

2014 IEEE International Workshop on Electromagnetics:
Applications and Student Innovation Competition



iWEM 2014

The Conference Hall, Hokkaido University
August 4-6, 2014, Sapporo, Hokkaido, Japan

PROGRAM



Organized by:
IEEE AP-S Japan Chapter

Co-Sponsored by:
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Session at a Glance

Monday, August 4	
09:50-10:20	Opening Ceremony
10:20-11:00	Keynote Speech Title: <i>Signal Processing Antenna Techniques for Wireless Communications</i> Speaker: <i>Prof. Yasutaka Ogawa (Hokkaido University, Japan)</i> Chair: <i>Hiroyoshi Yamada (Niigata University, Japan)</i>
11:00-11:20	Break (Incl. poster preparing)
11:20-12:10	MA1: Design Techniques and Theory for Printed Antennas Invited Speaker (Organizer): <i>Dau-Chyrh Chang (Oriental Institute of Technology, Taiwan)</i> Chair: <i>Ruey-Bing Hwang (National Chiao Tung University, Taiwan)</i>
12:10-13:40	POS1: Poster I (Lobby) Chair: <i>Jiro Hirokawa (Tokyo Tech, Japan)</i>
13:40-15:00	MP1: Novel Techniques for Future Wireless Systems Organizer: <i>Qiang Chen (Tohoku University, Japan)</i> Co-Chairs: <i>Qiang Chen (Tohoku University, Japan), Kunio Sakakibara (Nagoya Institute of Technology, Japan)</i>
15:00-15:15	Break
15:15-16:35	MP2: Advanced Wireless Propagation and Systems Co-Chairs: <i>Kentaro Nishimori (Niigata University, Japan), Ngochao Tran (NTT DOCOMO, INC., Japan)</i>
16:35-16:50	Break
16:50-18:00	MP3: New Antenna Techniques Invited Speaker (Organizer): <i>Joshua Le-Wei Li (University of Electronic Science & Technology of China, P.R. China)</i> Chair: <i>Joshua Le-Wei Li (University of Electronic Science & Technology of China, P.R. China)</i>
18:30-	Welcome Reception at Cafeteria of Hokkaido University

Tuesday, August 5	
09:10-10:30	TA1: <i>Antenna Systems</i> Organizer: <i>Mitoshi Fujimoto (University of Fukui, Japan)</i> Co-Chairs: <i>Mitoshi Fujimoto (University of Fukui, Japan), Naoki Honma (Iwate University, Japan)</i>
10:30-10:50	Break (Incl. poster preparing)
10:50-12:10	TA2: <i>Novel Microwave Circuits and Subsystems</i> Organizer: <i>Wenquan Che (Nanjing University of Science and Technology, P.R. China)</i> Co-Chairs: <i>Wenquan Che (Nanjing University of Science and Technology, P.R. China), Kaixue Ma (University of Electronic Science and Technology of China, P.R. China)</i>
12:10-13:40	POS2: <i>Poster II (Lobby)</i> Chair: <i>Takeshi Fukusako (Kumamoto University, Japan)</i> <hr/> TP1: <i>Student Oral Presentations</i> (12:40-13:20) Chair: <i>Takuji Arima (Tokyo University of Agriculture and Technology, Japan)</i>
13:40-15:00	TP2: <i>Mobile Propagation</i> Organizer: <i>Tetsuro Imai (NTT DOCOMO, Inc., Japan)</i> Co-Chairs: <i>Tetsuro Imai (NTT DOCOMO, Inc., Japan), Takashi Hikage (Hokkaido University, Japan)</i>
15:00-15:15	Break
15:15-16:35	TP3: <i>Advanced Antenna Measurement</i> Organizer: <i>Takayuki Sasamori (Akita Prefectural University, Japan)</i> Co-Chairs: <i>Takayuki Sasamori (Akita Prefectural University, Japan), Toru Fukasawa (Mitsubishi Electric Corporation, Japan)</i>
16:35-16:50	Break
16:50-18:00	TP4: <i>Antennas for Wireless Applications I</i> Invited Speaker (Organizer): <i>Kwai-Man Luk (City University of Hong Kong, Hong Kong)</i> Chair: <i>Kwai-Man Luk (City University of Hong Kong, Hong Kong)</i>
18:30-	Banquet at Aspen Hotel 2nd Floor
Wednesday, August 6	
9:10-10:20	WA1: <i>Antennas and Numerical Techniques for Biomedical Applications</i> Invited Speaker (Organizer): <i>Jaehoon Choi (Hanyang University, Korea)</i> Chair: <i>Jaehoon Choi (Hanyang University, Korea)</i>
10:20-10:35	Break
10:35-11:55	WA2: <i>Antennas for Wireless Applications II</i> Organizer: <i>Kwai-Man Luk (City University of Hong Kong, Hong Kong)</i> Chair: <i>Kin-Fai Tong (UCL, University of London, United Kingdom)</i>
11:55-12:20	Closing

Committee Members

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Keynote Speech

Title: *Signal Processing Antenna Techniques for Wireless Communications*

Speaker: *Prof. Yasutaka Ogawa (Graduate School of Information Science and Technology Hokkaido University)*

Abstract: *Various applications of signal processing antenna techniques have been extensively studied over the last two decades for commercial wireless communications. An adaptive antenna (a simplified signal processing antenna) can suppress interference and accommodate more users. On the other hand, multiple-input multiple-output (MIMO) systems have rapidly been developed because they provide high data-rate transmission without increasing the frequency bandwidth. MIMO techniques are relevant to several research fields such as antenna technologies, radio wave propagation, signal processing, communications, and information theory. Many researchers in these different fields have been studying them, and MIMO systems are already in practical use in wireless local area networks (WLANs) and the long term evolution (LTE) of cellular networks. MIMO systems are another application of the signal processing antenna techniques. If cellular network traffic doubles every year due to the rapid and wide spread of smartphones, we will need to accommodate 1,000 times the current traffic in ten years. MIMO systems will play an important role in such a situation.*

In this talk, the basic concept and applications of the signal processing antenna techniques will be shared with the audience. First, the principle of the adaptive antenna will be clarified, and the research history will be outlined. Then, this presentation will introduce space division multiple access (SDMA) with a multibeam adaptive antenna. The technique can accommodate multiple users at the same time and frequency. SDMA was implemented in the Personal Handy-phone System (PHS) in Japan. The implementation in which the speaker was involved is the world's first realization of SDMA.

Furthermore, some important features of MIMO systems will be discussed. On the basis of indoor measurement results, the performance of multi-user MIMO systems in time-varying environments will be clarified, and channel predictions, which are counter measures against the time dependent channels, will be introduced. Finally, future work on antenna researchers will be stated.

Biography: **Yasutaka Ogawa** received B.E., M.E. and Ph.D. degrees from Hokkaido University, Sapporo, Japan in 1973, 1975, and 1978. Since 1979, he has been part of the faculty at Hokkaido University, where he is currently a professor of the Graduate School of Information Science and Technology. In 1992–1993, he was with the ElectroScience Laboratory, Ohio State University, U.S.A., as a visiting scholar, on leave from Hokkaido University.



His professional expertise encompasses super-resolution estimation techniques, applications of adaptive antennas for mobile communication, MIMO techniques, and measurement techniques. He proposed a basic and important technique for time-domain super-resolution estimation for electromagnetic wave measurements such as antenna gain measurement, scattering/diffraction measurement, and radar imaging. Also, his expertise and commitment to advancing the development of adaptive antennas contributed to the realization of SDMA in the PHS.

He received the Yasujiro Niwa Outstanding Paper Award in 1978, the Young Researchers' Award from the Institute of Electronics, Information and Communication Engineers (IEICE) in 1982, the Best Paper Award from IEICE in 2007, TELECOM System Technology Award from the Telecommunications Advancement Foundation of Japan in 2008, and the Best Magazine Paper Award in 2011 from the IEICE Communications Society. He also received the Hokkaido University Commendation for excellent teaching in 2012.

He was a chairperson of the IEEE Sapporo Section in 2011–2012 and the IEICE Hokkaido Section in 2012–2013. He is a Fellow of the IEICE and IEEE.

Invited Speakers

- **Prof. Dau-Chyrh Chang** (Oriental Institute of Tech., Taiwan)
- **Prof. Kwai Man Luk**, (City Univ. of Hong Kong, SAR of China)
- **Prof. Joshua Le-Wei Li** (Univ. of Electronic Science & Tech. of China, China)
- **Prof. Jaehoon Choi** (Hanyang Univ., Korea)

Student Innovation Competition

iWEM2014 features "Student Innovation Competition" to award student authors with excellent paper submission and presentation. Finalists are selected based on the evaluation of the submitted papers. The final winners of the competition are selected from the finalists by Award Selection Board.

Qualifications: To be qualified for a paper to be considered as a student paper for Student Innovation Competition, the following conditions must be, in accordance to the international conference tradition, satisfied.

1. *The student must be registered at his/her university;*
2. *The student must be the principal author of the paper;*
3. *The student must pre-register for the conference;*
4. *The student must present his/her paper in person in the workshop.*

The winners of Student Innovation Competition are worked out based on the following procedures:

1. *All the student papers are peer-reviewed by senior professionals working in the related fields, and the technical reviewers will judge the paper based on the paper's technical contribution, the innovation highlighted, and the technical presentation.*
2. *In accordance with the nominations by reviewers and also the scores obtained in the review process, the shortlisted candidates were selected to form the finalists.*
3. *The finalist papers will be presented in Poster Session I, where the members of Award Selection Board will be attending to score the presentation.*
4. *The winners of Student Innovation Competition are presented in the workshop banquet. All the finalists are requested to attend the banquet.*

Finalist list

Park, Joongki (*Hanyang University, Korea*)

Wang, Tse-Hsuan (*National Taipei University of Technology, Taiwan*)

Nonaka, Fumihiko (*Saitama University, Japan*)

Kamohara, Kenichiro (*Doshisha University, Japan*)

Ge, Lei (*City University of Hong Kong, Hong Kong*)

Wang, Shen (*Yokohama National University, Japan*)

Yamauchi, Ryoji (*Kumamoto University, Japan*)

Nguyen, Tuan Hung (*National Defense Academy, Japan*)

Zhan, Yang (*Nantong University, P.R. China*)

Kaga, Kazuki (*University of Toyama, Japan*)

Wakamatsu, Yosuke (*Niigata University, Japan*)

Wang, Yongqiang (*University of Electronic Science and Technology of China, P.R. China*)

Higashi, Daichi (*Doshisha University, Japan*)

Kawata, Akihiro (*Doshisha University, Japan*)

Lertsakwimarn, Kittima (*King Mongkut's Institute of Technology Ladkrabang, Thailand*)

Technical Program

Opening Ceremony

Monday, 4, Aug., 9:50-10:20, Conference Room

Keynote Speech

Monday, 4, Aug., 10:20-11:00, Conference Room

Chair: Hiroyoshi Yamada (*Niigata University, Japan*)

Signal Processing Antenna Techniques for Wireless Communications

Yasutaka Ogawa, (*Hokkaido University, Japan*)

MA1 Design Techniques and Theory for Printed Antennas

Organized by Dau-Chyrh Chang (*Oriental Institute of Technology, Taiwan*)

Monday, 4, Aug., 11:20-12:10, Conference Room

Chair: Ruey-Bing Hwang (*National Chiao Tung University, Taiwan*)

MA1.1 11:20 *Reconfigurable Antennas for Digital Data Communication Systems*

Dau-Chyrh Chang (*Oriental Institute of Technology, Taiwan*)
(*Invited*)

MA1.2 11:50 *Observing the Surface Waves in a Grounded Dielectric Slab*

Ruey-Bing Hwang (*National Chiao Tung University, Taiwan*); Wen-Lii Chen (*National Chiao Tung University, Taiwan*)

POS1 Poster Session I

* denotes the student paper innovation contest finalists

Monday, 4, Aug., 12:10-13:40, Lobby

Chair: Jiro Hirokawa (*Tokyo Tech, Japan*)

POS1.1 *A Low-Profile Dipole Array Antenna for On-Body Communications**

Joongki Park (*Hanyang University, Korea*); Jinpil Tak (*Hanyang University, Korea*); Jaehoon Choi (*Hanyang University, Korea*)

POS1.2 *Reflectarray Elements with Low Cross Polarization for Dual-Polarization and Wideband Use**

Daichi Higashi (*Doshisha University, Japan*); Hiroyuki Deguchi (*Doshisha University, Japan*); Mikio Tsuji (*Doshisha University, Japan*)

POS1.3 *Circularly Polarized Broadband Waveguide Antenna Using L-shaped Probe**

Ryoji Yamauchi (*Kumamoto University, Japan*); Takeshi Fukusako (*Kumamoto University, Japan*)

POS1.4 *Design of a Microstrip Antenna Array Fed by Transverse Slots on a Broad Wall of the Rectangular Waveguide with Standing-Wave Excitation for Linear Polarization Parallel to the Axis**

Fumihiko Nonaka (*Saitama University, Japan*); Sakuyoshi Saito (*Saitama University, Japan*); Yuichi Kimura (*Saitama University, Japan*)

- POS1.5 *Effective Analysis Approach for Front- And Back-Fire Horns with Coaxial Grooves****
 Akihiro Kawata (*University of Doshisha, Japan*); Mikio Tsuji (*Doshisha University, Japan*); Hiroyuki Deguchi (*Doshisha University, Japan*)
- POS1.6 *A Horizontally Polarized, Low-Profile and Compact Antenna for Radiating Parallel to Ground Plane****
 Kittima Lertsakwimarn (*King Mongkut's Institute of Technology Ladkrabang (KMITL), Thailand*); Chuwong Phongcharoenpanich (*King Mongkut's Institute of Technology Ladkrabang, Thailand*); Takeshi Fukusako (*Kumamoto University, Japan*)
- POS1.7 *Unidirectional Antenna for Cognitive Radio Applications****
 Lei Ge (*City University of Hong Kong, Hong Kong*); Kwai-Man Luk (*City University of Hong Kong, Hong Kong*)
- POS1.8 *Characteristic Modes Analysis of a 4G Cellular Antenna for Eyewear Wireless Devices****
 Shen Wang (*Yokohama National University, Japan*); Hiroyuki Arai (*Yokohama National University, Japan*); Aykut Cihangir (*University of Nice Sophia Antipolis, France*); Cyril Luxey (*University Nice Sophia-Antipolis, France*)
- POS1.9 *A Simple Multi-band Linear Inverted-F Antenna****
 Tuan Hung Nguyen (*National Defense Academy, Japan*); Hisashi Morishita (*National Defense Academy, Japan*); Hiroshi Sato (*Panasonic System Networks, Japan*); Yoshio Koyanagi (*Panasonic Mobile Communications, Japan*)
- POS1.10 *Using Modified Nodal Analysis to Cavity-mode Resonances for PCB Power-bus Structures with Discrete Capacitors****
 Tse-Hsuan Wang (*National Taipei University of Technology, Taiwan*); Ding-Bing Lin (*National Taipei University of Technology, Taiwan*)
- POS1.11 *Miniaturized LTCC Bandpass Filter Using Transmission Line Dual-mode Resonator****
 Yang Zhan (*Nantong University, P.R. China*); Jianxin Chen (*Nantong University, P.R. China*); Hui Tang (*Nantong University, P.R. China*)
- POS1.12 *A Sequential Automatic Impedance-Matching Algorithm to Achieve Simultaneous Complex-Conjugate Condition in Multi-element Antennas****
 Kazuki Kaga (*University of Toyama, Japan*); Kun Li (*University of Toyama, Japan*); Kazuhiro Honda (*University of Toyama, Japan*); Koichi Ogawa (*University of Toyama & Faculty of Engineering, Japan*)
- POS1.13 *Design of Broad Band SIW Couplers with 45° and 90° Phase Difference****
 Yongqiang Wang (*University of Electronic Science and Technology of China, P.R. China*); Kaixue Ma (*University of Electronic Science and Technology of China, P.R. China*); Ningning Yan (*University of Electronic Science and Technology of China, P.R. China*); Lianyue Li (*University of Electronic Science and Technology of China, P.R. China*)
- POS1.14 *Evaluation of MIMO Capacity Improvement by Active Propagation Control****
 Kenichiro Kamohara (*Doshisha University, Japan*); Hisato Iwai (*Doshisha University, Japan*); Hideichi Sasaoka (*Doshisha University, Japan*)
- POS1.15 *MIMO Doppler Radar Using Khatri-Rao Product Virtual Array for Human Location Estimation****
 Yosuke Wakamatsu (*Niigata University, Japan*); Hiroyoshi Yamada (*Niigata University, Japan*); Yoshio Yamaguchi (*Niigata University, Japan*)
- POS1.16 *Estimation of Soil Moisture Content and Surface Roughness Using Oh Model and Scattering Power Decomposition***
 Hiroto Abe (*Niigata University, Japan*); Yoshio Yamaguchi (*Niigata University, Japan*); Hiroyoshi Yamada (*Niigata University, Japan*); Yi Cui (*Niigata University, Japan*)
- POS1.17 *A New Propagation Model for Collision Detection Using MIMO Transmission in Wireless LAN Systems***
 Masaaki Kawahara (*Niigata University, Japan*); Kentaro Nishimori (*Niigata University, Japan*); Takefumi Hiraguri (*Nippon Institute of Technology, Japan*); Hideo Makino (*Niigata University, Japan*)

- POS1.18 Velocity and Direction Estimation by Ocean Surface Current Radar Using Khatri-Rao Product Transform**
Takuya Ryukawa (Niigata University, Japan); Hiroyoshi Yamada (Niigata University, Japan); Yoshio Yamaguchi (Niigata University, Japan); Keizo Hirano (Nagano Japan Radio Co., Ltd., Japan); Hiroyuki Ito (Nagano Japan Radio Co., Ltd., Japan)
- POS1.19 Study on Propagation Characteristics in SHF (Over 6 GHz) Bands**
Ngochao Tran (NTT DOCOMO, INC., Japan); Tetsuro Imai (NTT DOCOMO, Inc., Japan); Yukihiko Okumura (NTT DOCOMO, Japan)
- POS1.20 Performance Evaluation of 4x2MIMO Channel for Indoor Environment with Propagation Path Shadowing by Moving People**
Sei Mugiuda (Kwansei Gakuin University, Japan); Tokio Taga (Kwansei Gakuin University, Japan)
- POS1.21 A Path Shadowing Number Model for ITS Pedestrian-to-Vehicle Communication in Urban Streets**
Daiki Nishii (Kwansei Gakuin University, Japan); Tokio Taga (Kwansei Gakuin University, Japan)
- POS1.22 A Study on Detecting Man-made Objects Using Correlation Coefficients in Circular Polarization Basis**
Motoki Masaka (Niigata University, Japan); Ryoichi Sato (Niigata University, Japan); Yoshio Yamaguchi (Niigata University, Japan); Hiroyoshi Yamada (Niigata University, Japan)
- POS1.23 Near Field Position Estimation Using Multiple Antennas and Frequencies**
Takurou Mamiya (University of Fukui, Japan); Mitoshi Fujimoto (University of Fukui, Japan); Toshikazu Hori (University of Fukui, Japan); Takanobu Tabata (Kojima Press Industry co. Ltd., Japan); Satoshi Hori (Kojima Press Industry Co. Ltd., Japan)
- POS1.24 Design of a Dual-polarization Circular Aperture Array Antenna on Hollow Cavities**
Satoshi Ito (Tokyo Institute of Technology, Japan); Satoshi Suetsugu (Tokyo Institute of Technology, Japan); Jiro Hirokawa (Tokyo Institute of Technology, Japan); Makoto Ando (Tokyo Institute of Technology, Japan)
- POS1.25 Design of a Metal Cap with Two Slots Covering the End of a Module Substrate for 60-GHz WPAN**
Kohei Ito (Tokyo Institute of Technology, Japan); Jiro Hirokawa (Tokyo Institute of Technology, Japan); Kimio Sakurai (Tokyo Institute of Technology, Japan); Makoto Ando (Tokyo Institute of Technology, Japan)
- POS1.26 A Built-In Hepta-Band Monopole Antenna with a Slit-Taper-Shaped Ground Plane for Wireless Mobile Terminals**
Takashi Uemura (Ritsumeikan University, Japan); Noriaki Hashimoto (Ritsumeikan University, Japan); Tadahiko Maeda (Ritsumeikan University, Japan)
- POS1.27 Electrically Small and Low-profile Antenna Using Non-Foster Element(NFE)**
Kazuma Tomimoto (Kumamoto University, Japan); Takeshi Fukusako (Kumamoto University, Japan)
- POS1.28 Influence of Loop Parasitic Elements on Bandwidth Improvement of Reflector Backed Dipole Antenna**
Takayoshi Sasaki (Chiba Institute of Technology, Japan); Keizo Cho (Chiba Institute of Technology, Japan)
- POS1.29 Broadband Microstrip-Line-Fed Circularly-Polarized Circular Slot Antenna**
Jen-Yea Jan (National Kaohsiung University of Applied Sciences, Taiwan); Guo-Jhih Wu (National Kaohsiung University of Applied Sciences, Taiwan); Chien-Yuan Pan (National Kaohsiung University of Applied Sciences, Taiwan); Hua-Ming Chen (National Kaohsiung University of Applied Sciences, Taiwan)
- POS1.30 A Modified CPW-Fed Slot Dipole Antenna with Wideband Harmonic Suppression**
Yen-Ju Lu (National Taiwan University, Taiwan); Powen Hsu (National Taiwan University, Taiwan)
- POS1.31 Radiation Pattern Control of Beam Adjustable Microstrip Antenna Arrays with Narrow-Width Rectangular Patch Elements**
Ryo Okabe (Saitama University, Japan); Sakuyoshi Saito (Saitama University, Japan); Yuichi Kimura (Saitama University, Japan)

- POS1.32 Wideband Circularly-Polarized Conical Beam Wheel-Shaped Antenna with Reflector for Axial Ratio Bandwidth and Pattern Improvement**
Wei Lin (City University of Hong Kong, Hong Kong); Hang Wong (City University of Hong Kong, Hong Kong)
- POS1.33 Dielectric Lens-Corrected Horn with a Coaxial Groove for Wide-Angle Radiation**
Ikumi Oobayashi (Doshisha University, Japan); Hiroyuki Deguchi (Doshisha University, Japan); Mikio Tsuji (Doshisha University, Japan)
- POS1.34 Patch Antenna Array for IEEE 802.11b/g/n MIMO Application**
Dau-Chyrh Chang (Oriental Institute of Technology, Taiwan); Ming-Ching Yen (Oriental Institute of Technology, Taiwan); Chih-Hung Lee (ETC, Taiwan); Yau-Jyun Tsai (OIT, Taiwan); Chang-Hsuan Kao (OIT, Taiwan)
- POS1.35 Optimal Design of A Planar Antenna Using Binary Particle Swarm Optimization**
Wei-Chung Weng (National Chi Nan University, Taiwan); Wen-Hsuan Ho (National Chi Nan University, Taiwan); Min-Chi Chang (National Chi Nan University, Taiwan)
- POS1.36 One-port Measurement for Coupling Between Balanced and Unbalanced Modes on Dipole Antennas Using a Quadrature Hybrid**
Kanako Kinoshita (Niigata University, Japan); Nozomu Ishii (Niigata University, Japan)
- POS1.37 Constant Near-Field Gain for a Shielded Loop Antenna Operated in the Liquid At 30 MHz**
Ryosuke Takezawa (Niigata University, Japan); Satsuki Tsuruma (Niigata University, Japan); Nozomu Ishii (Niigata University/National Institute of Information and Communications Technology, Japan); Lira Hamada (National Institute of Information and Communications Technology, Japan); Soichi Watanabe (National Institute of Information and Communications Technology, Japan)
- POS1.38 An Adjustable Unequal Power Divider Design**
Chih-Kai Yang (National Chin Yi University of Technology, Taiwan); Yu-Hui Shih (National Chin Yi University of Technology, Taiwan); Kuang-Hao Lin (National Formosa University, Taiwan); Jan-Dong Tseng (National Chin Yi University of Technology, Taiwan)
- POS1.39 An Investigation on Transparent Flexible Circuit Design**
Ssu-Jung Wu (National Chin Yi University of Technology, Taiwan); Jan-Dong Tseng (National Chin Yi University of Technology, Taiwan)
- POS1.40 An Optimized Design Method of Composite Right/Left Handed Transmission Lines Considering Higher-order Mode Interaction by Genetic Algorithm**
Yoshie Mukainoge (Doshisha University, Japan); Hiroyuki Deguchi (Doshisha University, Japan); Mikio Tsuji (Doshisha University, Japan)
- POS1.41 A Wideband 16-Element Antenna Array Using Leaf-Shaped Bowtie Antenna and Series-Parallel Feed Networks**
Takehito Munekata (Hokkaido University, Japan); Manabu Yamamoto (Hokkaido University, Japan); Toshio Nojima (Hokkaido University, Japan)
- POS1.42 Coupled-fed Meandered Loop Antenna for USB Dongle Applications**
Wen-Shan Chen (Southern Taiwan University of Science and Technology, Taiwan); Jia-Hong You (Southern Taiwan University of Science and Technology, Taiwan); Chien-Ming Wu (Southern Taiwan University of Science and Technology, Taiwan); Hong-Twu Chen (ROC Military Academy, Taiwan); Yung-Tao Liu (ROC Military Academy, Taiwan)
- POS1.43 Decoupling Method Using Branch Shape Without Connecting Between MIMO Multiple Antennas**
Keisuke Okuda (Chiba University, Japan); Hiroshi Sato (Panasonic System Networks, Japan); Masaharu Takahashi (Chiba University, Japan)
- POS1.44 Channel Capacity of Distributed MIMO Antennas for Mobile Terminals At 3.5GHz**
Sota Kojima (Chiba University, Japan); Masaharu Takahashi (Chiba University, Japan); Yoshiaki Amano (KDDI R&D Laboratories Inc., Japan); Masayuki Nakano (KDDI R&D Labs, Japan); Akira Yamaguchi (KDDI R&D Laboratories Inc., Japan)

POS1.45 Experimental Evaluation of CSI Estimation Method Using Narrowband Signals for MIMO Sensor
 Tsubasa Tashiro (*Niigata University, Japan*); Kentaro Nishimori (*Niigata University, Japan*); Tsutomu Mitsui (*SAMSUNG R&D INSTITUTE JAPAN CO. LTD., Japan*); Nobuyasu Takemura (*SAMSUNG R&D INSTITUTE JAPAN CO. LTD., Japan*)

POS1.46 Localizing Multiple Target Using Bistatic MIMO Radar in Multi-path Environment
 Keita Konno (*Iwate University, Japan*); Naoki Honma (*Iwate University, Japan*); Dai Sasakawa (*Iwate University, Japan*); Yoshitaka Tsunekawa (*Iwate University, Japan*); Kentaro Nishimori (*Niigata University, Japan*); Nobuyasu Takemura (*SAMSUNG R&D INSTITUTE JAPAN CO. LTD., Japan*); Tsutomu Mitsui (*SAMSUNG R&D INSTITUTE JAPAN CO. LTD., Japan*)

POS1.47 Block Diagonalization Using FFT Beams At User Terminal for Implicit Beamforming
 Hayate Kimoto (*Niigata University, Japan*); Kentaro Nishimori (*Niigata University, Japan*); Takefumi Hiraguri (*Nippon Institute of Technology, Japan*); Hideo Makino (*Niigata University, Japan*)

POS1.48 Spatial Multiplexing for Multiple Users Exceeding Degree of Freedom by Successive Interference Cancellation and Zero Forcing
 Keita Nakagawa (*Niigata University, Japan*); Kentaro Nishimori (*Niigata University, Japan*); Satoshi Sasaki (*Niigata University, Japan*); Hideo Makino (*Niigata University, Japan*)

MP1	Advanced Wireless Propagation and Systems
Organized by Qiang Chen (<i>Tohoku University, Japan</i>)	
Monday, 4, Aug., 13:40-15:00, Conference Room	
Co-Chairs:	Qiang Chen (<i>Tohoku University, Japan</i>), Kunio Sakakibara (<i>Nagoya Institute of Technology, Japan</i>)

MP1.1 13:40 Novel Sharp-Rejection and Dual-Band Bandstop Filters
 Qing-Xin Chu (*South China University of Technology, P.R. China*)

MP1.2 14:00 Experiments on High-Speed FMCW Signal Generation for Optically-Connected Airport Surface Foreign Object Debris Detection 96 GHz Millimeter-Wave Radar Systems
 Shunichi Futatsumori (*Electronic Navigation Research Institute, Japan*); Kazuyuki Morioka (*Electronic Navigation Research Institute, Japan*); Akiko Kohmura (*Electronic Navigation Research Institute, Japan*); Kunio Okada (*Electronic Navigation Research Institute, Japan*); Naruto Yonemoto (*Electronic Navigation Research Institute, Japan*)

MP1.3 14:20 Wideband Terahertz Frequency-Scanning Reflectarray
 Shi-Wei Qu (*University of Electronic Science and Technology of China, P.R. China*); Wei-Wei Wu (*Univ of Electronic Sci & Technol of China, P.R. China*); Kung Bo Ng (*City University of Hong Kong, Hong Kong*); Baojie Chen (*City University of HongKong, Hong Kong*); Chi Hou Chan (*City University of Hong Kong, Hong Kong*)

MP1.4 14:40 Experimental Study of Improving Wireless Propagation Channel by Using Reflectarray
 Qiang Chen (*Tohoku University, Japan*)

MP2	Advanced Wireless Propagation and Systems
Monday, 4, Aug., 15:15-16:35, Conference Room	
Co-Chairs:	Kentaro Nishimori (<i>Niigata University, Japan</i>), Ngochao Tran (<i>NTT DOCOMO, INC., Japan</i>)

MP2.1 15:15 Determination of Electrical Properties of Early-Age Concrete Using Near-Field Microwave Techniques
 Kwok Chung (*University of Western Sydney, Australia*); Sergey Kharkovsky (*University of Western Sydney & UWS, Australia*)

MP2.2 15:35 Spectrum Sensing Model and Throughput Analysis in a Distributed Cognitive Radio Network
 Ming-Fong Hsu (*National Sun Yat-sen University, Taiwan*); Tsang-Yi Wang (*National Sun Yat-sen University, Taiwan*); Chao-Tang Yu (*Southern Taiwan University of Science and Technology, Taiwan*)

MP2.3 15:55 Intelligent Fingerprint-assisted for Indoor Positioning System

Yiwei Ma (*National Taiwan University of Science and Technology, Taiwan*); Jiann-Liang Chen (*National Taiwan University of Science and Technology, Taiwan*)

MP2.4 16:15 Experimental Study on Spatio-Temporal Channel in Indoor Environments

Koshiro Kitao (*NTT DOCOMO, INC., Japan*); Tetsuro Imai (*NTT DOCOMO, Inc., Japan*); Kentaro Saito (*NTT DOCOMO, INC., Japan*)

MP3	New Antenna Techniques
Organized by Joshua Le-Wei Li (<i>University of Electronic Science & Technology of China, P.R. China</i>)	
Monday, 4, Aug., 16:50-18:00, Conference Room	
Chair:	Joshua Le-Wei Li (<i>University of Electronic Science & Technology of China, P.R. China</i>)

MP3.1 16:50 Metamaterial Circular Spiral Antennas

Joshua Le-Wei Li (*University of Electronic Science & Technology of China, P.R. China*)
(Invited)

MP3.2 17:20 An Impedance Matching Technique for Bandwidth Enhancement of Terminal Antennas

Cherng-Chyi Hsiao (*National Chiao-Tung University, Taiwan*); Huang Hsien-Tung (*National Chiao-Tung University, Taiwan*); Ruey-Bing Hwang (*National Chiao Tung University, Taiwan*)

MP3.3 17:40 Investigation Into Further Reduction of Mutual Coupling Between Wang-Shaped Patch Antennas

Kwok Chung (*University of Western Sydney, Australia*)

TA1	Antenna Systems
Organized by Mitoshi Fujimoto (<i>University of Fukui, Japan</i>)	
Tuesday, 5, Aug., 09:10-10:30, Conference Room	
Co-Chairs:	Mitoshi Fujimoto (<i>University of Fukui, Japan</i>), Naoki Honma (<i>Iwate University, Japan</i>)

TA1.1 09:10 Effectiveness of Implicit Beamforming Using Calibration Technique in Massive MIMO System

Kentaro Nishimori (*Niigata University, Japan*); Takefumi Hiraguri (*Nippon Institute of Technology, Japan*); Toshiyuki Ogawa (*Nippon Institute of Technology, Japan*); Hiroyoshi Yamada (*Niigata University, Japan*)

TA1.2 09:30 Experimental Performance Evaluation of Passive MIMO Transmission

Naoki Honma (*Iwate University, Japan*); Keisuke Terasaki (*Iwate University, Japan*); Ryota Takahashi (*Iwate University, Japan*); Yoshitaka Tsunekawa (*Iwate University, Japan*)

TA1.3 09:50 DOA Estimation by Applying Compressed Sensing Techniques

Toshihiko Nishimura (*Hokkaido University, Japan*); Yasutaka Ogawa (*Hokkaido University, Japan*); Takeo Ohgane (*Hokkaido University, Japan*)

TA1.4 10:10 Primary Receiver Detection Using Load Modulation in Cognitive Radio

Mitoshi Fujimoto (*University of Fukui, Japan*); Yukiko Nakanaga (*University of Fukui, Japan*); Toshikazu Hori (*University of Fukui, Japan*)

TA2	Novel Microwave Circuits and Subsystems
Organized by Wenquan Che (Nanjing University of Science and Technology, P.R. China)	
Tuesday, 5, Aug., 10:50-12:10, Conference Room	
Co-Chairs:	Wenquan Che (Nanjing University of Science and Technology, P.R. China), Kaixue Ma (University of Electronic Science and Technology of China, P.R. China)

TA2.1 10:50 Miniaturized Rat Race Coupler with Harmonic Suppression

Wei Nie (University of Electronic Science and Technology of China, Singapore); Yong-Xin Guo (National University of Singapore, Singapore); Sha Luo (National University of Singapore, Singapore); Yong Fan (University of Electronic Science and Technology of China, P.R. China)

TA2.2 11:10 Millimeter-Wave Beam Forming on Silicon

Kaixue Ma (University of Electronic Science and Technology of China, P.R. China)

TA2.3 11:30 Wide-Stopband LTCC Filter Using Discriminating Coupling

Xiu Yin Zhang (School of Electronic and Information Engineering, South China University of Technology, P.R. China); Xin Dai (School of Electronic and Information Engineering, P.R. China); Qing-Yi Guo (School of Electronic and Information Engineering, P.R. China)

TA2.4 11:50 Study on the Frequency Tunable Ability of the Varactor-Loaded Resonator

Ming-Zhu Du (Nantong University, P.R. China); Jian-Xin Chen (Nantong University, P.R. China); Jin Shi (Nantong University, P.R. China); Li-Heng Zhou (Nantong University, P.R. China)

POS2	Poster Session II
Tuesday, 5, Aug., 12:10-13:40, Lobby	
Chair:	Takeshi Fukusako (Kumamoto University, Japan)

POS2.1 Performance Verification of Polarimetric Change Detector Based on Four-Component-Decomposition with PiSAR-2 Data

Kazutomo Yamamoto (Niigata University, Japan); Yoshio Yamaguchi (Niigata University, Japan); Hiroyoshi Yamada (Niigata University, Japan); Gulab Singh (Niigata University, India)

POS2.2 Fading Characteristics in the 26GHz Band Indoor Quasi-static Environment

Kentaro Saito (NTT DOCOMO, INC., Japan); Tetsuro Imai (NTT DOCOMO, Inc., Japan); Yukihiko Okumura (NTT DOCOMO, INC., Japan)

POS2.3 A Regression Formula of Propagation Loss in Obliquely-Crossed Road for Inter-Vehicles Communications

Takahiro Kanda (Kwansei Gakuin University, Japan); Tokio Taga (Kwansei Gakuin University, Japan)

POS2.4 Improvement of Multiple Loop Antenna for Near-Field UHF RFID Applications

Rassamitit Pansomboon (King Mongkut's Institute of Technology Ladkrabang, Thailand); Chuwong Phongcharoenpanich (King Mongkut's Institute of Technology Ladkrabang, Thailand); Supakit Kawdungta (Rajamangala University of Technology Lanna Chiang Mai, Thailand)

POS2.5 A Simple Circularly Polarized Loop Tag Antenna for Increased Reading Distance

Yi-Xiu Chen (National Kaohsiung Normal University, Taiwan); Horng-Dean Chen (National Kaohsiung Normal University, Taiwan); Ching-Han Tsai (National Kaohsiung Normal University, Taiwan); Hua-Ming Chen (National Kaohsiung University of Applied Sciences, Taiwan)

POS2.6 Dual Band-rejected Ultra-wideband Monopole Antenna with an H-shaped Slot

Chun-Cheng Lin (National Cheng Kung University, Taiwan); Chih-Yu Huang (National Kaohsiung Normal University, Taiwan); Bo-Shen Chang (National Kaohsiung Normal University, Taiwan); Yu-Ming Yan (National Kaohsiung Normal University, Taiwan)

POS2.7 A Small Antenna with Ultra-Wideband Characteristics

Akira Kon (Yokohama National University, Japan); Hiroyuki Arai (Yokohama National University, Japan)

POS2.8 Planar Dipole Antenna with Ultra-Wide Bandwidth

Lin Shun-Yun (*Cheng Shiu University, Taiwan*); Yu-Chih Lin (*Metal Industries Research & Development Center, Taiwan*); Ya-Ting Pan (*Cheng Shiu University, Taiwan*)

POS2.9 Planar F-shaped Monopole Antenna with Dual-Band Circular Polarization for WLAN Systems

Jui-Han Lu (*National Kaohsiung Marine University, Taiwan*); Chong-Wei Liou (*National Kaohsiung Marine University, Taiwan*)

POS2.10 A Compact Monopole Antenna for WLAN Applications

Wen-Shan Chen (*Southern Taiwan University of Science and Technology, Taiwan*); Chao-Tang Yu (*Southern Taiwan University of Science and Technology, Taiwan*); Chien-Ming Cheng (*Southern Taiwan University of Science and Technology, Taiwan*); Sin-Yan Ke (*Southern Taiwan University of Science and Technology, Taiwan*); Chun-Lin Ciou (*Southern Taiwan University of Science and Technology, Taiwan*); Hong-Twu Chen (*ROC Military Academy, Taiwan*); Yung-Tao Liu (*ROC Military Academy, Taiwan*)

POS2.11 Current Reduction on the Ground Plane Using Additional Element for WiMAX/WLAN Folded Monopole Antenna

Tsutomu Ito (*National Defense Academy, Japan*); Takashi Oki (*National Defense Academy, Japan*); Hisashi Morishita (*National Defense Academy, Japan*)

POS2.12 Design of Wideband Antennas with Coupling Feed Structures for Wireless Applications

Ding-Liang Wen (*South China University of Technology, P.R. China*); Qing-Xin Chu (*South China University of Technology, P.R. China*)

POS2.13 Modified Short Backfire Antenna for Antennas-on-Package Applications

Jyun-Yuan Cheng (*National Taiwan University, Taiwan*); Chien-Pai Lai (*National Taiwan University, Taiwan*); Wan-Ting Hung (*Graduate Institute of Communication Engineering & National Taiwan University, Taiwan*); Shih-Yuan Chen (*National Taiwan University, Taiwan*)

POS2.14 High-Gain DR Circular Patch On-Chip Antenna Based on Standard CMOS Technology for Millimeter-Wave Applications

Yu-Bo Wang (*University of Electronic Science and Technology of China, P.R. China*); Jia-Qi Liu (*University of Electronic Science and Technology of China, P.R. China*); Joshua Le-Wei Li (*University of Electronic Science & Technology of China, P.R. China*); Albert Chin (*National Chiao Tung University, Taiwan*)

POS2.15 Sidelobe Reduction of Microstrip Comb-Line Antennas for Beam-Tilting Design in Perpendicular Plane to Feeding Line

Daiki Nakazawa (*Nagoya Institute of Technology, Japan*); Kunio Sakakibara (*Nagoya Institute of Technology, Japan*); Nobuyoshi Kikuma (*Nagoya Institute of Technology, Japan*); Hiroshi Hirayama (*Nagoya Institute of Technology, Japan*)

POS2.16 A Miniaturized High-Isolation Diversity Antenna Design

Cheng-Nan Hu (*Oriental Institute of Technology, Taiwan*)

POS2.17 Bandwidth Improvement of MSA with Co-Located Parasitic Elements

Munenori Ikabata (*Chiba Institute of Technology, Japan*); Keizo Cho (*Chiba Institute of Technology, Japan*)

POS2.18 Three Layers Switched Multibeam Antenna with Dual-Polarization

Rohani Bakar (*Yokohama National University, Japan*); Hiroyuki Arai (*Yokohama National University, Japan*)

POS2.19 Coaxial-line Connection of a Circularly-polarized Patch Array Antenna on the Thick Resin and a 60 GHz-band Quadrature Oscillator Chip

Naoya Oikawa (*Tokyo Institute of Technology, Japan*); Jiro Hirokawa (*Tokyo Institute of Technology, Japan*); Hiroshi Nakano (*Tokyo Institute of Technology, Japan*); Yasutake Hirachi (*AMMSYS Inc., Japan*); Kenichi Okada (*Tokyo Institute of Technology, Japan*); Makoto Ando (*Tokyo Institute of Technology, Japan*)

- POS2.20 Design of a Dual-polarization Corporate-feed Waveguide 32x32-slot Array Antenna for 120 GHz Band**
Keisuke Hashimoto (Tokyo Institute of Technology, Japan); Jun Takeuchi (NTT Corporation, Japan); Jiro Hirokawa (Tokyo Institute of Technology, Japan); Akihiko Hirata (NTT Corporation & NTT Micorsystem Integration Laboratories, Japan); Makoto Ando (Tokyo Institute of Technology, Japan)
- POS2.21 A New Circularly Polarized Monopole Antenna for 60 GHz Communications**
Dia'aaldin Bisharat (City University of Hong Kong, Hong Kong); Shaowei Liao (City University of Hong Kong, Hong Kong); Quan Xue (City University of Hong Kong, Hong Kong)
- POS2.22 Differential-Fed Higher-Order Mode Patch Antenna At 60GHz Band**
Dian Wang (City University of Hong Kong, Hong Kong); Kung Bo Ng (City University of Hong Kong, Hong Kong); Hang Wong (City University of Hong Kong, Hong Kong); Chi Hou Chan (City University of Hong Kong, Hong Kong)
- POS2.23 Attenuation Characteristic of Tri-plate Transmission Line for Millimeter-waves**
Takuya Okura (Yokohama National University, Japan); Hiroyuki Arai (Yokohama National University, Japan)
- POS2.24 Integrated Retrodirective/Beam-switching Phased Array Using Dual-mode Left-handed Synthesized Transmission Lines**
Cheng-Hsun Wu (National Taiwan University of Science and Technology, Taiwan); Guan-Ting Zhou (National Taiwan University of Science and Technology, Taiwan); Tzyh-Ghuang Ma (National Taiwan University of Science and Technology, Taiwan)
- POS2.25 FDTD Analysis of MHz Band Using Autoregressive Moving Average Model**
Kuwabara Kenta (Tokyo University of Agriculture and Technology, Japan); Toru Uno (Tokyo University of Agricultural Technology, Japan); Takuji Arima (Tokyo University of Agriculture and Technology, Japan)
- POS2.26 Study on Calibration of the Array Antenna Using a Web Camera**
Yu Ishiyama (Niigata University, Japan); Hiroyoshi Yamada (Niigata University, Japan); Yi Cui (Niigata University, Japan); Yoshio Yamaguchi (Niigata University, Japan)
- POS2.27 Array Antenna Calibration Method for Living Body Radar**
Dai Sasakawa (Iwate University, Japan); Keita Konno (Iwate University, Japan); Naoki Honma (Iwate University, Japan); Yoshitaka Tsunekawa (Iwate University, Japan); Kentaro Nishimori (Niigata University, Japan); Nobuyasu Takemura (SAMSUNG R&D INSTITUTE JAPAN CO. LTD., Japan); Tsutomu Mitsui (SAMSUNG R&D INSTITUTE JAPAN CO. LTD., Japan)
- POS2.28 A Low-Pass Filter by Using A Meandered Slot**
Yu-Wei Cheng (National University of Tainan, Taiwan); Jhong-Wei Wu (National University of Tainan, Taiwan); Tz-Hsiung Lin (Pegatron corp., Taiwan); Chien-Jen Wang (National University of Tainan, Taiwan)
- POS2.29 Tri-band Wilkinson Power Divider for TD-LTE/3G/GPS Systems**
Bing-Shu Wu (National Chin-Yi University of Technology, Taiwan); Jan-Dong Tseng (National Chin Yi University of Technology, Taiwan); Kuang-Hao Lin (National Formosa University, Taiwan); Yu-Chien Lin (Chung Hua University, Taiwan)
- POS2.30 Automatic Composition Design Software for Human Body-Equivalent Phantoms**
Fumiaki Komori (Ritsumeikan University, Japan); Shintaro Kiyoda (Ritsumeikan University, Japan); Tadahiko Maeda (Ritsumeikan University, Japan)
- POS2.31 Design of Dual-Band Bandpass Filter Using Stub-Loaded Resonator with Source-Load Coupling and Spur-line At 2.45/5.5 GHz for WLAN Applications**
Yu-Hung Lo (National Sun Yat-sen University, Taiwan)
- POS2.32 Microstrip Branch-Line Coupler with Optimized Spurious Suppression Based on Cascaded PI-Type Equivalent Transmission Lines**
Shih-Cheng Lin (National Chiayi University, Taiwan); Chong-You Yeh (National Chiayi University, Taiwan)

- POS2.33 Radiation Efficiency Measurement Based on Wheeler Method Using Hybrid Coupler and Phase Shifter**
Kouhei Watanabe (Niigata University, Japan); Nozomu Ishii (Niigata University, Japan)
- POS2.34 Power Amplifier with High Transformation Ratio Power Combiner in GaAs Technology**
Wai Lun Lam (City University of Hong Kong, Hong Kong); Chi Hou Chan (City University of Hong Kong, Hong Kong)
- POS2.35 Estimation of Received Signal At an Arbitrary Remote Location Using MUSIC Method**
Makoto Tanaka (Doshisha University, Japan); Hisato Iwai (Doshisha University, Japan); Hideichi Sasaoka (Doshisha University, Japan)
- POS2.36 Influence of Size of Jig Made of Microstrip Line**
Taiga Yanagibashi (Akita Prefectural University, Japan); Takayuki Sasamori (Akita Prefectural University, Japan); Teruo Tobana (Akita Prefectural University, Japan); Yoji Isota (Akita Prefectural University, Japan)
- POS2.37 Human Motion Estimation Using Range-Doppler Response**
Shinya Fukushima (Niigata University, Japan); Hiroyoshi Yamada (Niigata University, Japan); Hirokazu Kobayashi (Osaka Institute of Technology, Japan); Yoshio Yamaguchi (Niigata University, Japan)
- POS2.38 A Compact Tunable Bandpass Filter Using Transformed Radial Stubs**
Zhen Xu (University of Electronic Science and Technology of China, P.R. China); Kaixue Ma (University of Electronic Science and Technology of China, P.R. China); Jun Xu (University of Electronic Science and Technology of China, P.R. China)
- POS2.39 Local SAR in Anatomical Phantom Implanted with Metallic Osteosynthesis Plates in Mandibular Exposed to 2 GHz RF Fields**
Taisuke Ono (Hokkaido University, Japan); Takashi Hikage (Hokkaido University, Japan); Toshio Nojima (Hokkaido University, Japan); Tomoaki Nagaoka (National Institute of Information and Communications Technology, Japan); Soichi Watanabe (National Institute of Information and Communications Technology, Japan)
- POS2.40 A Parallelization Method of Genetic Algorithms for Optimal Design of Microwave Filter**
Hajime Otani (Hokkaido University, Japan); Shoichi Yamaguchi (Hokkaido University, Japan); Manabu Omiya (Hokkaido University, Japan)
- POS2.41 Person Detection Performance in Indoor and Outdoor Scenarios by MIMO Sensor**
Takeshi Hiraishi (Niigata University, Japan); Kentaro Nishimori (Niigata University, Japan); Keita Ushiki (Niigata University, Japan); Naoki Honma (Iwate University, Japan); Hideo Makino (Niigata University, Japan)
- POS2.42 Three-dimensional OTA Design Considerations Based on MIMO Antenna Radiation and Multipath Interactions**
Kun Li (University of Toyama, Japan); Kazuhiro Honda (University of Toyama, Japan); Koichi Ogawa (University of Toyama & Faculty of Engineering, Japan)
- POS2.43 Estimation Method for Complex Radiation Pattern of MIMO Antennas Using Backscattering Waves**
Masatoshi Saitoh (Tohoku University, Japan); Naoki Honma (Iwate University, Japan); Qiang Chen (Tohoku University, Japan)
- POS2.44 Experimental Study on Elevation Directional Channel Properties to Evaluate Performance of 3D-MIMO At Base Station in Microcell Outdoor to Indoor Environment**
Nobutaka Omaki (NTT DOCOMO, Inc, Japan); Koshiro Kitao (NTT DOCOMO, INC., Japan); Kentaro Saito (NTT DOCOMO, INC., Japan); Tetsuro Imai (NTT DCOMO, INC., Japan); Yukihiro Okumura (NTT DOCOMO, INC., Japan)
- POS2.45 A Combined Iterative Interference Alignment Scheme for K-user MIMO Interference Channel**
Feng Ju (Doshisha University, Japan); Hideichi Sasaoka (Doshisha University, Japan); Hisato Iwai (Doshisha University, Japan)

POS2.46 Analog-digital Hybrid Eigenmode Transmission for Massive Short-range MIMO

Kentarō Murata (*National Defense Academy, Japan*); Hisashi Morishita (*National Defense Academy, Japan*); Naoki Honma (*Iwate University, Japan*); Kentarō Nishimori (*Niigata University, Japan*); David Klymyshyn (*University of Saskatchewan, Canada*)

POS2.47 Massive MIMO Transmission by Calibration Circuit Eliminating CSI Feedback

Satoshi Sasaki (*Niigata University, Japan*); Kentarō Nishimori (*Niigata University, Japan*); Hiroyoshi Yamada (*Niigata University, Japan*)

POS2.48 Performance Evaluation by Antenna Selection Using Real Propagation Channel on Massive MIMO

Ryochi Kataoka (*Niigata University, Japan*); Kentarō Nishimori (*Niigata University, Japan*); Ngochao Tran (*NTT DOCOMO, INC., Japan*); Tetsuro Imai (*NTT DOCOMO, Inc., Japan*)

POS2.49 Effects of Frequency Shift Error on Periodical Noise Suppression System

Shinya Ito (*University of Fukui, Japan*); Mitoshi Fujimoto (*University of Fukui, Japan*); Toshikazu Hori (*University of Fukui, Japan*); Masaki Takanashi (*TOYOTA Central R&D Labs., Inc., Japan*); Yoshiyuki Hattori (*TOYOTA Central R&D Labs., Inc., Japan*)

POS2.50 SIR Based Grouping Scheme of Interference Alignment

Nozomu Maeda (*Doshisha University, Japan*); Hisato Iwai (*Doshisha University, Japan*); Hideichi Sasaoka (*Doshisha University, Japan*)

POS2.51 Phase Noise Optimization of Frequency Synthesizers Using Harmonics of Reference Signal

Kang-Chun Peng (*National Kaohsiung First University of Science and Technology, Taiwan*); Chan-Hung Lee (*National Kaohsiung First University Science and Technology, Taiwan*); Tse-Ta Wang (*Whetron Electronic, Taiwan*)

POS2.52 Printed Wideband Antenna for LTE (Long Term Evolution) Application

Jian-You Lu (*Ming Chi University of Technology, Taiwan*); Su-Ling Tsai (*Ming Chi University of Technology, Taiwan*); Tsang-Yen Hsieh (*Ming Chi University of Technology, Taiwan*); Chuan-Chou Hwang (*Ming Chi University of Technology, Taiwan*); Jyh-Liang Wang (*Ming Chi University of Technology, Taiwan*); Chun-Yu Du (*National Ilan University, Taiwan*)

POS2.53 Design of Microstrip Antenna for LTE (Long Term Evolution) Applications

Hung Ming Lee (*Ming Chi University of Technology, Taiwan*); Su-Ling Tsai (*Ming Chi University of Technology, Taiwan*); Tsang-Yen Hsieh (*Ming Chi University of Technology, Taiwan*); Chuan-Chou Hwang (*Ming Chi University of Technology, Taiwan*); Jyh-Liang Wang (*Ming Chi University of Technology, Taiwan*); Chun-Yu Du (*National Ilan University, Taiwan*)

TP1	Student Oral Presentations
Tuesday, 5, Aug., 12:40-13:20, Conference Room	
Chair:	Takuji Arima (<i>Tokyo University of Agriculture and Technology, Japan</i>)

TP1.1 12:40 Radiation Pattern Control of Beam Adjustable Microstrip Antenna Arrays with Narrow-Width Rectangular Patch Elements

Ryo Okabe (*Saitama University, Japan*); Sakuyoshi Saito (*Saitama University, Japan*); Yuichi Kimura (*Saitama University, Japan*)

TP1.2 12:50 Circularly Polarized Broadband Waveguide Antenna Using L-shaped Probe

Ryoji Yamauchi (*Kumamoto University, Japan*); Takeshi Fukusako (*Kumamoto University, Japan*)

TP1.3 13:00 Printed Wideband Antenna for LTE (Long Term Evolution) Application

Jian-You Lu (*Ming Chi University of Technology, Taiwan*); Su-Ling Tsai (*Ming Chi University of Technology, Taiwan*); Tsang-Yen Hsieh (*Ming Chi University of Technology, Taiwan*); Chuan-Chou Hwang (*Ming Chi University of Technology, Taiwan*); Jyh-Liang Wang (*Ming Chi University of Technology, Taiwan*); Chun-Yu Du (*National Ilan University, Taiwan*)

TP1.4 13:10 Design of Microstrip Antenna for LTE (Long Term Evolution) Applications

Hung Ming Lee (*Ming Chi University of Technology, Taiwan*); Su-Ling Tsai (*Ming Chi University of Technology, Taiwan*); Tsang-Yen Hsieh (*Ming Chi University of Technology, Taiwan*);

TP2	Mobile Propagation
Organized by Tetsuro Imai (NTT DOCOMO, Inc., Japan)	
Tuesday, 5, Aug., 13:40-15:00, Conference Room	
Co-Chairs:	Tetsuro Imai (<i>NTT DOCOMO, Inc., Japan</i>) Takashi Hikage (<i>Hokkaido University, Japan</i>)

TP2.1 13:40 Numerical Estimations of Propagation Characteristics and Interference Path Loss Due to Personal Electric Device in a Commercial Aircraft Cabin

Takashi Hikage (*Hokkaido University, Japan*); Masami Shirafune (*Hokkaido University, Japan*); Toshio Nojima (*Hokkaido University, Japan*); Shunichi Futatsumori (*Electronic Navigation Research Institute, Japan*); Akiko Kohmura (*Electronic Navigation Research Institute, Japan*); Naruto Yonemoto (*Electronic Navigation Research Institute, Japan*)

TP2.2 14:00 Performance Analysis of AR-Model-Based Linear Predictor with Kalman Filtering Algorithm for Wireless Communication Systems

Wataru Yamada (*Nippon Telegraph and Telephone Cooperation, Japan*); Motoharu Sasaki (*NTT Access Network Service Systems Laboratories, Japan*); Takatoshi Sugiyama (*NTT, Japan*); Oliver D Holland (*King's College London, United Kingdom*); Hamid Aghvami (*King's College London, United Kingdom*)

TP2.3 14:20 Fading Characteristics of Radio-Wave on High-Rise Floors in Mobile Communications

Hideki Omote (*Softbank Mobile Corp., Japan*); Yosuke Sugita (*Softbank Mobile Corp., Japan*); Ryo Yamaguchi (*SOFTBANK MOBILE Corp., Japan*)

TP2.4 14:40 Study on Hybrid Method of Ray-Tracing and Physical Optics for Outdoor-to-Indoor Propagation Channel Prediction

Tetsuro Imai (*NTT DOCOMO, Inc., Japan*); Yukihiko Okumura (*NTT DOCOMO, INC., Japan*)

TP3	Advanced Antenna Measurement
Organized by Takayuki Sasamori (Akita Prefectural University, Japan)	
Tuesday, 5, Aug., 15:15-16:35, Conference Room	
Co-Chairs:	Takayuki Sasamori (<i>Akita Prefectural University, Japan</i>), Toru Fukasawa (<i>Mitsubishi Electric Corporation, Japan</i>)

TP3.1 15:15 Far-field Gain Estimation of Reference Dipole Antenna Operated in Liquid by Considering Phase Centers

Nozomu Ishii (*National Institute of Information and Communications Technology/Niigata University, Japan*); Lira Hamada (*National Institute of Information and Communications Technology, Japan*); Soichi Watanabe (*National Institute of Information and Communications Technology, Japan*)

TP3.2 15:35 Measurement Methods for a Small Antenna with Reduced Influence of a Measurement Cable

Toru Fukasawa (*Mitsubishi Electric Corporation, Japan*); Kengo Nishimoto (*Mitsubishi Electric Corporation, Japan*); Takashi Yanagi (*Mitsubishi Electric Corporation, Japan*); Hiroaki Miyashita (*Mitsubishi Electric Corporation, Japan*)

TP3.3 15:55 Far Field Antenna Factor Measurement for Log-periodic Dipole Array Antenna Using the Amplitude Center Distance

Satoru Kurokawa (*National Institute of Advanced Industrial Science and Technology, Japan*); Masanobu Hirose (*National Institute of Advanced Industrial Science and Technology, Japan*); Michitaka Ameya (*NMIJ/AIST, Japan*)

TP3.4 16:15 Accuracy Improvement of S-parameter Method by Modified Open Correction

Takayuki Sasamori (*Akita Prefectural University, Japan*); Teruo Tobana (*Akita Prefectural University, Japan*); Yoji Isota (*Akita Prefectural University, Japan*)

TP4	Antennas for Wireless Applications I Organized by Kwai-Man Luk (City University of Hong Kong, Hong Kong)
Tuesday, 5, Aug., 16:50-18:00, Conference Room	
Chair:	Kwai-Man Luk (City University of Hong Kong, Hong Kong)

TP4.1 16:50 Recent development of millimeter-wave magneto-electric dipole

Kwai-Man Luk (City University of Hong Kong, Hong Kong)
(Invited)

TP4.2 17:20 Complementary Source Based Circularly Polarized Antenna Arrays for Millimeter-Wave Applications

Qian Zhu (City University of Hong Kong, Hong Kong); Kung Bo Ng (City University of Hong Kong, Hong Kong); Chi Hou Chan (City University of Hong Kong, Hong Kong)

TP4.3 17:40 Bandwidth Enhancement of Folded Dipole-based Microwave Absorber Surface

Wenquan Che (Nanjing University of Science and Technology, P.R. China); Yumei Chang (Nanjing University of Science and Technology, P.R. China); Yung Chow (University of Waterloo, Canada)

WA1	Antennas and Numerical Techniques for Biomedical Applications Organized by Jaehoon Choi (Hanyang University, Korea)
Wednesday, 6, Aug., 09:10-10:20, Conference Room	
Chair:	Jaehoon Choi (Hanyang University, Korea)

WA1.1 09:10 Dual-Mode Antennas for WBAN Applications

Jaehoon Choi (Hanyang University, Korea); Dogu Kang (Hanyang University, Korea); Jinpil Tak (Hanyang University, Korea); Kyeol Kwon (Hanyang University, Korea)
(Invited)

WA1.2 09:40 Design of FSS Unit-cell Integrated in Water Bolus for Microwave Biomedical Application

Woo Cheol Choi (Yonsei University, Korea); Young Joong Yoon (Yonsei University, Korea); Ki Joon Kim (Yonsei University, Korea)

WA1.3 10:00 Recent Developments in QCRF-FDTD Modeling of Complex Dispersive Media

Sang-Gyu Ha (Hanyang University, Korea); Kyung-Young Jung (Hanyang University, Korea)

WA2	Antennas for Wireless Applications II Organized by Kwai-Man Luk (City University of Hong Kong, Hong Kong)
Wednesday, 6, Aug., 10:35-11:55, Conference Room	
Chair:	Kin-Fai Tong (UCL, University of London, United Kingdom)

WA2.1 10:35 A Wideband Differentially Driven Circularly Polarized Antenna

Quan Xue (City University of Hong Kong, Hong Kong); Shaowei Liao (City University of Hong Kong, Hong Kong)

WA2.2 10:55 Miniaturized Implantable Circularly Polarized Patch Antenna

Yong-Xin Guo (National University of Singapore, Singapore); Changrong Liu (National University of Singapore, Singapore)

WA2.3 11:15 Reconfigurable Antennas for Very Wide Spectrum Monitoring

Amin Amiri (*UCL, United Kingdom*); Cristina Borda Fortuny (*UCL, United Kingdom*); Kin-Fai Tong (*UCL, University of London, United Kingdom*)

WA2.4 11:35 A Dual-Polarized Dipole Antenna with Balun Feed

Lin Shun-Yun (*Cheng Shiu University, Taiwan*); Tzung-Wern Chiou (*BWant Co., Ltd, Taiwan*); Wei-Heng Huang (*Cheng Shiu University, Taiwan*)

Closing

Wednesday, 6, Aug., 11:55-12:20, Conference Room

Lunch and Social Events

-Lunch

Boxed lunch will be served at the reception desk each conference day. (4, 5, 6 Aug.)

-Welcome Reception

The Welcome Reception will be held at the cafeteria of Hokkaido University. It will start at 18:30; Monday 4 Aug. Location of the cafeteria is indicated back cover page of this booklet. It will take 10 min. on foot from the conference hall. The staffs will guide you to the welcome reception place. Please be at the lobby of the venue after the session.

-Banquet

The Banquet will be held at ASPEN HOTEL 2nd floor. It will start at 18:30; Tuesday 5 Aug. Location of the ASPEN HOTEL is indicated back cover page of this booklet. It will take 5 min. on foot from the conference hall.

-Map

See the back cover page of this booklet.

Information for Presenters

-For Oral Presenters

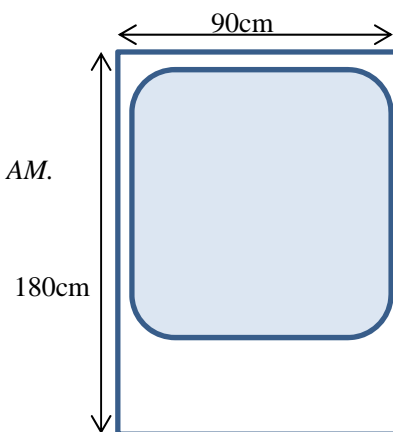
The presenter must upload presentation electric file before the session start time. Only Microsoft PowerPoint (.ppt or *.pptx) and Portable Document Format (*.pdf) files will be accepted. The OS of the PC will be windows 7.*

-For Poster Presenters

The poster size should be 841(W) x 1189(H) mm (ISO A0 size).

The poster presenters should put poster during coffee break time, AM.

The board size is indicated here.



Memo



Campus of Hokkaido University in Winter



View of Mountains at Biei (Biei is located 100 km away from Sapporo)

**Cover photo.....poplar trees at the campus of Hokkaido University, the trees are one of the symbol of the university
There is a beautiful avenue of poplars at the place. Please see it.!(15 min. on foot from the venue)*

Monday, August 4	
09:50-10:20	Opening Ceremony
10:20-11:00	Keynote Speech
11:20-12:10	Design Techniques and Theory for Printed Antennas
12:10-13:40	Poster I
13:40-15:00	Novel Techniques for Future Wireless Systems
15:15-16:35	Advanced Wireless Propagation and Systems
16:50-18:00	New Antenna Techniques
18:30-	Welcome Reception
Tuesday, August 5	
09:10-10:30	Antenna Systems
10:50-12:10	Novel Microwave Circuits and Subsystems
12:10-13:40	Poster II Student Oral Presentations (12:40–13:20)
13:40-15:00	Mobile Propagation
15:15-16:35	Advanced Antenna Measurement
16:50-18:00	Antennas for Wireless Applications I
18:30-	Banquet
Wednesday, August 6	
09:10-10:20	Antennas and Numerical Techniques for Biomedical Applications
10:35-11:55	Antennas for Wireless Applications II
11:55-12:20	Closing

