

March 19, 2014

**Activity Report of URSI-F**

Reported by Y. Maekawa (Chair)

**1. Commission meetings in the period of November 2013 – March 2014**(For more detail, please see <http://ursi-f.nict.go.jp/>)

## (1) No. 579 Meeting

Date: November 20-22, 2013 Place: Matsue Terra (Shimane)

This meeting was held under the co-sponsorship of IEICE Technical Committees on AP and CS, and IEEE AP-S Japan Chapter. Twelve papers relevant to the field of URSI-F were presented in the URSI-F special session and other sessions:

1. Estimation of raindrop size distribution from spaceborne radar -- From aircraft experiment to DPR on Global Precipitation Mission core satellite --
2. Throughput performance for field experiments in MU-MIMO Systems
3. Performance Evaluation of Next Generation Airport Surface Communication System at Sendai Airport
4. On parallel transmission using beam forming with narrow beamwidth in LOS-MIMO system
5. Considerations on Prediction Effects of Multi-User MIMO Channels in Time-Varying Environments
6. Experimental Study on Elevation Directional Channel Properties to Evaluate Performance of FD-MIMO at Base Station in Microcell Environment -- Outdoor to Indoor Propagation Environment (O2I Scenario) --
7. PSAM QO-STBC Macro-Diversity and Its Evolution
8. Field Experimental Evaluations of Smart Vertical MIMO in LTE-Advanced Downlink
9. Full-dimensional MIMO (FD-MIMO): Opportunities and Challenges
10. DOA Estimation of Multi-band Signals with Frequency Characteristics
11. Analysis of MRC Diversity Characteristics of OFDM where Delay Profile Exceeds the Guard Interval [III] -- Derivation of Key Equations and Summary of Calculation Scheme --
12. Multiple APs Simultaneous Transmission Technology with Implicit Feedback Beamforming

For more details, please see: <http://www.ieice.org/cs/ap/jpn/>

## (2) No. 580 Meeting

Date: December 13, 2013 Place: National Institute of Information and Communications Technology (Tokyo)

Three papers were presented:

1. PiSAR-2 polarimetric images over Niigata area on 2013/08/25
2. A statistical model for double directional channel model in spherical wave domain
3. Development of W-band ground-based cloud profiling radar for calibration/evaluation of EarthCARE/CPR

## (3) No. 581 Meeting

Date: January 22-24, 2014 Place: Houzan Hall (Kagoshimsa)

This meeting was held under the co-sponsorship of IEICE Technical Committee on AP, and IEEE AP-S Fukuoka Chapter. 17 papers relevant to the field of URSI-F were presented in the special sessions organized for recent propagation issues:

1. Evaluation on indoor propagation characteristics for collision detection using MIMO transmission
2. Cumulative Distribution of Correlation between MIMO Channel Matrix Elements with Movement -- Comparison of Distribution with Theoretical and Simulation Values --
3. MIMO Spatial Correlation and Capacity using Ray Trace Method for Low Antenna Height in Urban Area
4. Experimental evaluation on MIMO sensor using MIMO-OFDM signals
5. An Experimental Study on Performance Evaluation of 4x2 MIMO channel for Indoor Environment with Propagation Path Shadowing by Moving People

6. Study on Shadowing by a Human Body at High Frequency Bands using UTD -- Radio Wave Propagation Technology for Future Radio Access and Mobile Optical Network --
7. Prediction of Line-of-Sight Propagation Loss Considering Traffic Density in Inter-Vehicle Communication Environments
8. A study of correction method for sloping area path loss estimation based on a scale model and actual measurements
9. A Study on Prediction of Angular Power Distribution in Urban Areas -- Distance Characteristics for Distribution Parameters of Departure in Middle-Scale Cities --
10. A study on the effects of rain area motion and ground wind velocity on rain attenuation characteristics in Ku-band satellite communications links
11. Study on Ionospheric Propagation Characteristics of MF Band Waves Observed in the Arctic
12. Study on Overreach Propagation by Tropospheric Ducting in Terrestrial Digital TV Broadcastings
13. Improvement of receiving performance by active propagation control in wireless communications
14. Experimental Study on Channel Properties in the 2GHz Band in Crowded Urban Small-Cell Environment
15. VHF Band Path Loss Model for Low Antenna Height in Residential Areas
16. The propagation characteristics in a wireless personal area network
17. Polarimetric Path Gain Calculation Using Uniform Circular Arrays with Directional Antenna Elements in Multipath Environments

For more details, please see: <http://www.ieice.org/cs/ap/jpn/>

- (4) No. 582 Meeting  
Date: March 4, 2014 Place: Niigata University (Niigata)

Four papers were presented:

1. Doppler FM-CW Polarimetric Atmospheric Radar Technology and Applications (Special lecture by Prof. L. P. Ligthart of Delft Univ. of Technology)
2. Application of GB-SAR to Environmental Monitoring and Disaster Mitigation
3. Rainfall Observation by X-band Polarimetric Airborne SAR, Pi-SAR2
4. PolInSAR Coherence Estimation Based on Best Normal Matrix Approximation

- (5) No. 583 Meeting  
Date: March 13, 2014 Place: NTT Yokosuka R & D Center (Kanagawa)

Four papers were presented:

1. A GPS Interferometer Scheme Based on Total Recording
2. Basic Study of MIMO Rank Adaptation in Mobile Propagation Path
3. Comparative Study of Measurement and Simulation to Identify the Dominant Propagation Mechanisms in Indoor Multipath Channels at 11 GHz
4. VHF Band Path Loss Model for Low Antenna Height Terminals in Residential Area

## 2. Others

International Symposium on Antennas and propagation (ISAP) 2013 was held in Nanjing, China. Date: Oct.25-25, 2013.