Activity Report of URSI-F

June 28, 2018

Reported by Motoyuki Sato (Chair)

1. Commission meetings in the period of October 2017 – June 2018

May 9, 2018 Tokyo Institute of Technology

5 committee members attended
Dissuasion and decision of the organization of the executive committee

2. Meetings

(For more detail, please see http://ursi-f.nict.go.jp/)

(1) No. 618 Meeting October 4-5, 2017, Maison Franco-Japonaise (Tokyo)

This workshop was co-sponsored by IEICE SANE

Workshop on GPR measurements of active faults and tsunami sediments
Organized by Motoyuki Sato(Tohoku Univ), Maksim Bano(IPGS/Strasbourg Univ.)

[1] GPR measurements to assess the characteristics of active faults in Mongolia
[2] Fault detection in the Curah Lengkong at Mt Semeru in Indonesia: Topographic and Ground Penetrating Radar evidences
[3] Application for GPR survey to faults in Mogod Earthquake in central Mongolia
[4] Interpretation of GPR survey of subsurface layer structure of the west coast fault zone at Aomori bay
[5] Distribution of paleo-tsunami deposits in the eastern Taiwan using Ground Penetrating Radar
[6] Eroded Coastal Dune and Deposits in North Sumatra (Indonesia) following the 2004 Boxing Day Tsunami - a Geophysical Approach
[7] Delineation of Tsunami Deposites by an Array GPR System "Yakumo"

Workshop on Subsurface Electromagnetic Measurements
Organized by Motoyuki Sato (Tohoku University)

[1] Development of Non-Destructive Inspection Sensor for Wooden Structures (7) -- Demonstration Test of 3D Imaging in Wooden House Wall Model –
[2] POLARIMETRIC IMAGING of FULL POLARIMETRIC GPR
[3] Acoustic wave transducers as Ground Penetrating RADAR cooperative targets for sensing applications
[4] Preliminary Experiment of Sea Ice Thickness Measurement by Ground Penetrating Radar
[5] A practical approach for high-resolution pavement inspection with multistatic array GPR YAKUMO
[6] Nondestructive inspection of pavement by MIMO GPR ”Yakumo”
[7] Characterizing Peat Thickness Based on Common Mid Point (CMP) Ground Penetrating Radar -- A Preliminary Result --
[8] L- and S-band SAR backscatter modelling for lunar subsurface water ice detection
[9] Unsupervised Adaptive PolSAR Land Classification System Using Quaternion Neural Networks 2.5 Dimenstional EM and seismic wave modelling
[10] Development of landmine visualization systems based on complex-valued self-organizing-map (CSOM)
[11] Random noise de-noising and direct wave eliminating based on SVD method for ground penetrating radar signals
[12] Recent activities on archaeological survey by GPR-- Case study in Inari-yama Kofun --
[13] Diagnosing deterioration of tree trunks using GPR
[14] Railway Structures Inspection Method using G.P.R. -- Inspection precision improvement and improvement of the workefficiency for tunnnel lining and railroad-bed --

No. 619 Meeting October 19-20, 2018, Hachinohe Commerce and Industry Building (Aomori)

This meeting was co-sponsored by IEICE Technical Committee on AP and IEEE AP-S Tokyo Chapter.

URSI-F Special Lecture
Multiple scattering of electromagnetic waves in random media , Prof.Shigeo Ito (Toyo Univ.)

No. 620 Meeting December 13, 2018, NICT (Tokyo)

[1] Experimental Study of Estimating a Service Area based on a Relationship between Number of Wireless LAN Client Terminals Associated with a Micro Cell added on a Macro Cell Operated by Dual 5GHz Band Mode of Cisco AP3802I and Number of Seats Prepared in the Cell in a Non-Territorial Office
[2] TRMM (Tropical Rainfall Measurement Mission) –Rainfall radar from the beginning to the end-

[3] Experimental study on 3D imaging of basic targets using Polarimetric-HoloSAR
[4] Software defined radio implementation of passive RADAR using low-cost DVB-T receivers

(2) No. 621 Meeting January 18-19, Advanced Telecomunications Research Institute International (ATR) Kyoto

This meeting was co-sponsored by IEICE Technical Committee on AP, WPT and IEEE AP-S Kansai Chapter.
Eight papers relevant to the field of URSI-F were presented:

Organized Session "Propagation" (Organizer: Prof. Hisato Iwai (Doshisha Univ.))

[1] Human Body Shadowing in an Indoor Environment at 26.4GHz and 66.5 GHz band
[2] Shadowing Effect of Obstacles on Millimeter-wave Band Propagation Channel in Indoor Environment
[3] Measurement evaluation of human body blocking for inter-network interference of 60-GHz-band WBAN
[4] Effect of the Object Inside a Tunnel in the Radio Wave Propagation of a Subway Tunnel
[5] Evaluation of Aircraft Cabin- to-Exterior Propagation Characteristics for 4.4 GHz-band WAIC Systems using a Large Scale FDTD Analysis
[6] Radio Propagation Prediction Method Using Point Cloud Data in NLOS Urban Environments for high frequency bands
[7] Prediction Method using Machine-Learning for Path Loss Characteristics Considering Several Blockages in An Open-Square Environment
[8] Power Distribution Measurement for the Communication Quality Visualization in the Drone Flight Area

(3) No. 622 Meeting March 19, 2108, NTT Yokosuka development Center

[1] Digital Transmission Analysis from Propagation Viewpoint - BER due to ISI in the case of MRC Diversity –
[2] The Time Difference Analysis Between Rain Attenuation and Rainfall Intensity by Rain Cell Model in the Ka Band Satellite Communications
[3] Shadowing Effect of Obstacles on Millimetre-wave Band Propagation Channel in Indoor Environment
[4] Identification of Scattering Objects in 11GHz Urban Microcell Radio Propagation Channels via Visual Inspection of 3D Images

(4) No. 623 Meeting May 9, 2018, Tokyo Institute of Technology

[1] Current status of water vapor estimation method using terrestrial digital broadcasting wave
[2] Frequency Dependency Analysis of Multipath Clusters of Indoor Propagation Channel in SHF Bands
[3] Development of 12GHz Band SIMO Channel Sounder using Radio-on-Fiber Technology

(5) No. 624 Meeting May 17-18, 2018, Kumamoto University

This meeting was co-sponsored by IEICE Technical Committee on AP and IEEE AP-S Fukuoka Chapter.
Three papers relevant to the field of URSI-F were presented:

AP Organized Session "Propagation" (Organizer: Dr. Yukiko Kishiki (KKE))

[1] A study on estimation of field strength passing through perpendicularly located windows
-- Double Aperture Field method for perpendicularly located apertures --
[2] An estimation of secondary radiation pattern for predicting outdoor to indoor radio propagation characteristics
[3] A study on correlated path shadowing model based on experimental data

(6) No. 625 Meeting June 13, 2018, Tokyo Metropolitan University Akihabara Satellite Campus

[1] Development of Phased Array Radar for Meteorological Survey
[2] Revisited to Bello's WSSUS Channel Model
[3] The urban structural model for the propagation loss in microcell applied to a scale model

3. Others