Keio University), Yukio Sato (Keio University), Ikuji Honda (Keio University)

Statistical Measurements of Plane Optical Flow for Image Restoration

Masato Makishima (Fukuoka Institute of Technology), Michiharu Maeda (Fukuoka Institute of Technology)

4PM1–4: [Special Session] Complex Communication Sciences

Date: March 4, 13:00–14:30
Room: Milo III
Chair: Mikio Hasegawa (Tokyo University of Science)

Analytical Method of Maximum UDP Throughput for One-Way Wireless Multi-Hop Networks Using Markov Chain Model

Kousuke Sanada (Chiba University), Hiroo Sekiya (Chiba University), Nobuyoshi Komuro (Chiba University), Shiro Sakata
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Ken Umeno (National Institute of Information and Communications Technology), Mikio Hasegawa (Tokyo University of Science), Kazuyuki Aihara (University of Tokyo)

**4PM1-4-3** Improving Performance of Multi-Armed Bandit Algorithms Using Lebesgue Spectrum Filter

Hiroshi Kurita (Tokyo University of Science), Tomohiro Kato (Tokyo University of Science), Mikio Hasegawa (Tokyo University of Science)

**4PM1-4-4** Implementation and Evaluation of Chaotic CDMA System Using Software Defined Radio

Yuichi Omori (Tokyo University of Science), Hisashi Watanabe (Tokyo University of Science), Mikio Hasegawa (Tokyo University of Science)

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**4PM2-1: [Special Session] Analysis and Design for Power Electronic Circuits**

Date: March 4, 14:50–16:20
Room: Waikiki Ballroom Salon I
Chair: Hiroo Sekiya (Chiba University)

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Daiki Tanaka (Oita University), Hiroyuki Asahara (Oita University), Takuji Kousaka (Oita University)

**4PM2-1-2** Nonlinear Dynamics of Switching Power Converters with Solar Cell Input

Takaaki Matsumoto (Hosei University), Toshimichi Saito (Hosei University)

**4PM2-1-3** An Enhanced PSO Algorithm for Designing Class E Amplifier

Yuichi Tanji (Kagawa University), Haruna Matsushita (Kagawa University), Hiroo Sekiya (Chiba University)

**4PM2-1-4** Analytical Expressions for Class-\( E_M \) Power Amplifier

Xiuqin Wei (Chiba University), Tomoharu Nagashima (Chiba University), Tadashi Suetsugu (Fukuoka University), Shingo Kuroiwa (Chiba University), Hiroo Sekiya (Chiba University)

**4PM2-1-5** Approximate Analysis for Class-\( E_M \) Amplifier Taking into Account Harmonic Frequency Components

Taro Kakimoto (Chiba University), Tomoharu Nagashima (Chiba University), Xiuqin Wei (Chiba University), Hiroo Sekiya (Chiba University)

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**4PM2-2: Speech Recognition**

Date: March 4, 14:50–16:20
Room: Waikiki Ballroom Salon II
Chair: Shinichi Kawamoto (JAIST)

**4PM2-2-1** Acoustic Model Selection Method for Speaker Dependent Speech Recognition

Kentaro Mori (The University of Tokushima), Satoru Tsuge (Daido University), Shingo Kuroiwa (Chiba University), M-
moyo Ito (The University of Tokushima), Koji Kashihara (The University of Tokushima), Minoru Fukumi (The University of Tokushima)

**4PM2-2-2** Automatic Speech Recognition with Confidence Measures Obtained by Multiple Recognizers of Various Recognition Units

Nobuhisa Suzuki (Doshisha University), Tomoyuki Tanaka (Doshisha University), Masafumi Nishida (Doshisha University), Seiichi Yamamoto (Doshisha University)

**4PM2-2-3** An Experimental Study on Dynamic Features of Speech Structure

Shinya Shimizu (The University of Tokyo), Masayuki Suzuki (The University of Tokyo), Nobuaki Minematsu (The University of Tokyo), Keikichi Hirose (The University of Tokyo)

**4PM2-2-4** Phoneme Recognition Based on AF-HMMs with an Optimal Parameter Set

Narpendyah Ariwardhani (Toyohashi University of Technology), Yurie Iribe (Toyohashi University of Technology), Kouichi Katsurada (Toyohashi University of Technology), Tsuneo Nitta (Toyohashi University of Technology)

**4PM2-2-5** Design of a HMM-Based Speech Recognition Circuit for Robust Keyword Spotting

Katsuya Takahashi (Hokkaido University), Wataru Takahashi (Hokkaido University), Shingo Yoshizawa (Hokkaido University), Yoshikazu Miyanaga (Hokkaido University)

**4PM2-3: Image Processing 3**

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Chair: Hironobu Fukai (Ritsumeikan University)

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Saori Joichi (The University of Electro-Communications), Wataru Mitsuhashi (The University of Electro-Communications)

**4PM2-3-2** Highly-Parallel Watermarking Implementation for Max-Plus Algebra Morphological Wavelet Transform with Massive-Parallel SIMD Matrix Evaluation Board

Yuma Murakami (Ritsumeikan University), Masahiro Osawa (Ritsumeikan University), Shuhei Itaya (Ritsumeikan University), Naoki Matsumoto (Ritsumeikan University), Kei Nakao (Ritsumeikan University), Takeshi Kumaki (Ritsumeikan University), Takeshi Ogura (Ritsumeikan University), Takeshi Fujino (Ritsumeikan University)

**4PM2-3-3** Fast Single Image Dehazing Using Local Statistics of Dark Channel

Akira Mizuno (Hokkaido University), Masayuki Ikebe (Hokkaido University), Masaki Igarashi (Hokkaido University), Sousuke Shimoyama (Hokkaido University), Junichi Motohisa (Hokkaido University)

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Hideaki Kawano (Kyushu Institute of Technology), Hiroyuki Manabe (Kyushu Institute of Technology), Hideaki Orii (Kyushu Institute of Technology), Hiroshi Maeda (Kyushu Institute of Technology)

**4PM2-3-5** Robust Texture Image Retrieval Method Using Support Vector Machine

Syota Takei (Tokyo Denki University), Shigeo Wada (Tokyo Denki University)
**4PM2-4: Ad-Hoc and Sensor Network**

Date: March 4, 14:50–16:20  
Room: Milo III  
Chair: Kui-Ting Chen (Waseda University)

**QoS Control Method in the Ad Hoc Network Based on the Required Bit Rate**  
Kosuke Ohata (Tokyo University of Information Sciences), Tomoya Yamazaki (Tokyo University of Information Sciences), Masaki Hanada (Tokyo University of Information Sciences), MooWan Kim (Tokyo University of Information Sciences)

**Multipoint Relay with Energy-Awareness for System Data Sharing in WSN**  
Jiaqi Zhang (Waseda University), Kui-Ting Chen (Waseda University), Molin Jia (Waseda University), Takaaki Baba (Waseda University)

**CA Based Autonomous Control Method for Networks of Randomly Distributed Sensors**  
Naoyuki Hashimoto (Kagawa University), Hiroyuki Kitajima (Kagawa University)

**New Asymmetric ZCZ Sequence Sets Based on DFT Matrices**  
Hideyuki Torii (Kanagawa Institute of Technology), Takahiro Matsumoto (Yamaguchi University), Makoto Nakamura (Kanagawa Institute of Technology)

**Novel Path Search Method Using Neighborhood Information in Random Network**  
Takuma Nosaka (Sophia University), Masatoshi Sato (Sophia University), Mamoru Tanaka (Sophia University)

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**5AM1-1: Circuit Simulation 1**

Date: March 5, 09:00–10:30  
Room: Waikiki Ballroom Salon I  
Chair: Hiroyuki Yotsuyanagi (Tokushima University)

**Evaluation of Pseudo-Random Sequences Generated with a Cellular Array Models of Reaction-Diffusion Systems**  
Keisuke Nagata (Hiroshima City University), Hisato Fujisaka (Hiroshima City University), Takeshi Kamio (Hiroshima City University), Kazuhisa Haeiwa (Hiroshima City University)

**Generation and Application of Multi-Band Pulse Sequences**  
Yuki Aratani (Hiroshima City University), Takeshi Kamio (Hiroshima City University), Kazuhisa Haeiwa (Hiroshima City University)

**Fast Transistor Sizing Method Using Graph Based Operating Point Driven Formulation**  
Kenta Nose (Ritsumeikan University), Daisuke Nakai (Ritsumeikan University), Tomohiro Fujita (Ritsumeikan University)

**A Memristor-Based Synaptic Device Having an Asymmetric STDP Time Window**  
Taku Adachi (Hokkaido University), Tetsuya Asai (Hokkaido University), Masato Motomura (Hokkaido University)

**Output Voltage of a Floating Metal Line Caused by a Neighboring Metal Line Bending at a Right Angle**  
Ei Haraguchi (The University of Tokushima), Syohei Kondo (The University of Tokushima), Katsuya Manabe (Kagawa...
5AM1–2: Speech Processing 1

Date: March 5, 09:00–10:30
Room: Waikiki Ballroom Salon II
Chair: Greg Short (Tokyo University)

5AM1–2–1 | Study on Robust Voice Activity Detection Using Empirical Mode Decomposition and Modulation Spectrum Analysis
Yasuaki Kanai (Japan Advanced Institute of Science and Technology), Masashi Unoki (Japan Advanced Institute of Science and Technology)

5AM1–2–2 | A Study of Speaker-Dependence Estimation in Reverberant Speech Recognition
Takahiro Fukumori (Ritsumeikan University), Masanori Morise (Ritsumeikan University), Takanobu Nishiura (Ritsumeikan University), Yoichi Yamashita (Ritsumeikan University)

5AM1–2–3 | An Evaluation of Demodulation in Distance for Parametric Loudspeaker Based on Sub-Band Spectral Envelope
Daisuke Ikefuji (Ritsumeikan University), Masanori Morise (Ritsumeikan University), Takanobu Nishiura (Ritsumeikan University)

5AM1–2–4 | Elemental Study of ACE Method Based on OSL as Hearing Aid for Sensorineural Hearing Losses
Yutaka Suzuki (University of Yamanashi), Osamu Sakata (University of Yamanashi), Shun-ichi Imamura (University of Yamanashi), Shuichihiro Endo (University of Yamanashi), Akihito Mizukoshi (University of Yamanashi), Asobu Hattori (Tokyo Metropolitan Industrial Technology Research Institute), Nozomu Iida (University of Yamanashi), Hayato Waki (University of Yamanashi)

5AM1–2–5 | Combination of SPLICE and Feature Normalization for Noise Robust Speech Recognition
Tsunenobu Kai (The University of Tokyo), Masayuki Suzuki (The University of Tokyo), Keigo Chijiiwa (The University of Tokyo), Nobuaki Minematsu (The University of Tokyo), Keikichi Hirose (The University of Tokyo)

5AM1–3: [Special Session] Image Processing and Pattern Recognition 1

Date: March 5, 09:00–10:30
Room: Waikiki Ballroom Salon III
Chair: Yoshifumi Nishio (Tokushima University)

5AM1–3–1 | Nonrigid Face Alignment Using Relative Motion Prior
Yang Yang (Xi’an Jiaotong University), Yuehu Liu (Xi’an Jiaotong University), Yuanqi Su (Xi’an Jiaotong University), Yoshifumi Nishio (Tokushima University)

5AM1–3–2 | A Visual Object Acquiring Platform with Selective Attention
Shaozhuo Zhai (Xian Jiaotong University), Yuehu Liu (Xian Jiaotong University), Ming Hou (Xian Jiaotong University)

5AM1–3–3 | EEG Feature Extraction for Quantification of Human-Interest
Yuna Negishi (Tokyo University of Agriculture and Technology), Zhang Dou (Tokyo Institute of Technology), Yasue Mit-
sukura (Keio University)

**5AM1-3-4** | Walking Motion Feature Detection System Based on EEG Analysis  
Nobuisa Kuramoto (The University of Tokushima), Shin-ichi Ito (The University of Tokushima), Katsuya Sato (The University of Tokushima), Shoichiro Fujisawa (The University of Tokushima)

**5AM1-3-5** | On Investigation of the Intensity Scaling Factor in Fractal Image Coding  
Yoshinori Kitano (Tokushima University), Tetsushi Ueta (Tokushima University), Yoshiyumi Nishio (Tokushima University), Guoan Yang (Xi’an Jiaotong University), Yang Yang (Xi’an Jiaotong University)

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**5AM1-4**: Biocybernetics

Date: March 5, 09:00–10:30  
Room: Milo III  
Chair: Kiyohisa Natsume (Kyushu Institute of Technology)

**5AM1-4-1** | Analysis of NIRS Data from Real and Imagined Complex Finger Tapping Task  
Kentaro Murasugi (Tokyo Denki University), Masaharu Adachi (Tokyo Denki University)

**5AM1-4-2** | Speech Recognition of Whisper Voice Based on EMG Signals  
Natsumi Ohtani (Tokushima University), Yohei Takeuchi (Tokushima University), Momoyo Ito (Tokushima University), Koji Kashihara (Tokushima University), Minoru Fukumi (Tokushima University)

**5AM1-4-3** | Classification of Ankle Motions by EMG  
Yusuke Yamamura (Tokushima University), Yohei Takeuchi (Tokushima University), Momoyo Ito (Tokushima University), Koji Kashihara (Tokushima University), Minoru Fukumi (Tokushima University)

**5AM1-4-4** | A Study of the Influence on EEG Activity by Hearing Emotional Voice  
Yoshihiro Ono (Nagoya Institute of Technology), Shinji Sako (Nagoya Institute of Technology), Arao Funase (Nagoya Institute of Technology), Tadashi Kitamura (Nagoya Institute of Technology)

**5AM1-4-5** | Visual Illusion of Depth Perception During Car Driving  
Yuki Ikami (The University of Tokushima), Koji Kashihara (The University of Tokushima), Momoyo Ito (The University of Tokushima), Minoru Fukumi (The University of Tokushima)

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**5AM2-1**: Circuit Simulation 2

Date: March 5, 10:50–12:20  
Room: Waikiki Ballroom Salon I  
Chair: Xiuqin Wei (Chiba University)

**5AM2-1-1** | Phase Change Memory Cell Designed by Saito’s ∑ △ AD Converter  
Aya Takahashi (Sophia University), Toshimichi Saito (Hosei University), Mamoru Tanaka (Sophia University)

**5AM2-1-2** | An Implementation of an A/D Converter Based on the Negative β-Map  
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5AM2-1-3 Error Characteristics of A/D Converters with Time-Variant Window Depending on Input
Takahumi Kosoba (Hosei University), Toshimichi Saito (Hosei University)

5AM2-1-4 Research on DC-DC Converter of Solar Battery with Spiral Mutual Inductor
Sho Shimizu (Sophia University), Masayuki Yamauchi (Hiroshima Institute of Technology), Mamoru Tanaka (Sophia University)

5AM2-1-5 Steady-State Behavior of Class-E Amplifier Outside Nominal Operation Taking into Account MOSFET-Body-Diode Effect
Tomoharu Nagashima (Chiba University), Hiroo Sekiya (Chiba University)

5AM2-2: Speech Processing 2

Date: March 5, 10:50–12:30
Room: Waikiki Ballroom Salon II
Chair: Atsuo Suemitsu (JAIST)

5AM2-2-1 A Study of Comfortable Sound Design for Stationary Noise Environments Based on Auditory Masking
Misaki Tsujikawa (Ritsumeikan University), Masanori Morise (Ritsumeikan University), Takanobu Nishiura (Ritsumeikan University)

5AM2-2-2 Steering of Localization Sensation on Sound Image with Hybrid Combination of Parametric Loudspeakers and Subwoofer
Yutaro Sugibayashi (Ritsumeikan University), Sota Kurimoto (Ritsumeikan University), Masanori Morise (Ritsumeikan University), Takanobu Nishiura (Ritsumeikan University)

5AM2-2-3 Fundamental Frequency Extraction of Speech in Time-Varying Noise
Tatsuki Kina (Saitama University), Tetsuya Shimamura (Saitama University)

5AM2-2-4 The Application of Isolated Word Recognition to Continuous Speech for Robust Keyword Spotting
Wataru Takahashi (Hokkaido University), Yoshikazu Miyanaga (Hokkaido University)

5AM2-2-5 Speech Enhancement Technique in Noisy Reverberant Environment Using Two Microphone Arrays
Yuuki Sasaki (Japan Advanced Institute of Science and Technology), Masato Akagi (Japan Advanced Institute of Science and Technology)

5AM2-3: [Special Session] Image Processing and Pattern Recognition 2

Date: March 5, 10:50–12:30
Room: Waikiki Ballroom Salon III
Chair: Yasue Mitsukura (Keio University)

5AM2-3-1 Modification of Indistinguishable Colors for Color Defective Vision
Hironori Takimoto (Okayama Prefectural University), Saori Kamio (Okayama Prefectural University), Hitoshi Yamauchi
5AM2: Bio-Inspired Network

Date: March 5, 10:50–12:30
Room: Milo III
Chair: Masaharu Adachi (Tokyo Denki University)

5AM2-1: Excitable Reaction-Diffusion Media with Memristors
Xiyuan Gong (Hokkaido University), Tetsuya Asai (Hokkaido University), Masato Motomura (Hokkaido University)

5AM2-2: Noise-Assisted Spike Transmission on an Array of Electrical FitzHugh-Nagumo Models
Lizeth Gonzalez-Carabarin (Hokkaido University), Tetsuya Asai (Hokkaido University), Masato Motomura (Hokkaido University)

5AM2-3: Proposal of a Trigonometric Polynomial Unit for Neural Networks
Hiroki Yoshimura (Tottori University), Tadaaki Shimizu (Tottori University), Toshie Matsumura (Nara National College of Technology), Maiya Hori (Tottori University), Yoshio Iwai (Tottori University)

5AM2-4: Improvement of Learning Performance of Neural Network Using Neurogenesis
Yuta Yokoyama (Tokushima University), Tomoya Shima (Tokushima University), Chihiro Ikuta (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

5AM2-5: Hopfield Neural Network with Glial Network
Chihiro Ikuta (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University), Guoan Yang (Xi’an Jiaotong University)

5PM1: Chaos and Modeling

Date: March 5, 13:20–14:50
Room: Waikiki Ballroom Salon I
Chair: Hironori Kumeno (Tokushima University)

5PM1-1: Chaotic Cipher Using a Map Generated by the Mersenne Twister
Daiki Yoshida (Meiji University), Arikoshi Nakayama (Meiji University), Hirotaka Watanabe (Meiji University), Taichi Sato (Meiji University), Yoshiaki Kawanishi (Meiji University), Syuhei Kuriyama (Meiji University), Syohei Honda (Meiji University)
Study on the Characteristic Analysis and Evaluation of Digital Chaotic System Operated by the Fixed Point Arithmetic

Hirotaka Watanabe (Meiji University), Taichi Sato (Meiji University), Ariyoshi Nakayama (Meiji University), Daiki Yoshida (Meiji University), Yoshiaki Kawanishi (Meiji University), Hiroyuki Kamata (Meiji University)

Analysis and Synthesis of Time Series Waveform by Covariance Structure Analysis

Yoshiyuki Kobori (Sophia University), Masatoshi Sato (Sophia University), Mamoru Tanaka (Sophia University)

The Electric Potential Distribution by Maximum Flow Neural Network

Masatoshi Sato (Sophia University), Mamoru Tanaka (Sophia University)

5PM1–2: Speech Processing 3

Date: March 5, 13:20–14:50
Room: Waikiki Ballroom Salon II
Chair: Takanobu Nishiura (Ritsumeikan University)

Perceptually-Based Lexical Accent Recognition for a Japanese CALL System

Greg Short (Tokyo University), Keikichi Hirose (Tokyo University), Nobuaki Minematsu (Tokyo University)

Investigation of Perceptual Effects During Learning Process via Vowel Imitation

Kazuya Fujii (Japan Advanced Institute of Science and Technology), Atsuo Suemitsu (Japan Advanced Institute of Science and Technology), Jianwu Dang (Japan Advanced Institute of Science and Technology / Tianjin University)

Detecting Sound Leakage from Headphones by Using Lavaliere Microphones

Kazufumi Nakamura (Hosei University), Katunobu Itou (Hosei University)

Study of Hearing Impression of Speaker Identification Focusing on Dynamic Features

Tsuyoshi Izumida (Japan Advanced Institute of Science and Technology), Masato Akagi (Japan Advanced Institute of Science and Technology)

Reconstruction of Music from Network Motifs Using Real Sound Synthesis

Tetsuya Yukinari (Konan University), Yuki Tanda (Konan University), Masahiro Wada (Konan University)

5PM1–3: Video and Signal Image Processing

Date: March 5, 13:20–14:50
Room: Waikiki Ballroom Salon III
Chair: Tian Song (Tokushima University)

Implementation Results and Application of Real-Time Morphological Pattern Spectrum Analyzer on Cellular-Automata Hardware

Zarina Rafii (Ritsumeikan University), Kumaki Takeshi (Ritsumeikan University), Fujita Tomohiro (Ritsumeikan University), Mamoru Nakanishi (NTT Microsystem Integrations Laboratories), Ogura Takeshi (Ritsumeikan University)
Corner Detection Based Low Complexity SIFT Algorithm for Real-time Keypoints Matching

Takahiro Suzuki (Waseda University), Takeshi Ikenaga (Waseda University)

Motion Vector Management Architecture for 4K Resolution H.264/AVC Decoder

Kentaro Takei (Tokushima University), Takaфumi Bando (Tokushima University), Naoyuki Ishikura (Tokushima University), Tian Song (Tokushima University), Takashi Shimamoto (Tokushima University)

Color-Based Tracking Method of Objects for Accommodating Target’s Pose and Appearance

Yojiro Oyama (Keio University), Satoshi Hirose (Keio University), Nozomu Hamada (Keio University)

Effect of Alcohol Concentrations in Blood on Voice Signals from Human Body

Naoki Fujiwara (Tottori University), Akihiro Tanaka (Tottori University), Kentaro Kinoshita (Tottori University), Satoru Kishida (Tottori University)

Robust Detecting Method of Absolute Arrhythmia

Kenji Hashiodani (Ritsumeikan University), Shinichi Takada (Ritsumeikan University), Yohei Fukumizu (Ritsumeikan University), Hironori Yamauchi (Ritsumeikan University), Yoshimasu Kurumi (Shiga University of Medical Science), Tohru Tani (Shiga University of Medical Science)

Recognition of Finger Motion by Wrist EMG

Takahide Funabashi (Tokushima University), Momoyo Ito (Tokushima University), Koji Kashihara (Tokushima University), Minoru Fukumi (Tokushima University)

Evaluation Method for Riding Comfort on Bike Using the Biological Signal

Kei Takaoka (Tokyo University of Agriculture and Technology), Taiki Fuji (Tokyo University of Agriculture and Technology), Kouji Taka (Bridgestone Corporation), Kazutomu Murakami (Bridgestone Corporation), Takatsugu Hashimoto (Bridgestone Corporation), Yasue Mitsukura (Keio University)

Investigation of Biometric Date Input to Multi-Layer Perceptron

Kana Kurata (Tokushima University), Chihiro Ikuta (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

On Measuring Timing Slack Using Boundary Scan with Time-to-Digital Converter for Detecting Delay Faults

Hiroyuki Makimoto (The University of Tokushima), Hiroyuki Yotsuyanagi (The University of Tokushima), Masaki...
The Test Vector Compaction Considering Compatible Flip-Flops for BIST-Aided Scan Test
Yasuhiro Okada (Tokushima University), Hiroyuki Yotsuyanagi (Tokushima University), Masaki Hashizume (Tokushima University)

Switched-Capacitor Circuit Implementation of the Golden Ratio Encoder - Effects of Offset Voltage and Finite Gain of the Op-Amp -
Hirotaka Fukushima (Tokyo Denki University), Yoshihiko Horio (Tokyo Denki University), Kazuyuki Aihara (The University of Tokyo)

Observation of Bifurcation Phenomena in PWM-1 Controlled System with Switching Delay
Kenichi Tasaki (Oita University), Hiroyuki Asahara (Oita University), Takuji Kousaka (Oita University)

An Efficient Transient Simulation Method for Multilayered Power/Ground Planes Using Hybrid Modeling Method
Takayuki Watanabe (University of Shizuoka)

Date: March 5, 15:10–16:40
Room: Waikiki Ballroom Salon II
Chair: Tomoya Suzuki (Ibaraki University)

Classification Function of Radial Basis Adaptive Resonance Theory Maps and its Application
Yoko Enosawa (Hosei University), Haruna Matsushita (Kagawa University), Yasuhiro Tanaka (Tanaka Women’s Clinic), Naoaki Kuji (Keio University), Toshimichi Saito (Hosei University)

Parallel Learning of Growing SOMs and Application to TSP
Kazuki Sunakawa (Hosei University), Toshimichi Saito (Hosei University)

Improvement in Solution Search Performance of Deterministic PSO Using a Golden Angle
Takuya Shindo (Nippon Institute of Technology), Ryousuke Sano (Hosei University), Toshimichi Saito (Hosei University), Kenya Jin’no (Nippon Institute of Technology)

Combinatorial Optimization by the Cooperative Mechanism of Ant Colony and Aphid
Naoto Hara (Tokushima University), Yudai Shirasaki (Tokushima University), Sho Shimomura (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

Application of Ant Colony Optimization Using Genetic Information to QAP
Sho Shimomura (Tokushima University), Haruna Matsushita (Kagawa University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

Date: March 5, 15:10–16:40
Room: Waikiki Ballroom Salon III
Chair: Tadashi Yamaguchi (Chiba University)

**5PM2-3-1** Theoretical and Experimental Study of Continuous-Time Image Reconstruction System for Computed Tomography

Yusaku Yamaguchi (The University of Tokushima), Ken’ichi Fujimoto (The University of Tokushima), Tetsuya Yoshinaga (The University of Tokushima)

**5PM2-3-2** Convergence of Iterative Method as Discretization of Continuous-Time Image Reconstruction System for Computed Tomography

Kiyoko Tateishi (The University of Tokushima), Ken’ichi Fujimoto (The University of Tokushima), Tetsuya Yoshinaga (The University of Tokushima)

**5PM2-3-3** Automatic Detecting Stenotic Murmur Method for Portable Medical System Based on Time-domain PCA and EM Algorithm

Shinichi Takada (Ritsumeikan University), Kenji Hashiodani (Ritsumeikan University), Yohei Fukumizu (Ritsumeikan University), Hironori Yamauchi (Ritsumeikan University), Hiroshi Sakai (Shiga University of Medical Science), Minoru Horie (Shiga University of Medical Science)

**5PM2-3-4** Morphological Personalization According to Human Mechanism Using MR Images

Nana Nishimura (Japan Advanced Institute of Science and Technology), Shin’ichi Kawamoto (Japan Advanced Institute of Science and Technology), Jianwu Dang (Japan Advanced Institute of Science and Technology / Tianjin University)

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**5PM2-4: [Special Session] Nonlinear Approach to Cognition and Brain-Inspired Intelligence**

Date: March 5, 15:10–16:40
Room: Milo III
Chair: Katsumi Tateno (Kyushu Institute of Technology)

**5PM2-4-1** The Change in EEG When You Are Bored

Touma Katayama (Kyushu Institute of Technology), Kiyohisa Natsume (Kyushu Institute of Technology)

**5PM2-4-2** Directional Spike Propagation in a Recurrent Network Affected by Synaptic Plasticity Changing Intensity and Timing of Inhibition

Toshikazu Samura (Kyushu Institute of Technology), Hatsuo Hayashi (Kyushu Institute of Technology)

**5PM2-4-3** Synchronization in the Taste Bud-Inspired Sensor Network

Katsumi Tateno (Kyushu Institute of Technology), Yoshitaka Ohtubo (Kyushu Institute of Technology)

**5PM2-4-4** Attractor Dynamics Approach to Vehicle Behavior Control: a Transformation between Different State-Space of Nonlinear Dynamics

Hiroaki Wagatsuma (Kyushu Institute of Technology), Kosuke Ono (Kyushu Institute of Technology)

**5PM2-4-5** An Application of Attractor Dynamics to Autocruise Control Systems by Using a Mobile Robot and Real-Time Simulator

Kosuke Ono (Kyushu Institute of Technology), Hiroaki Wagatsuma (Kyushu Institute of Technology)

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**6AM1-1: [Special Session] Cellular Neural Networks and their Applications**

Date: March 6, 09:00–10:30
Room: Waikiki Ballroom Salon I
Combination of Two Neurons for a Cell in Cellular Neural Networks
Nurul Amirah binti Ramlan (Tokushima University), Yoshihiro Kato (Tokushima University), Yasuhiro Ueda (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

Shift-Variant Discrete-Time Cellular Neural Network for Image Coding
Kei Chiba (Tamagawa University), Tsuyoshi Otake (Tamagawa University), Hisashi Aomori (Tokyo University of Science), Nobuaki Takahashi (IBM), Mamoru Tanaka (Sophia University)

Checking Method of State Equation Constructed by Covariance Structure Analysis
Shizuka Gondo (Sophia University), Mamoru Tanaka (Sophia University)

Dynamical ADC Image Processing of CNN by Saito’s Rotation Map
Jun Kamijo (Sophia University), Mamoru Tanaka (Sophia University), Toshimichi Saito (Hosei University)

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Fundamental Characteristic of Deterministic Discrete Hysteresis PSO
Kenya Jin’ no (Nippon Institute of Technology), Yu Shukuzawa (Nippon Institute of Technology), Takuya Shindo (Nippon Institute of Technology)

A Proposal of Flexible Hardware Architecture for Particle Swarm Optimization
Kui-Ting Chen (Waseda University), Jiaqi Zhang (Waseda University), Molin Jia (Waseda University), Takaaki Baba (Waseda University)

Co-Evolutionary Strategy for Nonlinear Constrained System Based on Particle Swarm Optimization
Darong Chen (Waseda University), Molin Jia (Waseda University), Kui-Ting Chen (Waseda University), Takaaki Baba (Waseda University)

A Basic Study on Quantum-Inspired Evolutionary Algorithm Using Integer Type Gene Coding Method Based on Quantum Bit Representation
Ichiro Iimura (Prefectural University of Kumamoto), Yoshifumi Moriyama (Ariake National College of Technology), Shigeru Nakayama (Kagoshima University)

Study on Adiabatic Quantum Computation in Deutsch Problem
Shigeru Nakayama (Kagoshima University)

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Image Recognition 1

Date: March 6, 09:00–10:30
Room: Waikiki Ballroom Salon III
Show-Through Cancellation in Scanned Documents Using Multi-Level Independent Component Analysis

Mikio Oda (Kumamoto National College of Technology), Hiromi Miyajima (Kagoshima University)

A Proposal of Interactive Segmentation Method for Touching Characters

Tsukasa Masuhara (Kyushu Institute of Technology), Hideaki Kawano (Kyushu Institute of Technology), Hideaki Orii (Kyushu Institute of Technology), Norikazu Ikoma (Kyushu Institute of Technology), Hiroshi Maeda (Kyushu Institute of Technology)

Human Action Recognition with Optical Flow and Space-Time Patch

Manabu Yoshida (The University of Electro-Communications), Haruhisa Takahashi (The University of Electro-Communications)

Development of View Magnification Interface by Using Wearable Cameras for Weak Eyesight People

Hideaki Kawano (Kyushu Institute of Technology), Masafumi Aoki (Kyushu Institute of Technology), Hideaki Orii (Kyushu Institute of Technology), Hiroshi Maeda (Kyushu Institute of Technology), Norikazu Ikoma (Kyushu Institute of Technology)

Recognition License Plate in Degraded Images Using Pseudo Degraded Numbers

Atsushi Fujioka (Ritsumeikan University), Kentaro Aoki (Ritsumeikan University), Yohei Fukumizu (Ritsumeikan University), Hironori Yamauchi (Ritsumeikan University)

An Analysis of a Non-Coherent Delay-Locked Loop Under Multipath Fading Channels

Keisuke Nagata (Hiroshima City University), Hisato Fujisaka (Hiroshima City University), Takeshi Kamio (Hiroshima City University), Kazuhisa Haeiwa (Hiroshima City University)

Optimal Sensor Selection for Single-trial P300 Brain-Computer Interface

Keisuke Tawada (Keio University), Yasue Mitsukura (Keio University)

Consideration of Channel Capacity Guaranteed on MIMO Communication with Array Antenna Placed on Spherical Surface

Tetsuya Hikida (Tokushima University), Takahiro Oie (Tokushima University)

P2P Streaming Method with Effective Bandwidth Usage

Masaki Hanada (Tokyo University of Information Sciences), Hidehiro Kanemitsu (Waseda University)

Fundamental Study on EEG Analysis for Safety Driving Support System

Kazuya Yaegashi (The University of Tokushima), Momoyo Ito (The University of Tokushima), Koichiro Mori (The University of Tokushima), Kazuhito Sato (Akita Prefectural University), Koji Kashihara (The University of Tokushima), Minoru Fukumi (The University of Tokushima)
6AM2–1: Bifurcation

Date: March 6, 10:50–12:20
Room: Waikiki Ballroom Salon I
Chair: Kyohei Kamiyama (Meiji University)

6AM2–1–1 Laboratory Experiment of Mixed-Mode Oscillations in a Weakly Driven Bonhoeffer-van der Pol Oscillator

Yuto Saito (Chiba Institute of Technology), Kuniyasu Shimizu (Chiba Institute of Technology), Munehisa Sekikawa (The University of Tokyo), Naohiko Inaba (Meiji University), Yutaka Haga (Chiba Institute of Technology)

6AM2–1–2 Effect Analysis of the Switching Delay in the Chaotic Attractor Observed in a Simple Interrupted Circuit

Akihito Matsuo (Oita University), Hiroyuki Asahara (Oita University), Takuji Kousaka (Oita University)

6AM2–1–3 Bifurcation and Synchronization Phenomena of Coupled Nagumo-Sato Models

Kazutoshi Kinoshita (Tokushima University), Tetsushi Ueta (Tokushima University), Jun’ichi Imura (Tokyo Institute of Technology), Kazuyuki Aihara (The University of Tokyo)

6AM2–1–4 Coexistence Phenomenon Observed in Coupled Chua’s Circuits Involving Parameter Varying

Hironori Kumeno (Tokushima University), Daniele Fournier-Prunaret (Toulouse University), Yoshifumi Nishio (Tokushima University)

6AM2–1–5 Computation of Unstable Periodic Points Embedded in a Horseshoe Map

Takaya Nakanishi (Tokushima University), Tetsushi Ueta (Tokushima University), Hiroshi Kawakami (Japan Science and Technology Agency), Jun’ichi Imura (Tokyo Institute of Technology), Kazuyuki Aihara (The University of Tokyo)

6AM2–2: Detection

Date: March 6, 10:50–12:30
Room: Waikiki Ballroom Salon II
Chair: Takahiro Kitajima (Tokushima University)

6AM2–2–1 Study on Detectability of Signals by Utilizing Differences in Their Amplitude Modulation

Yuta Yano (Japan Advanced Institute of Science and Technology), Ryota Miyauchi (Japan Advanced Institute of Science and Technology), Masashi Unoki (Japan Advanced Institute of Science and Technology), Masato Akagi (Japan Advanced Institute of Science and Technology)

6AM2–2–2 Fingerprints Feature Extraction for Human Recognition Based on Bifurcation Points Using Genetic Algorithm

Stephen Karungaru (The University of Tokushima), Kenji Terada (The University of Tokushima), Minoru Fukumi (The University of Tokushima)

6AM2–2–3 Detection of Abandoned Objects in Public Facilities

Fumitoshi Taoka (The University of Tokushima), Momoyo Ito (The University of Tokushima), Koji Kashihara (The University of Tokushima), Minoru Fukumi (The University of Tokushima)

6AM2–2–4 Employing Short- and Long-Term Tracker for Detection and Tracking of Multiple Moving Objects

Jun Nakasono (The University of Electro-Communications), Wataru Mitsuhashi (The University of Electro-Communications)
**6AM2-2-5: Inspection of Ground Condition for a Mobility Scooter by Kinect Sensor**
Masahiro Tanaka (Konan University), Hirofumi Kaku (Konan University)

**6AM2-3: Image Recognition 2**

Date: March 6, 10:50–12:30
Room: Waikiki Ballroom Salon III
Chair: Tsuyoshi Otake (Tamagawa University)

**6AM2-3-1: Integrated Multimodal Information for Detection of Unknown Objects and Unknown Names**
Yuko Ozasa (Kobe University), Naoto Iwahashi (National Institute of Information and Communications Technology), Tetsuya Takiguchi (Kobe University), Yasuo Ariki (Kobe University), Mikio Nakano (Honda Research Institute)

**6AM2-3-2: Speaker Dependent Word Lip Reading Using Code Sequence of Mouth Shape from Utterance Scene**
Yuki Sugata (Keio University), Nozomu Hamada (Keio University)

**6AM2-3-3: Expression Recognition Using Local Gabor Directional Pattern Histogram Sequence (LGDPHS)**
Atsushi Higashi (Ritsumeikan University), Yohei Fukumizu (Ritsumeikan University), Hironori Yamauchi (Ritsumeikan University)

**6AM2-3-4: Tired State Recognition During Sports Using Image Processing**
Stephen Karungaru (The University of Tokushima), Takuya Higashidani (The University of Tokushima), Kenji Terada (The University of Tokushima)

**6AM2-4: Communication Systems 2**

Date: March 6, 10:50–12:30
Room: Milo III
Chair: Shintaro Arai (Kagawa National College of Technology)

**6AM2-4-1: Harmonics Estimation for Reducing Return Current Noise in Automatic Train Control Systems**
Daijiro Shimizu (Saitama University), Tetsuya Shimamura (Saitama University), Takuya Wakutsu (The Nippon Signal Co., LTD.), Atsushi Sugawara (The Nippon Signal Co., LTD.)

**6AM2-4-2: Fractional N Frequency Synthesizer Using Accumulator-Type Frequency Detector**
Yu Yamasumi (The University of Tokushima), Takahiro Oie (The University of Tokushima)

**6AM2-4-3: A Joint Timing and Frequency Synchronization with Preamble-Aided Scheme for OFDM Systems**
Cheng Zhang (Waseda University), Kui-Ting Chen (Waseda University), Molin Jia (Waseda University), Takaaki Baba (Waseda University)

**6AM2-4-4: A Peer Grouping Policy for Processor Utilization in a Peer-to-Peer Grid**
Hidehiro Kanemitsu (Waseda University), Masaki Hanada (Tokyo University of Information Sciences)
**6AM2–4–5** System Construction of Data Collection Assistance for Shelter Information of Tsunami Evacuation Activity

Takanori Sakurai (Shikoku University), Satoshi Togawa (Shikoku University), Kazuhide Kanenishi (The University of Tokushima)

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**6PM1–1: Coupled Oscillators**

Date: March 6, 13:20–14:50
Room: Waikiki Ballroom Salon I
Chair: Kuniyasu Shimizu (Chiba Institute of Technology)

**6PM1–1–1** Synchronization in Inhibitory Coupled Morris-Lecar Neurons

Masaya Hayashi (Kagawa University), Hiroyuki Kitajima (Kagawa University)

**6PM1–1–2** Bifurcation of Quasi-Periodic Oscillation in Mutually-Coupled Hard Type Oscillators: Asymmetrical Case

Kyohei Kamiyama (Meiji University), Motomasa Komuro (Teikyo University of Science), Tetsuro Endo (Meiji University)

**6PM1–1–3** Bifurcation Phenomena of a Light Coupled Oscillator with a Clock Pulse Input

Daisuke Ito (Tokushima University), Takaya Nakanishi (Tokushima University), Akinori Tsuji (Tokushima University), Tetsushi Ueta (Tokushima University), Hiroshi Kawakami (Japan Science and Technology Agency)

**6PM1–1–4** Frustrated Synchronization in Coupled Oscillator Chains with Unbalanced Parametric Distribution

Kosuke Matsumura (Tokushima University), Takahiro Nagai (Tokushima University), Hironori Kumeno (Tokushima University), Yoko Uwate (Tokushima University), Yoshifumi Nishio (Tokushima University)

**6PM1–1–5** Study on the Speech Synthesis with Vocal-Cords Fluctuation Using Multi-Oscillators

Takaaki Kondo (Meiji University), Yuki Naniwa (Meiji University), Kyohei Kamiyama (Meiji University), Tomohisa Okawa (Meiji University), Shun Kadoi (Meiji University), Hiroyuki Kamata (Meiji University)

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**6PM1–2: Adaptive Systems**

Date: March 6, 13:20–14:50
Room: Waikiki Ballroom Salon II
Chair: Takashi Yasuno (Tokushima University)

**6PM1–2–1** Feedforward Active Noise Control Systems with Controlled Injection of Probe Noise for Secondary Path Modeling

Akihisa Oishi (The University of Electro-Communications), Muhammad Akhtar (The University of Electro-Communications), Wataru Mitsuhashi (The University of Electro-Communications)

**6PM1–2–2** Modified-FxLMS Algorithm-Based Active Noise Control Systems with Reduced Complexity and Improved Noise-Reduction-Performance

Shakeel Ahmed (The University of Electro-Communications), Muhammad Akhtar (The University of Electro-Communications), Wataru Mitsuhashi (The University of Electro-Communications)

**6PM1–2–3** Position Control of Tendon-Driven Joint Using Adaptive Two-Degree-of-Freedom Control System

Daisuke Nishigawa (The University of Tokushima), Takashi Yasuno (The University of Tokushima)
A Study of Constructing Active Noise Control System

Koji Hamada (Hiroshima City University), Shunsuke Ishimitsu (Hiroshima City University), Takehiro Ueganiwa (Hiroshima City University), Keisuke Namekawa (Suzuki Motor Corporation), Toshihisa Takagi (Suzuki Motor Corporation), Kazuki Yoshida (Suzuki Motor Corporation), Kenta Suzuki (Suzuki Motor Corporation), Takanori Chino (Suzuki Motor Corporation)

6PM1-3: [Special Session] Medical Images

Date: March 6, 13:20–14:50
Room: Waikiki Ballroom Salon III
Chair: Toshiya Nakaguchi (Chiba Uniersity)

6PM1-3-1 Ultrasound Assisted Diagnosis and Surgery for Liver Diseases
Tadashi Yamaguchi (Chiba University), Satoki Zenbutsu (Chiba University)

6PM1-3-2 Estimating Oxygen Saturation of Decubitus from its Color Spectrum
Satoshi Yamamoto (Keio University), Shumpei Watanabe (Chiba University), Tetsuo Akiba (AKIBA Clinic of Traditional Me), Norimichi Tsumura (Chiba University), Keiko Ogawa-Ochiai (Kanazawa University Hospital)

6PM1-3-3 Development of AR-based ICG Fluorescence Imaging System
Toshiya Nakaguchi (Chiba University), Taku Suzuki (Chiba University), Seiji Ohtsubo (Kushiro Rosai Hospital), Hideki Hayashi (Chiba University), Mitsuo Kusano (Kushiro Rosai Hospital)

6PM1-3-4 Ensemble Learning in the Systems of Neural Networks for Detection of Abnormal Shadows from X-ray Images of Lungs
Takahiro Sasaki (Tottori University), Kentaro Kinoshita (Tottori University), Satoru Kishida (Tottori University), Yoshiharu Hirata (Tottori University Hospital), Seigo Yamada (Tottori University Hospital)

6PM1-4: Filter

Date: March 6, 13:20–14:50
Room: Milo III
Chair: Hiroyuki Yashima (Tokyo University of Science)

6PM1-4-1 Efficient Phase Optimization for Sounds with Condenced Energy Density
Nobuhiro Sunada (The University of Tokyo), Shinya Shimizu (The University of Tokyo), Keikichi Hirose (The University of Tokyo), Nobuaki Minematsu (The University of Tokyo)

6PM1-4-2 Musical Performance with Intermittent Chaos
Susumu Miyazaki (Sophia University), Masatoshi Sato (Sophia University), Mamoru Tanaka (Sophia University)

6PM1-4-3 A Flexible Control of Adaptive FIR Filter with Particle Swarm Optimization
Molin Jia (Waseda University), Huijiao Dong (Waseda University), Darong Chen (Waseda University), Kui-Ting Chen (Waseda University), Takaaki Baba (Waseda University)

6PM1-4-4 Low Cost Hardware Design for Multi-Dimension Particle Swarm Optimization
Huijiao Dong (Waseda University), Molin Jia (Waseda University), Kui-Ting Chen (Waseda University), Takaaki Baba
6PM2–1: Complex Systems

Date: March 6, 15:10–16:40
Room: Waikiki Ballroom Salon I
Chair: Kenya Jin’no (Nippon Institute of Technology)

6PM2–1–1 Time Development of Ring-Type CA from Which a Rule Number is Different at Each Space 732
Takayoshi Suzuki (Hosei University), Toshimichi Saito (Hosei University)

6PM2–1–2 Several Spatio-Temporal Phase Patterns in Coupled Chaotic Maps with Delays 736
Hiroyuki Kowa (Konan University), Masahiro Wada (Konan University)

6PM2–1–3 Properties of Small-World Networks with Vertex Reduction 740
Koji Uchida (Fukuoka Institute of Technology), Michiharu Maeda (Fukuoka Institute of Technology)

6PM2–1–4 Stock Portfolio Management with Nonlinear Time Series Prediction 744
Satoshi Inose (Ibaraki University), Tomoya Suzuki (Ibaraki University)

6PM2–1–5 Evaluating the Risk of Nonlinear Prediction with the Bagging Algorithm 748
Kazuya Nakata (Ibaraki University), Tomoya Suzuki (Ibaraki University)

6PM2–2: Estimation

Date: March 6, 15:10–16:40
Room: Waikiki Ballroom Salon II
Chair: Tetsuya Shimamura (Saitama University)

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Atsushi Nomura (Yamaguchi University), Makoto Ichikawa (Chiba University), Koichi Okada (Yamaguchi University), Tatsunari Sakurai (Chiba University), Yoshiki Mizukami (Yamaguchi University)

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