

# **2022 URSI-Japan Radio Science Meeting (URSI-JRSM 2022)**

**Chuo University, Tokyo, Japan**

**September 1-2, 2022**

## **Program**



Sponsored by:

- The Institute of Electronics, Information and Communication Engineers (IEICE)

Technically co-sponsored by:

- International Union of Radio Science (URSI)

In cooperation with:

- Japan Geoscience Union (JpGU)
- Society of Atmospheric Electricity of Japan (SAEJ)
- Society of Geomagnetism and Earth, Planetary and Space Sciences (SGEPSS)
- The Astronomical Society of Japan (ASJ)
- The Institute of Electrical Engineers of Japan (IEEJ)
- The Laser Society of Japan (LSJ)
- The Remote Sensing Society of Japan (RSSJ)

Supported by:

- Chuo University
- Science Council of Japan (SCJ)

## Sponsorships

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(in alphabetical order)

## Conference Organization

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## **Secretariat**

Kazuya Kobayashi and Takashi Nagasaka  
Chuo University

### E-mail:

[jrsm2022\\_secretariat-grp@g.chuo-u.ac.jp](mailto:jrsm2022_secretariat-grp@g.chuo-u.ac.jp)

# Program and Time Table

**Thursday, September 1, 2022**

**9:00 Opening Ceremony**

**9:15 Invited Lecture 1 (Commission A)**

*Chair: Hidekazu Hachisu (NICT, Japan)*

Atsushi Yamaguchi (RIKEN, Japan)

“Laser spectroscopy of triply charged Thorium ions towards a nuclear clock”

**9:45 Invited Lecture 2 (Commission B)**

*Chair: Jiro Hirokawa (Tokyo Institute of Technology, Japan)*

Kazuya Kobayashi (Chuo University, Japan)

“Radar cross section analysis of a finite parallel-plate waveguide with material loading: a rigorous Wiener-Hopf approach”

**10:15 Coffee Break**

**10:45 Keynote Lecture 1**

*Chair: Kazuya Kobayashi (Chuo University, Japan)*

Andrey Andrenko (National Institute of Information and Communications Technology, Japan)

“Wireless Power Transfer: Technology Review, Standardization and Human Body RF Exposure Assessment”

**11:30 Invited Lecture 3 (Commission D)**

*Chair: Naoki Shinohara (Kyoto University, Japan)*

Fumio Koyama (Tokyo Institute of Technology, Japan)

“High-speed VCSEL photonics for datacenter networks”

**12:00 Invited Lecture 4 (Commission G)**

*Chair: Mamoru Yamamoto (Kyoto University, Japan)*

Hiroyo Ohya (Graduate School of Engineering, Chiba University, Japan)

“Variability and role of the D-region ionosphere based on VLF/LF wave observations”

**12:30 Lunch / Exhibition / Business Meetings**

**14:00 Oral Sessions 1 (Commissions A-K Parallel)**

**15:15 Coffee Break**

**15:45 Poster Session / Exhibition**

**18:30 Poster Session close**

## Friday, September 2, 2022

### 9:00 Invited Lecture 5 (Commission F)

*Chair: Motoyuki Sato (Tohoku University, Japan)*

Miyuki Hirose (Kyushu Institute of Technology, Japan)

“Constitutive effective ray-tracing parameters for mobile propagation prediction”

### 9:30 Invited Lecture 6 (Commission E)

*Chair: Tomoo Ushio (Osaka University, Japan)*

Yasuhide Hobara (University of Electro-Communications, Japan)

“Monitoring and prediction of terrestrial and space environments using natural and man-made electromagnetic noises”

### 10:00 Coffee Break

### 10:30 Keynote Lecture 2

*Chair: Kazuya Kobayashi (Chuo University, Japan)*

Michiko Kuroda (Tokyo University of Technology, Japan)

“Women in Radio Science Chapter in Japan and the Maxwell equations”

### 11:15 SPC (Student Paper Competition) Special Session

### 12:30 Lunch / Exhibition / Business Meetings

### 14:00 Oral Sessions 2 (Commissions A-K Parallel)

### 15:15 Coffee Break

### 15:45 Invited Lecture 7 (Commission C)

*Chair: Satoshi Tsukamoto (Toyohashi University of Technology, Japan)*

Noriharu Suematsu (Tohoku University, Japan)

“Direct digital RF transceiver technology for millimeter-wave DBF systems”

### 16:15 Invited Lecture 8 (Commission H)

*Chair: Hirotugu Kojima (Kyoto University, Japan)*

Munehito Shoda (School of Science, The University of Tokyo, Japan)

“Solar wind acceleration driven by plasma waves”

### 16:45 Break

### 17:00 Invited Lecture 9 (Commission J)

*Chair: Nario Kuno (University of Tsukuba, Japan)*

Mareki Honma (National Astronomical Observatory of Japan, Japan)

“Imaging super-massive black holes with the Event Horizon Telescope”

**17:30 Invited Lecture 10 (Commission K)**

*Chair: Takashi Hikage (Hokkaido University, Japan)*

Maya Mizuno (National Institute of Information and Communications Technology, Japan)

“Spectroscopic analysis in Terahertz frequency region for electromagnetics in medicine and biology”

**18:00 SPC Award Ceremony / Closing Ceremony**

**Conference Room Information:**

Opening Ceremony .....	Room 5534, 5 <sup>th</sup> Floor, Building No. 5
Keynote Lectures and Invited Lectures .....	Room 5534, 5 <sup>th</sup> Floor, Building No. 5
Oral sessions .....	Building No. 5 (see ‘Conference Events’ page)
Closing Ceremony .....	Room 5534, 5 <sup>th</sup> Floor, Building No. 5
Poster Session .....	3 <sup>rd</sup> Floor, Building No. 6
Exhibition .....	Room 5133, 1 <sup>st</sup> Floor, Building No. 5
Commission Business Meetings.....	Building No. 5 (see ‘Conference Events’ page)

# List of Oral Papers

## Commission A: Electromagnetic metrology

Thursday, September 1, 2022

### Oral Session 1: Activities on the redefinition of the second and on the treatment of the leap second

**Building 5 (3F), Room 5333**

*Chair: Hidekazu Hachisu (NICT, Japan)*

- 14:00 A1-1 Overview of the recent activities in CCTF towards the redefinition of the second**  
Masami Yasuda (NMIJ, AIST, Japan)
- 14:20 A1-2 Graphical picture of a definition of the second based on multiple transitions**  
Tetsuya Ido (NICT, Japan)
- 14:40 A1-3 Current Situation for the Continuous Reference Time Scale**  
Yasuhiro Koyama (NICT, Japan)

Friday, September 2, 2022

### Oral Session 2: Compact microwave frequency standards and their applications

**Building 5 (3F), Room 5333**

*Chair: Hidekazu Hachisu (NICT, Japan)*

- 14:00 A2-1 High Stability 9 x 7 mm OCXO Using Twin-Crystal Technology and Simultaneous Dual-Mode Oscillation**  
Yasuto Ishii, Manabu Ito, Manabu Ishikawa, Tsukasa Kobata, Shunichi Wakamatsu (Nihon Dempa Kogyo Co., Ltd, Japan)
- 14:20 A2-2 Multiple Photodetection Method for Light-shift Measurement of Gas-cell Based Atomic Clock**  
Masahiro Fukuoka, Akira Hanatani, Shigeyoshi Goka (Tokyo Metropolitan University, Japan)
- 14:40 A2-3 Study of Local Time Management System of Atomic Clock Network for Robust and Resilient Infrastructure**  
Yuichiro Yano, Tetsuya Ido, Motoaki Hara (NICT, Japan)
- 15:00 A2-4 Low Phase Noise THz Generation from a Fiber-Referenced Microresonator Soliton Comb**  
Naoya Kuse (Tokushima University, Japan, Science and Technology Agency, Japan), Kenji Nishimoto, Yu Tokizane, Shota Okada (Tokushima University, Japan), Gabriele Navickaite, Michael Geiselmann (Ligentec SA), Kaoru Minoshima (Tokushima University, The University of Electro-Communications, Japan), Takeshi Yasui (Tokushima University, Japan)

## Commission B: Fields and waves

Thursday, September 1, 2022

### Oral Session 1: Advances and perspective of Commission B, JNC-URSI (1)

Building 5 (3F), Room 5334

*Chair: Naobumi Michishita (National Defense Academy, Japan)*

- 14:00 (Invited) B1-1 Small and Thin Antenna MACKEY with Strong Robustness against Metal**  
Shigeru Makino (Kanazawa Institute of Technology, Japan)
- 14:20 (Invited) B1-2 Development of a Novel Explicit FDTD Method Based on the Iterated Crank-Nicolson Scheme**  
Jun Shibayama, Junji Yamauchi, and Hisamatsu Nakano (Hosei University, Japan)
- 14:40 (Invited) B1-3 FDTD Method Struggle with Computation Time**  
Takuji Arima, and Toru Uno (Tokyo University of Agriculture and Technology, Japan)
- 15:00 (Invited) B1-4 Fundamental Analysis on EM Wave Scattering by Simple Cracks on Conducting Plane**  
Ryoichi Sato (Niigata University, Japan), Hiroshi Shirai (Chuo University, Japan)

Friday, September 2, 2022

### Oral Session 2: Advances and perspective of Commission B, JNC-URSI (2)

Building 5 (3F), Room 5334

*Chair: Koh Hashimoto (Toshiba Corporation, Japan)*

- 14:00 (Invited) B2-1 Numerical Simulation of ULF Fields Generated by Subsurface Electric Currents and Examination of the Correlation between Current Intensity and Magnitude of Earthquake**  
Yoshiaki Ando, Ryota Kimura (The University of Electro-Communications, Japan), Katsumi Hattori (Chiba University, Japan), and Masashi Hayakawa (Hayakawa Institute of Seismo Electromagnetics Co. Ltd., The University of Electro-Communications, Japan)
- 14:20 (Invited) B2-2 Source Reconstruction Using Fourier Transform and Eigenmode Currents**  
Kazuto Mochiki, Keisuke Konno and Qiang Chen (Tohoku University, Japan)
- 14:40 (Invited) B2-3 Progress in Time-Domain Analysis of Electromagnetic Fields by Fast Inverse Laplace Transform**  
Seiya Kishimoto and Shinichiro Ohnuki (Nihon University, Japan)
- 15:00 (Invited) B2-4 Antennas and Electromagnetic Field Measurement for Future Wireless Applications Using Radio over Fiber Technologies**  
Satoru Kurokawa (NMIJ, AIST, Japan)

## Commission C: Radiocommunication systems and signal processing

Thursday, September 1, 2022

### Oral Session 1: Wireless communication (1)

Building 5 (3F), Room 5335

*Chair: Satoshi Tsukamoto (Toyohashi University of Technology, Japan)*

- 14:00 C1-1 **Communication Area Expansion Effect by Repeater in Polarized MIMO Transmission**  
Mitoshi Fujimoto (University of Fukui, Japan)
- 14:15 C1-2 **User Scheduling at Base Station Cluster Boundary for Massive MIMO Downlink Transmission**  
Masahito Yata, Yukitoshi Sanada (Keio University, Japan)
- 14:30 C1-3 **Enabling Synchronization between RSS data and Capture data for Wireless Resource Usage Monitoring**  
Morihiko Tamai, Akio Hasegawa, Hiroyuki Yokoyama (Advanced Telecommunications Research Institute International, Japan)
- 14:45 C1-4 **Passive Indoor Localization Based on Propagation Delay Fingerprinting Extracted from Wi-Fi Channel State Information**  
Nopphon Keerativoranan, Yap Tee Ying, Jun-ichi Takada (Tokyo Institute of Technology, Japan)
- 15:00 C1-5 **Design of High-impedance Antennas for Wireless Power Transfer Applications**  
Keisuke Noguchi (Kanazawa Institute of Technology, Japan)

Friday, September 2, 2022

### Oral Session 2: Wireless communication (2)

Building 5 (3F), Room 5335

*Chair: Noriharu Suematsu (Tohoku University, Japan)*

- 14:00 C2-1 **Single Carrier Transmission Scheme for Sub-THz band Power Amplifier toward 6G Mobile Communication System**  
Yasunori Suzuki, Hiroshi Okazaki, Satoshi Suyama (NTT Docomo, Inc., Japan)
- 14:15 C2-2 **28GHz-Band 1-D and 2-D Beam Steering Network Based Broadside Coupled Stripline**  
Jean Temga, Tomoyuki Furuichi, Takashi Shiba, Noriharu Suematsu (Tohoku University, Japan)
- 14:30 C2-3 **Experimental Verification of Adaptive Impedance Matching in a Small Card-Sized VHF-band Heartbeat Sensor Module**  
Kengo Nishimoto, Saki Wada, Yoshio Inasawa (Mitsubishi Electric Corporation, Japan)
- 14:45 C2-4 **K-band Single-Shunt Rectifier Using Simple Layout Matching Circuit on PCB**  
Satoshi Yoshida, Kenjiro Nishikawa (Kagoshima University, Japan)

**15:00 C2-5 Multi-band RF Spectrum Reconstruction from Multiple Direct RF Undersampled Signals**

Tomoyuki Furuichi, Takashi Shiba, Noriharu Suematsu (Tohoku University, Japan)

## **Commission D: Electronics and photonics**

**Thursday, September 1, 2022**

### **Oral Session 1: Electronics**

**Building 5 (3F), Room 5336**

*Chair: Naoki Shinohara (Kyoto University, Japan)*

**14:00 (Invited) D1-1 Highly Reliable In-Vehicle Optical Network for Autonomous Driving**

Hiroyuki Tsuda (Keio University, Japan)

**14:15 (Invited) D1-2 Semiconductor Topological Nanophotonics with Robust Slow Light Waveguides**

Yasutomo Ota (Keio University, Japan), Satoshi Iwamoto (The University of Tokyo, Japan)

**14:30 (Invited) D1-3 Lithium Niobate Modulators for Microwave Photonics**

Yuya Yamaguchi (NICT, Japan)

**14:45 (Invited) D1-4 Compact Silicon Photonics Transceiver with Quantum Dot Laser**

Takahiro Nakamura (AIO Core Co., Ltd., Japan)

**15:00 (Invited) D1-5 Output Power Enhancement in Photonic-Based RF Generation by Optical Pulse Compression: Influence of Saturation of Photodiode**

Keita Ogawa, Masayuki Suzuki, Hiroyuki Toda (Doshisha University, Japan)

**Friday, September 2, 2022**

### **Oral Session 2: Photonics**

**Building 5 (3F), Room 5336**

*Chair: Naoki Shinohara (Kyoto University, Japan)*

**14:00 (Invited) D2-1 Neural-Network Assisted Automatic Design of Microstrip Cross-Coupled Bandpass Filter**

Masataka Ohira, Ao Yamashita, Zhewang Ma (Saitama University, Japan)

**14:15 (Invited) D2-2 Leaky Dielectric Waveguides for Millimeter-Wave Coverage Extension**

Hiroshi Okazaki, Atsushi Fukuda, Hiroto Yamamoto, Kunihiro Kawai, Yasunori Suzuki (NTT Docomo, Inc., Japan)

**14:30 (Invited) D2-3 Design of Nonreciprocal Phase Shift in Composite Right/Left-Handed Metamaterials and Their Applications**

Tetsuya Ueda (Kyoto Institute of Technology, Japan)

**14:45 (Invited) D2-4 Formulation of Rectification Efficiency for Low-Power Bridge Rectifier Using the Diode**

Naoki Sakai, Kenji Itoh (Kanazawa Institute of Technology, Japan)

- 15:00 D2-5 Development of Simple Phased Array for Millimeter Wave Wireless Power Transfer**  
Naoki Shinohara, Hiroyuki Kamada, Bo Yang, and Wenyi Shao (Kyoto University, Japan)

## **Commission E: Electromagnetic environment and interference**

**Thursday, September 1, 2022**

### **Oral Session 1: Electromagnetic environment and interference (1)**

**Building 5 (2F), Room 5233**

*Chair: Yuuki Wada (Osaka University, Japan)*

- 14:00 E1-1 Observation of D-region Ionospheric Disturbances due to Solar Eclipses Using the Ground-Based VLF Radio Network**  
Sujay Pal (Srikrishna College, India), Bakul Das, Kheyali Barman, Prabir Kumar Haldar (Cooch Behar Panchanan Barma University, India), Subrata Kumar Midya (University of Calcutta, India), Sabyasachi Pal (Midnapore City College, India), Sushanta Kumar Mondal (Sidho-Kanho-Birsha University, India)
- 14:15 E1-2 Broadband Low-Frequency Views of Downward Terrestrial Gamma-ray Flashes**  
Yuuki Wada (Osaka University, Japan)
- 14:30 E1-3 Lower Ionospheric Fluctuations and Atmospheric Electric Field Immediately around Earthquake**  
Koichiro Misu, Mako Watanabe, Hiroshi Kikuchi, Yasuhide Hobara (The University of Electro-Communications, Japan)
- 14:45 E1-4 Variations of the Effective Height of the Lower Ionosphere according to the Results of Tweek-Atmospherics Measurements in the Northern and Southern Hemispheres**  
Alexander Shvets, Alisa Shvets, Viktor Ivanov (Usikov Institute for Radiophysics and Electronics, Ukraine), Yasuhide Hobara (The University of Electro-Communications, Japan), Oleksandr Koloskov (Institute of Radio Astronomy, National Antarctic Scientific Center MES, Ukraine), Yury Yampolsky (National Antarctic Scientific Center MES, Ukraine)
- 15:00 E1-5 Statistical analysis of the Atmospheric Electric Field Fluctuations associated with Earthquakes in Japan**  
Mako Watanabe, Yasuhide Hobara, Hiroshi Kikuchi, Risa Miyajima (The University of Electro-Communications, Japan)

**Friday, September 2, 2022**

**Oral Session 2: Electromagnetic environment and interference (2)**

**Building 5 (2F), Room 5233**

*Chair: Hiroshi Kikuchi (The University of Electro-Communications, Japan)*

- 14:00 E2-1 Modeling Atmosphere-Ionosphere Coupling during Typhoon 15 Using FDTD Method**  
Antrisha D. Setiawan, Yasuhide Hobara, Hiroshi Kikuchi (The University of Electro-Communications, Japan)
- 14:15 E2-2 Lightning Initiation near the Gamma-Ray Glow Region**  
Miwa Tsurumi et al., on behalf of Thundercloud Project (Aoyama Gakuin University, RIKEN, Japan)
- 14:30 E2-3 Observations of Precipitation Cores with X-band Dual Polarized Phased Array Weather Radar and LF Band Lightning Location System**  
Hiroshi Kikuchi (The University of Electro-Communications, Japan), Eiichi Yoshikawa (JAXA, Japan), Yoshitaka Nakamura (Kobe City College of Technology, Japan), Takeshi Morimoto (Kinki University, Japan), Tomoo Ushio (Osaka University, Japan), Yasuhide Hobara (The University of Electro-Communications, Japan)
- 14:45 E2-4 Information Protection of Screen Image against Electromagnetic Information Leakage**  
Hideaki Sone (Tohoku University, Japan), Yuichi Hayashi (Nara Institute of Science and Technology, Japan)

**Commission F: Wave propagation and remote sensing**

**Thursday, September 1, 2022**

**Oral Session 1: Past and future of wave propagation research in Commission F**

**Building 5 (2F), Room 5234**

*Chair: Motoharu Sasaki (NTT, Japan)*

- 14:00 F1-1 Scenario-Based Radio Channel Modeling in Cyber-Physical Wireless Emulator**  
Jun-ichi Takada, Nopphon Keerativoranan (Tokyo Institute of Technology, Japan)
- 14:15 F1-2 Study of Radio Environment and Propagation for Low Altitude UAV Communication**  
Shoichi Kitazawa, Erina Sasaki (Muroran Institute of Technology, Japan)

**Friday, September 2, 2022**

**Oral Session 2: Past and future of remote sensing research in Commission F**

**Building 5 (2F), Room 5234**

*Chair: Motoyuki Sato (Tohoku University, Japan)*

**14:00 F2-1 Fundamental Study of Heartbeat and Respiration Rates Estimation with Two Wave Models by Using mmWave MIMO FM-CW Radar**

Toshifumi Moriyama, Mie Mie Ko (Nagasaki University, Japan)

**14:15 F2-2 Phased Array Weather Radar Observation and Application**

Tomoo Ushio (Osaka University, Japan), Hiroshi Kikuchi (The University of Electro-Communications, Japan), Yuuki Wada (Osaka University, Japan), Eiichi Yoshikawa (JAXA, Japan)

**14:30 F2-3 Application of Passive Radar for Current Measurement by Ocean Surface Radar System**

Akitsugu Nadai (NICT, Japan)

**14:45 F2-4 Electromagnetic Wave Propagation Inside the Great Pyramid in Egypt**

Motoyuki Sato, Anwer S. Abd El-Hameed (Tohoku University, Japan)

**Commission G: Ionospheric radio and propagation**

**Thursday, September 1, 2022**

**Oral Session 1: Recent advances in ionospheric study**

**Building 5 (1F), Room 5137**

*Chair: Mamoru Yamamoto (Kyoto Univ., Japan)*

**14:00 G1-1 Geomagnetic Conjugacy of Plasma Bubbles extending to Mid-Latitudes during a Geomagnetic Storm on March 1, 2013**

Takuya Sori, Yuichi Otsuka, Atsuki Shinbori (ISEE, Nagoya University, Japan), Michi Nishioka, Septi Perwitasari (NICT, Japan)

**14:15 G1-2 Generation Mechanism of Ionospheric Disturbances after the 2022 Hunga Tonga-Hunga Ha'apai Volcanic Eruption**

Atsuki Shinbori, Yuichi Otsuka, Takuya Sori (ISEE, Nagoya University, Japan), Michi Nishioka, Septi Perwitasari (NICT, Japan), Takuo Tsuda (University of Electro-Communications, Japan), Nozomu Nishitani (ISEE, Nagoya University, Japan)

**14:30 G1-3 Statistical Analysis of Local Time and Seasonal Variations in the Sub-Ionosphere Using LF Transmitter Signals**

Yuma Nozaki, Hiroyo Ohya (Chiba University, Japan), Fuminori Tsuchiya (Tohoku University, Japan), Kenro Nozaki (The University of Electro-Communications, Japan), Hiroyuki Nakata (Chiba University, Japan), Kazuo Shiokawa (ISEE, Nagoya University, Japan)

**14:45 G1-4 Horizontal Inhomogeneity of Electron Density in the D-region Ionosphere During a X-class Solar Flare Using OCTAVE VLF/LF Observations**

Masaharu Nakayama, Hiroyo Ohya (Chiba University, Japan), Fuminori Tsuchiya (Tohoku University, Japan), Kazuo Shiokawa (ISEE, Nagoya University, Japan), Kenro Nozaki (The University of Electro-Communications, Japan), Hiroyuki Nakata (Chiba University, Japan)

**15:00 G1-5 Energetic Electron Precipitations from OCTAVE VLF/LF Observations**

Kentaro Tanaka, Hiroyo Ohya (Chiba University, Japan), Fuminori Tsuchiya (Tohoku University, Japan), Kazuo Shiokawa, Yoshizumi Miyoshi (ISEE, Nagoya University, Japan), Mariko Teramoto (Kyushu Institute of Technology, Japan), Kenro Nozaki (The University of Electro-Communications, Japan), Martin Connors (Athabasca University, Canada), Hiroyuki Nakata (Chiba University, Japan)

## **Commission H: Waves in plasmas**

**Thursday, September 1, 2022**

### **Oral Session 1: Scattering and acceleration of particles by plasma waves in space and laboratories**

**Building 5 (1F), Room 5138**

*Chair: Yuto Katoh (Tohoku University, Japan)*

**14:00 H1-1 Simulation Study of the Effect of the Mirror Force on the Collision Rate due to Energetic Electron Precipitation**

Yuto Katoh (Tohoku University, Japan), Paul Simon Rosendahl (Heidelberg University, Germany, Tohoku University, Japan), Yasunobu Ogawa (NIPR, Japan), Yasutaka Hiraki (Advanced Knowledge Laboratory, Inc., Japan), Hiroyasu Tadokoro (Chiba Keizai University, Japan)

**14:15 H1-2 Statistical Analyses on Low Energy Ion Heating by Electromagnetic Ion Cyclotron Waves via Wave-Particle Interaction Analyses: Arase Observations**

Masafumi Shoji, Yoshizumi Miyoshi, Lynn M Kistler, Kazushi Asamura, Yasumasa Kasaba, Ayako Matsuoka, Yoshiya Kasahara, Shoya Matsuda, Fuminori Tsuchiya, Atsushi Kumamoto, Satoko Nakamura, Chae-Woo Jun, Iku Shinohara (ISEE, Nagoya University, Japan)

**14:30 H1-3 A New Analytical Model to Specify the Exact Trapping Region of Electrons in a Coherent Whistler Mode Wave**

Masahiro Kitahara (Tohoku University, Japan), Yoshizumi Miyoshi, Satoko Nakamura, Masafumi Shoji (Nagoya University, Japan), Yuto Katoh (Tohoku University, Japan), Naritoshi Kitamura (Nagoya University, Japan)

**Friday, September 2, 2022**

**Oral Session 2: Measurement techniques of plasma waves in space and laboratories and their application to the diagnostic of plasmas**

**Building 5 (1F), Room 5138**

*Chair: Hirotugu Kojima (Kyoto University, Japan)*

**14:00 H2-1 Estimation Technique of Global Electron Density Profile Using Propagation Characteristic of Lightning Whistler**

Desy Purnami Singgih Putri, Yoshiya Kasahara, Shoya Matsuda (Kanazawa University, Japan), Fuminori Tsuchiya, Atsushi Kumamoto (Tohoku University, Japan), Ayako Matsuoka (Kyoto University, Japan)

**14:15 H2-2 Statistical Investigation of Wave Vector Directions of Lower-Band and Upper-Band Chorus Waves Observed by the Arase Satellite**

Satoshi Kurita (Kyoto University, Japan), Yoshizumi Miyoshi (ISEE, Nagoya University, Japan), Yoshiya Kasahara, Shoya Matsuda (Kanazawa University, Japan), Ayako Matsuoka (Kyoto University, Japan), Satoko Nakamura (ISEE, Nagoya University, Japan), Iku Shinohara (JAXA, Japan)

**14:30 H2-3 Plasma Wave and DC Electric Field Observations by LFAS onboard the SS-520-3 Sounding Rocket**

Takahiro Zushi (National Institute of Technology, Nara College, Japan), Keigo Ishisaka (Toyama Prefectural University, Japan), Yoshiya Kasahara, Mitsunori Ozaki (Kanazawa University, Japan), Satoshi Kurita (Kyoto University, Japan), Satoshi Yagitani (Kanazawa University, Japan), Yuto Katoh (Tohoku University, Japan), Takumi Abe (JAXA, Japan), Keisuke Hosokawa (The University of Electro-Communications, Japan), Yasunobu Ogawa (NIPR, Japan), Yoshifumi Saito (JAXA, Japan), Hirotugu Kojima (Kyoto University, Japan)

**Commission J: Radio Astronomy**

**Friday, September 2, 2022**

**Oral Session 2: Technology for radio astronomy**

**Building 5 (2F), Room 5235**

*Chair: Nario Kuno (University of Tsukuba, Japan)*

**14:00 J2-1 Development and Commissioning of 100 GHz MKID Camera at Nobeyama 45m Telescope**

Shunsuke Honda, Yosuke Murayama, Tomu Nitta (University of Tsukuba, Japan), Makoto Nagai (NAOJ, Japan), Hiromu Miyazawa, Ryohei Noji, Pranshu Mandal, Nario, Kuno (University of Tsukuba, Japan), Hiroshi Matsuo (NAOJ, Japan), Yutaro Sekimoto (JAXA, Japan), Naomasa Nakai (Kwansei Gakuin University, Japan)

**14:15 J2-2 ALMA2030 Wideband Sensitivity Upgrade – towards the Implementation of the ALMA Development Roadmap**

Alvaro Gonzalez (NAOJ, Japan)

- 14:30 J2-3 Large Submillimeter Telescope: Science Goals and Technical Challenges**  
Ray S. Furuya (Tokushima University, Japan)
- 14:45 J2-4 A Holographic Phase-Retrieval Method for Antenna Pattern Measurement of the LiteBIRD Low-Frequency Telescope**  
Ryo Nakano, Hayato Takakura, Yutaro Sekimoto (The University of Tokyo, JAXA, Japan), Junji Inatani (JAXA, Japan), Masahiro Sugimoto (NAOJ, Japan), Shugo Oguri (The University of Tokyo, JAXA, Japan), Frederick Matsuda (JAXA, Japan)
- 15:00 J2-5 Far-sidelobe and Polarization Angle Measurements of a LiteBIRD Low-Frequency Telescope Scaled Antenna**  
Hayato Takakura, Ryo Nakano, Yutaro Sekimoto (The University of Tokyo, JAXA, Japan), Junji Inatani (JAXA, Japan), Masahiro Sugimoto (NAOJ, Japan), Frederick Matsuda (JAXA, Japan), Shugo Oguri (The University of Tokyo, JAXA, Japan)

## **Commission K: Electromagnetics in biology and medicine**

**Friday, September 2, 2022**

**Oral Session 2: Recent research trends of electromagnetics in medicine and biology**

**Building 5 (2F), Room 5236**

*Chair: Kazuyuki Saito (Chiba University, Japan)*

- 14:00 (Invited) K2-1 Summary of Global Questionnaire Survey to Researchers on Standardization of Experimental Protocol for Safety Assessment of Radiofrequency Electromagnetic Fields**  
Akira Ushiyama (National Institute of Public Health, Japan), Kenji Hattori (Meiji Pharmaceutical University, Japan), Masateru Ikehata (Railway Technical Research Institute, Japan), Keiji Wada, Yukihisa Suzuki (Tokyo Metropolitan University, Japan)
- 14:15 K2-2 A Novel Approach of Assessment of Absorbed Power Density Using Inverse Source Method for Human Exposure to 28 GHz Electromagnetic Fields**  
Rasyidah Hanan Binti Mohd Baharin (NICT, Japan), Daisuke Nishihara (NICT, Aoyama Gakuin University, Japan), Kensuke Sasaki (NICT, Japan), Ryosuke Suga (Aoyama Gakuin University, Japan), Osamu Hashimoto (NICT, Aoyama Gakuin University, Japan), Tomoaki Nagaoka (NICT, Japan)
- 14:30 K2-3 SAR Analysis of Multiple Frequencies Using Numerical Smartphone Model**  
Keisuke Kimura, Kazuyuki Saito, Masaharu Takahashi (Chiba University, Japan), Tomoaki Nagaoka (NICT, Japan)
- 14:45 K2-4 A study on the Effectiveness of the Test Reduction Method of the SAR Measurement Based on the Antenna Position for the Compliance Assessment**  
Yuto Shimizu, Hiroshi Kawakami, Tomoaki Nagaoka (NICT, Japan)
- 15:00 (Invited) K2-5 A Decade of Activity on Dielectric Measurements of Biological Tissues**  
Kensuke Sasaki, Maya Mizuno, Tomoaki Nagaoka, Soichi Watanabe (NICT, Japan)

# List of Poster Papers

Thursday, September 1, 2022

15:45 – 18:30

**Building 6 (3F)**

*Chairs: Yasuhide Hobara (The University of Electro-Communications, Japan)*

## Student Paper Competition

**SPC-1 Reduction of Numerical Dispersion in the Explicit Finite-Difference Time-Domain Method with Higher-Degree Differential Terms**

Harune. Sekido and Takayuki Umeda (Institute for Space-Earth Environmental Research, Nagoya University, Nagoya, Japan)

**SPC-2 Secure Wireless Communications by Combining Terahertz and Optical Waves**

Tsubasa Saijo (Osaka University, Japan), Hiroshi Ito (Center for Natural Sciences, Kitasato University, Japan), Ryo Koma (NTT Access Network Service Systems Laboratories, NTT Corporation, Japan) and Tadao Nagatsuma (Osaka University, Japan)

**SPC-3 Thunderstorms and Total Lightning Characteristics Causing Heavy Precipitation in Japan: A Case Study**

Debrupa Mondal, Yasuhide Hobara, H. Kikuchi (The University of Electro-Communications, Japan) and Jeff Lapierre (Earth Networks, USA)

**SPC-4 MUSIC-Based Super Resolution CMP Velocity-depth Analysis for Multi-layer Cases**

Changyu Zhou (Tohoku University, Japan) and Motoyuki Sato (Center for Northeast Asian Studies, Tohoku University, Japan)

**SPC-5 Statistical Analysis of Local Time and Seasonal Variations in the Sub-Ionosphere Using LF Transmitter Signals**

Yuma Nozaki\*, Hiroyo Ohya (Chiba University, Japan), Fuminori Tsuchiya (Planetary Plasma and Atmospheric Research Center (PPARC), Graduate School of Science, Tohoku University, Japan), Kenro Nozaki (The University of Electro-Communications, Japan), Hiroyuki Nakata (Chiba University, Japan), and Kazuo Shiokawa (Institute for Space-Earth Environmental Research (ISEE), Nagoya University, Japan)

**SPC-6 Horizontal Inhomogeneity of Electron Density in the D-region Ionosphere During a X-class Solar Flare Using OCTAVE VLF/LF Observations**

Masaharu Nakayama, Hiroyo Ohya (Chiba University, Japan), Fuminori Tsuchiya (Planetary Plasma and Atmospheric Research Center (PPARC), Graduate School of Science, Tohoku University, Japan), Kazuo Shiokawa (Institute for Space-Earth Environmental Research (ISEE), Nagoya University, Japan), Kenro Nozaki (The University of Electro-Communications, Japan) and Hiroyuki Nakata (Chiba University, Japan)

**SPC-7 Energetic Electron Precipitations from OCTAVE VLF/LF Observations**

Kentaro Tanaka, Hiroyo Ohya (Chiba University, Japan), Fuminori Tsuchiya (Planetary Plasma and Atmospheric Research Center (PPARC), Graduate School of Science, Tohoku University, Japan), Kazuo Shiokawa, Yoshizumi Miyoshi (Institute for Space-Earth Environmental Research (ISEE), Nagoya University, Japan), Mariko Teramoto (Kyushu Institute of Technology), Kenro Nozaki (The University of Electro-Communications, Japan), Martin Connors (Athabasca University, Canada) and Hiroyuki Nakata (Chiba University, Japan)

**SPC-8 Bayesian  $k$ -vector Estimation Method for Electromagnetic Waves in Magnetized Cold Plasma**

Yuji Tanaka (Kanazawa University, Japan), Mamoru Ota (National Institute of Technology, Toyama, Japan), Shoya Matsuda and Yoshiya Kasahara (Kanazawa University, Japan)

**SPC-9 Proposal of a method for estimating the position of magnetic marker under conditions of enhanced magnetization by permanent magnet**

Y. Inoue, S.Chikaki, M.Fushimi, Y.Xiao (The University of Tokyo, Japan), A.Kuwahata (Tohoku University, Japan), M.Kusakabe (Research Center for Food Safety, The University of Tokyo, Japan), M. Sekino (The University of Tokyo, Japan)

**Commission A: Electromagnetic metrology**

**Commission B: Fields and waves**

**BP-1 Analysis of Radio Wave Scattering by Metal Objects Covered by Plasma**

Junya Takagi, Yohei Miyake, Hideyuki Usui (Kobe University, Japan), Nobuyuki Kaya (Wave Arrays, Inc., Japan)

**BP-2 Design Method of Gap Waveguide with Interlaced Pins for High-Frequency Fabrication**

Yaxiang Wu, Jiro Hirokawa, and Takashi Tomura (Tokyo Institute of Technology, Japan)

- BP-3 Design Method of a Hollow-waveguide Two-plane Coupler with Unequal Division Ratio along with Horizontal and Vertical Directions**  
Qi Li, Jiro Hirokawa and Takashi Tomura (Tokyo Institute of Technology, Japan)
- BP-4 Plane Wave Diffraction by a Slit Formed by Two Semi-Infinite Parallel-Plate Waveguides: Part I – The Case of H Polarization**  
Wataru Takahara, Takashi Nagasaka, and Kazuya Kobayashi (Chuo University, Japan)
- BP-5 Plane Wave Diffraction by a Slit Formed by Two Semi-Infinite Parallel-Plate Waveguides: Part II – The Case of E Polarization**  
Ryota Mimura, Takashi Nagasaka, and Kazuya Kobayashi (Chuo University, Japan)
- BP-6 Square Rod Antenna Covered by Mantle Cloak with Rejection Band at Lower Frequency Side of Operating Frequency**  
Shuhei Ozawa, Hiroshi Hashiguchi, Naobumi Michishita, Hisashi Morishita (National Defense Academy, Japan), Kiyoshi Sakimoto, Teruki Miyazaki, and Masato Tadokoro (The Yokohama Rubber Co., Ltd., Japan)
- BP-7 Analysis of a Dielectric Sphere Using the Three-Dimensional CP-EP FDTD Method**  
Kazuma Takeya, Tetsuya Iwamoto, Jun Shibayama, Junji Yamauchi, and Hisamatsu Nakano (Hosei University, Japan)
- BP-8 Eigenmode Analysis of a Plasmonic Waveguide with Dirac Semimetals in the THz Region**  
Ryo Tanaka, Ryo Otsuka, Jun Shibayama, Junji Yamauchi, and Hisamatsu Nakano (Hosei University, Japan)
- BP-9 FDTD Analysis of a Plasmonic Grating Coupler**  
Hinami Nakasaka, Kazuma Takeya, Jun Shibayama, Junji Yamauchi, and Hisamatsu Nakano (Hosei University, Japan)
- BP-10 Design of a 1D Slot Pair Radiating Subarray and a Centered Longitudinal Feeding Slot Waveguide Feeder for a Dual-polarized Parallel Plate Slot Array Antenna**  
Huanqian Xiong, Jiro Hirokawa, and Takashi Tomura (Tokyo Institute of Technology, Japan)
- BP-11 A Design Method for Polarization Splitters with an Arbitrary Refractive Index Profile in Cores**  
Taiki Arakawa, Kazuhiro Yamaguchi (Nihon University, Japan)\*, Kazunori Kameda (Sano Nihon University College, Japan), Shinichi Furukawa (Nihon University, Japan)

**BP-12 Plane Wave Diffraction by a Semi-Infinite Plate with Fractional Boundary Conditions: Comparison of Two Different Solutions**

K. Kishiguchi, T. Nagasaka, and K. Kobayashi (Chuo University, Japan)

**BP-13 Analysis of Reflection Response Consists of Periodically Conducting Strips and Lossless Dielectric Layer in Dispersion Medium**

Chun Wang, Ryosuke Ozaki, and Tsuneki Yamasaki (Nihon University, Japan)

**BP-14 Diffraction by a Semi-Infinite Parallel-Plate Waveguide with Material Loading: A Rigorous Wiener-Hopf Approach**

Tong Zhang and Kazuya Kobayashi (Chuo University, Japan)

**BP-15 Plane Wave Diffraction by a Material-Loaded Trough on a Ground Plane: Part I – The Case of E polarization**

Rio Uchida and Kazuya Kobayashi (Chuo Univ., Japan)

**BP-16 Plane Wave Diffraction by a Material-Loaded Trough on a Ground Plane: Part II – The Case of H polarization**

Hidekuni Furuhashi and Kazuya Kobayashi (Chuo University, Japan)

**BP-17 Calculation of Q Factor for Spherical Helix Antennas**

Keisuke Fujita, Takuma Shimada (Maebashi Institute of Technology, Japan)

**BP-18 Massively parallelized scheme of 3-D impedance method for GPU computing**

Yukihiro Suzuki(1), and Makoto Kitahara (Tokyo Metropolitan University, Japan)

**BP-19 Analytical Solution of Kirchhoff Approximation Applying Angular Spectrum Method**

Xin Du and Jun-ichi Takada (Tokyo Institute of Technology, Japan)

## **Commission C: Radiocommunication systems and signal processing**

**CP-1 A Study of Capacitive Coupling Wireless Power Transfer System with Electrodes Soaked in Salty Water**

Satoshi Tsukamoto, Ryosuke Horio and Takashi Ohira (Toyohashi University of Technology, Japan)

## **Commission D: Electronics and Photonics**

### **DP-1 Crypto key generation used spectrum fading property in RoF DAS**

Masashi Ohtsuki, Kazuo Kumamoto and Katsutoshi Tsukamoto (Osaka Institute of Technology, Japan)

## **Commission E: Electromagnetic environment and interference**

### **EP-1 Measurement of Electromagnetic Noise Near an Engine Brushcutter by Using EM-field Probes with Common Mode Removal Function**

Tessei Mizugai and Atsuhiko Nishikata (Tokyo Institute of Technology, Japan)

## **Commission F: Wave propagation and remote sensing**

### **FP-1 Calibration approach of ground-based weather radar network using dual-frequency precipitation radar on the global precipitation measurement**

Tsubasa Goto, Hiroshi Kikuchi (The University of Electro-Communications, Japan), Yoshitaka Nakamura (Kobe City College of Technology, Japan), Tomoo Ushio Tomoaki Mega (Osaka University, Japan), and Yasuhide Hobara (The University of Electro-Communications, Japan)

## **Commission G: Ionospheric radio and propagation**

### **GP-1 Study of the ionospheric spatial correlation**

Shuo Liu (China University of Geosciences, China, Institute for Space-Earth Environmental Research (ISEE), Nagoya University, Japan), Tao Yu (China University of Geosciences, China), and Y. Otsuka (Institute for Space-Earth Environmental Research (ISEE), Nagoya University, Japan)

### **GP-2 Electric Field Observation during Occurrence of Medium-Scale Traveling Ionospheric Disturbance by S-520-32 Sounding Rocket**

Miyuki Matsuyama, Keigo Ishisaka (Toyama Prefectural University, Japan), Yuki Ashihara (National Institute of Technology, Nara College, Japan), Mamoru Yamamoto (Kyoto University, Japan), Atsushi Kumamoto (Tohoku University, Japan), Hidetaka Shirasawa (Tokai University, Japan) and Takumi Abe (Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency, Japan)

## **Commission H: Waves in plasmas**

### **HP-1 Wave amplitude dependence of the pulsating aurora emissions**

Kazuteru Takahashi (Institute for Space-Earth Environmental Research, Nagoya University, Japan), Shinji Saito (National Institute of Information and Communications Technology, Japan), Yoshizumi Miyoshi (Institute for Space-Earth Environmental Research, Nagoya University, Japan), Kazushi Asamura (Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency, Japan), and Keisuke Hosokawa (The University of Electro-Communications, Japan)

### **HP-2 Particle Simulations on Antenna Characteristics in Space Plasma near the Lower-Hybrid Resonance Frequency**

Koshiro Kusachi\*, Yohei Miyake, Hideyuki Usui (Kobe University, Japan), Hirotsugu Kojima, Satoshi Kurita, and Ibuki Fukasawa (Kyoto University, Japan)

### **HP-3 Interferometry observation of ECH and chorus waves by the Arase satellite**

Tomoe Taki, Satoshi Kurita, Airi Shinjo (Kyoto University, Japan), Satoko Nakamura (Institute for Space-Earth Environmental Research, Nagoya University, Japan), Hirotsugu Kojima (Kyoto University, Japan), Yoshiya Kasahara, Shoya Matsuda (Kanazawa University, Japan), Ayako Matsuoka (Kyoto University, Japan), Yoshizumi Miyoshi (Institute for Space-Earth Environmental Research, Nagoya University, Japan), and Iku Shonohara (Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency, Japan)

### **HP-4 Simulation Study on Characteristics of Electric Field Sensors applied to the Interferometry technique in Space Plasmas**

Ibuki Fukasawa (Kyoto University, Japan), Yohei Miyake, Hideyuki Usui, Koshiro Kusachi (Kobe University, Japan), Satoshi Kurita, and Hirotsugu Kojima (Kyoto University, Japan)

## **Commission J: Radio astronomy**

### **JP-1 Hitachi and Takahagi 32-m radio telescopes: recent updates**

Yoshinori Yonekura, Yoshihiro Tanabe (Ibaraki University, Japan), Kenta Fujisawa, Kotaro Niinuma (Yamaguchi University, Japan), Hideo Ogawa (Osaka Metropolitan University, Japan), Koichiro Sugiyama (National Astronomical Research Institute of Thailand, Thailand), Kazuhiro Takefuji (USUDA Deep Space Center, JAXA, Japan), Mareki Honma, Hideyuki Kobayashi (Mizusawa VLBI Observatory, National Astronomical Observatory of Japan, The Graduate University for Advanced Studies (SOKENDAI), Japan), and members of JVNC

**JP-2 Antarctic 30-cm Submm Telescope Project**

Nario Kuno (University of Tsukuba, Japan), Masumichi Seta (Kwansei Gakuin University, Japan), Kazuo Sorai (Hokkaido University, Japan), Naomasa Nakai (Kwansei Gakuin University, Japan), Makoto Nagai (National Astronomical Observatory of Japan), Shunsuke Honda (University of Tsukuba, Japan), Hiroshi Matsuo (National Astronomical Observatory of Japan), Tomofumi Umemoto (National Astronomical Observatory of Japan), Dragan Salak (Hokkaido University, Japan), and Takuya Hashimoto (University of Tsukuba, Japan)

**JP-3 Ka-band Cryogenic Low-noise Receiver of the Misasa 54-m Antenna**

Masato Tsuboi (Ground Station for Deep Space Exploration and Telecommunication Project, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency (JAXA), Japan, The University of Tokyo, Japan), Yutaka Hasegawa, Goh Tabuchi (Ground Station for Deep Space Exploration and Telecommunication Project, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency (JAXA), Japan), Yasuhiro Murata (Ground Station for Deep Space Exploration and Telecommunication Project, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency (JAXA), Japan, Usuda Deep Space Center (UDSC), JAXA, Japan), Koji Yuchi, Tomoaki Toda, Takashi Uchimura, Kimihiro Kimura (Ground Station for Deep Space Exploration and Telecommunication Project, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency (JAXA), Japan), and Takashi Kasuga (Hosei University, Japan)

**JP-4 Correlation Polarimeter for Millimeter-wave Wavefront Sensing**

Makoto Nagai, Hiroaki, Imada (Advanced Technology Center (ATC), National Astronomical Observatory of Japan (NAOJ), Japan), Tom Nitta, Yosuke Murayama, Ryohei Noji (University of Tsukuba, Japan), Masato Naruse (Saitama University, Japan)

**JP-5 Development of Wideband Antennas for VLBI and Water Vapor Radiometer**

Hideki Ujihara (Kyoto University)

**Commission K: Electromagnetics in biology and medicine**

**KP-1 Development of a 28 GHz double-blind *in vitro* exposure system for the evaluation of the effects of electromagnetic waves on reconstructed human 3D tissue model cells**

Toshio Kamijo, Alfred Kik, Aki Hada, Keiji Wada, Yukihisa Suzuki (Tokyo Metropolitan University, Japan), Masateru Ikehata, Sachiko Yoshie (Railway Technical Res. Inst., Japan), Kenji Hattori (Meiji Pharmaceutical University, Japan), Akira Ushiyama (National Institute of Public Health, Japan)

- KP-2 Design and Development of 60 GHz Band Lens Antenna for Investigation of Effects of Local Exposure to Millimeter-waves on Thermal Physiology and Cellular Functions**  
Kohei Yamamoto, Kaito Sugimura, Takashi Hikage (Hokkaido University, Japan), and Hiroshi Masuda (Kurume University, Japan)
- KP-3 Dependence of Millimeter-wave Power Absorption in a 3-layer Half-space Model**  
Ken Sato (Hachinohe College, Japan), Kenta Someya (TKC Corporation, Japan), Chongsengchang Khamneexay (UXO clearance at JMAS Organization) and Yoshitsugu Kamimura (Utsunomiya University, Japan)
- KP-4 Numerical Simulation of Active Implantable Medical Device EMI Characteristics at 4G and 5G Sub-6GHz Bands Using Finite Element Method**  
Shuhei Waki, Takuji Nishikawa, Takashi Hikage, and Manabu Yamamoto (Hokkaido University, Japan)
- KP-5 Complex Permittivity and Permeability Measurement of Planar Samples Put Between Two Circular TE<sub>01</sub> Mode Waveguide Open Ends**  
Yu Iwagaki and Atsuhiko Nishikata (Tokyo Institute of Technology, Japan)
- KP-6 Low EMI wearable headbands with machine learning capability for continuously EEG monitoring in intensive care unit**  
Herming Chiueh (National Yang Ming Chiao Tung University, Taiwan), Nien-Chen Liao, Yen-Wei, Pai, Jin-An Huang (Taichung Veterans General Hospital, Taiwan), Henry Hong-Shing Lu, Hsiao-Chu Su, Hung-Pin Charles Wen (National Yang Ming Chiao Tung University, Taiwan), Yung-Yu Zhuang (National Central University, Taiwan) and Chieh-Liang Wu (Taichung Veterans General Hospital, Taiwan)
- KP-7 Performance Evaluation on RSSI-Based Implant Device Localization with Wideband Extremely Low Power Radio**  
Shunsuke Ishiguro, Dmitrieva Daria, Daisuke Anzai, and Jianqing Wang (Nagoya Institute of Technology, Japan)

# Conference Events

## Opening Ceremony

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9:00-9:15 (September 1, 2022)  
Room 5534, 5<sup>th</sup> Floor, Building No. 5

*MC: Yasuhide Hobara (Chair, URSI-JRSM 2022  
Technical Program Committee)*

### Opening Address:

Satoshi Yagitani (URSI-JRSM 2022 General  
Chair; President, Japan National Committee  
of URSI)

Kazunori Umeda (Dean, Faculty of Science and  
Engineering, Chuo University, Japan)

Makoto Ando (Immediate Past President,  
URSI)

## Oral Sessions

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14:00-15:15 (September 1, 2022)  
14:00-15:15 (September 2, 2022)  
Building No. 5

### Instructions for Oral Presentation:

Please bring and attach your own computer to  
the LCD projector in the session room. Both HDMI  
and VGA connectors are available. The session  
rooms are as follows:

Commission A: Room 5333, 3<sup>rd</sup> Floor  
Commission B: Room 5334, 3<sup>rd</sup> Floor  
Commission C: Room 5335, 3<sup>rd</sup> Floor  
Commission D: Room 5336, 3<sup>rd</sup> Floor  
Commission E: Room 5233, 2<sup>nd</sup> Floor  
Commission F: Room 5234, 2<sup>nd</sup> Floor  
Commission G: Room 5137, 1<sup>st</sup> Floor  
Commission H: Room 5138, 1<sup>st</sup> Floor  
Commission J: Room 5235, 2<sup>nd</sup> Floor  
Commission K: Room 5236, 2<sup>nd</sup> Floor

## Poster Session

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15:45-18:30 (September 1, 2022)  
3<sup>rd</sup> Floor, Building No. 6

### Instructions for Poster Presentation:

The dimensions of the poster presentation  
should not exceed 1800 mm (height) and 900 mm  
(width). The poster size should be less than A0 size  
(1189 mm height and 841 mm width). Authors are  
required to use only the boards corresponding to their  
posters. Each poster board is marked with a poster  
ID-number, which can be found in the poster program.  
Posters can be put up from 12:30 on September 1,  
2022. After the poster session is over (18:30 on  
September 1), all the posters should be removed  
immediately.

## Exhibition

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12:30-18:30 (September 1, 2022)  
10:00-14:00 (September 2, 2022)  
Room 5133, 1<sup>st</sup> Floor, Building No. 5

### List of Exhibitors:

- Springer Japan KK
- Research Center for Future Vehicle City,  
Toyohashi University of Technology
- Anritsu Corporation
- Restar Communications Corporation

## URSI-Japan

### Commission Business Meetings (open to all participants)

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Building No. 5

#### 12:30-13:15 (September 1, 2022):

Commission A: Room 5333, 3<sup>rd</sup> Floor

#### 13:15-14:00 (September 1, 2022):

Commission B: Room 5334, 3<sup>rd</sup> Floor  
Commission D: Room 5336, 3<sup>rd</sup> Floor  
Commission K: Room 5236, 2<sup>nd</sup> Floor

#### 12:30-13:15 (September 2, 2022):

Commission C: Room 5335, 3<sup>rd</sup> Floor  
Commission E: Room 5233, 2<sup>nd</sup> Floor  
Commission J: Room 5235, 2<sup>nd</sup> Floor

#### 13:15-14:00 (September 2, 2022):

Commission F: Room 5234, 2<sup>nd</sup> Floor  
Commission H: Room 5138, 1<sup>st</sup> Floor

## **Closing Ceremony**

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18:00-18:30 (September 2, 2022)  
Room 5534, 5<sup>th</sup> Floor, Building No. 5

*MC: Ryosuke Ozaki (Secretary, URSI-JRSM 2022 Steering Committee)*

### **SPC Award Ceremony:**

Winners of SPC will be awarded the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> prizes.

### **Closing Address:**

Kazuya Kobayashi (URSI-JRSM 2022 General Co-Chair; Vice-President, Japan National Committee of URSI; Vice-President, URSI; Assistant Secretary-General (AP-RASC), URSI)

## **URSI-JRSM 2022 Steering Committee Meeting (members only)**

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18:00-18:30 (September 1, 2022)  
Room 6701, 7<sup>th</sup> Floor, Building No. 6

## **SPC Committee Meetings (members only)**

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### **SPC Committee Meeting 1:**

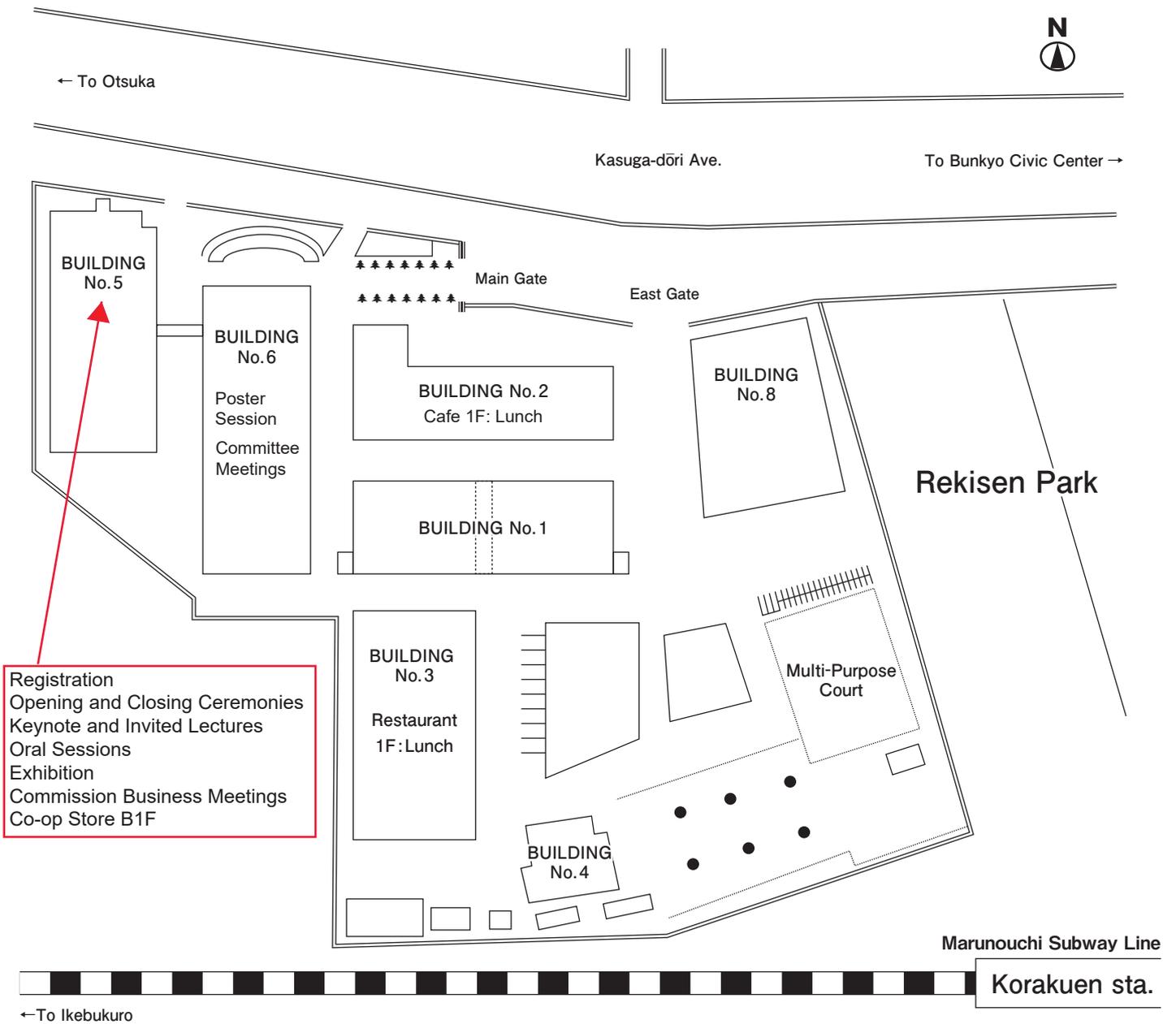
17:30-18:00 (September 1, 2022)  
Room 6701, 7<sup>th</sup> Floor, Building No. 6

### **SPC Committee Meeting 2:**

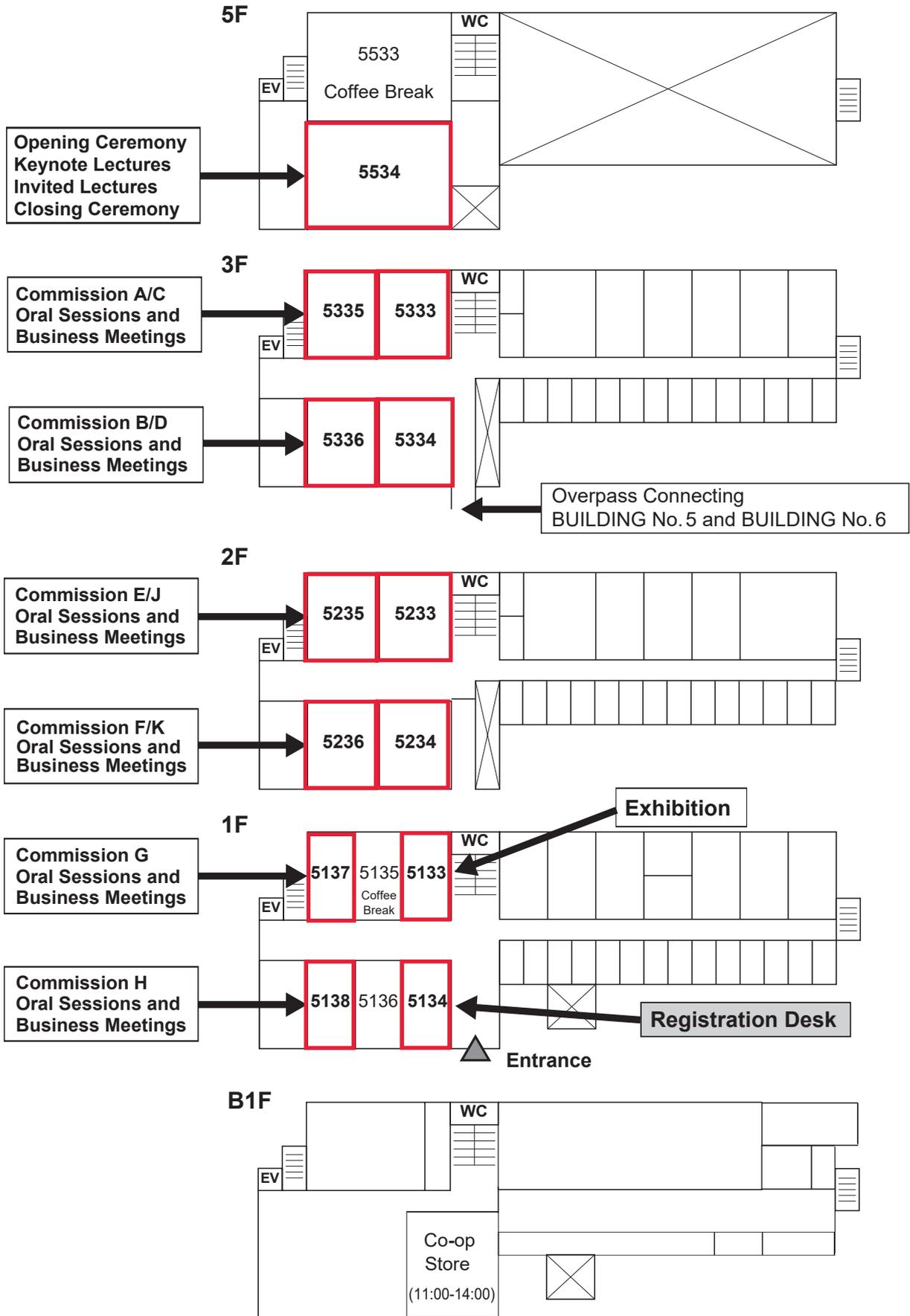
15:30-15:45 (September 2, 2022)  
Room 6701, 7<sup>th</sup> Floor, Building No. 6

# Floor Plans

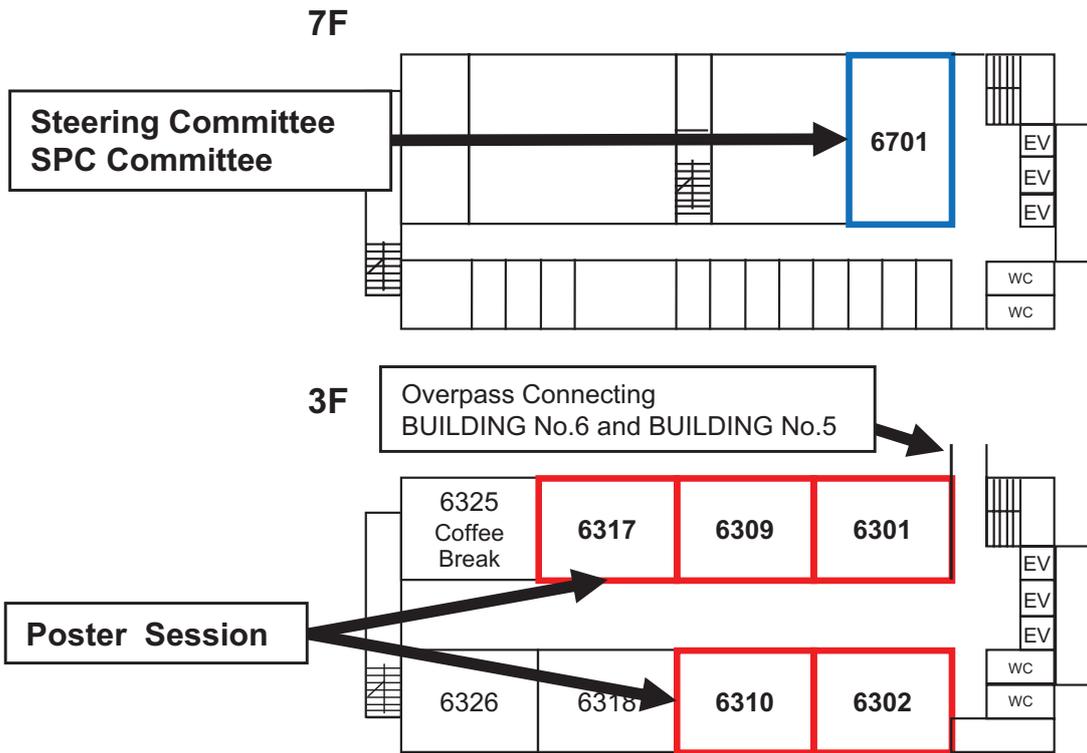
## Korakuen Campus, Chuo University



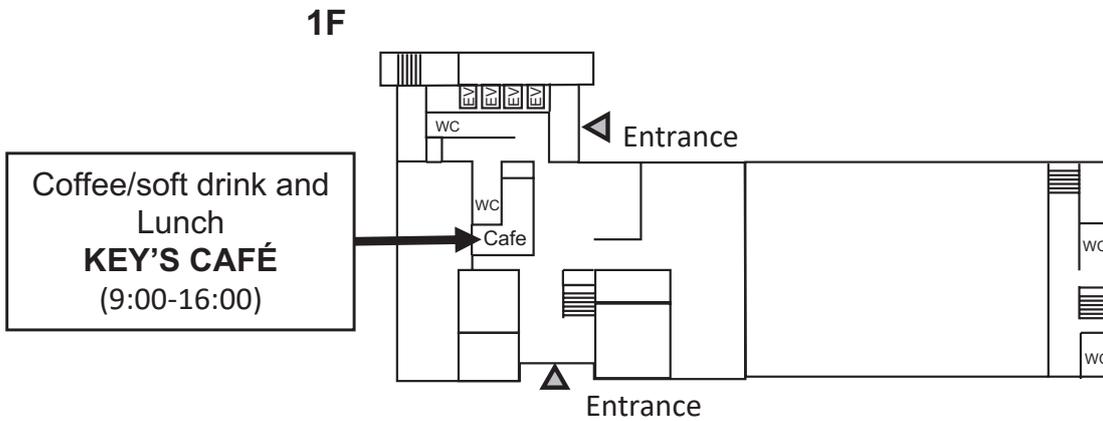
# BUILDING No. 5



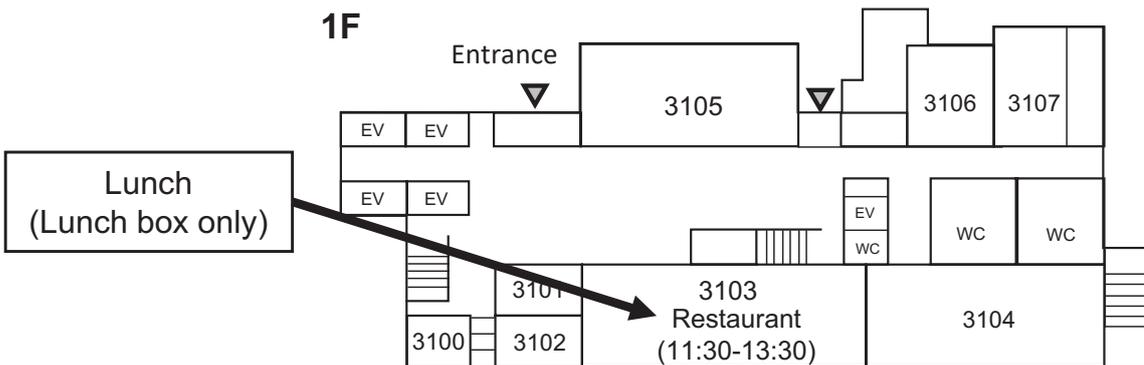
# BUILDING No. 6



# BUILDING No. 2



# BUILDING No. 3



# List of Exhibitors

- **Springer Japan KK**
- **Research Center for Future Vehicle City,  
Toyohashi University of Technology**
- **Anritsu Corporation**
- **Restar Communications Corporation**