

# Global COE Group Workshop

## --Antenna Technology in Wireless Communications--

Date : March 2<sup>nd</sup> (Sunday) 13:30-17:20

March 3<sup>rd</sup> (Monday) 8:30-12:00

Place : Hotel Sakan (28, Aza-Yakushi, Akiu-machi, Taihaku-ku, Sendai, Miyagi,  
Tel: 022-398-2233)

Sponsor : Tohoku University Electro Related Graduate School Global COE Program  
"Center of Education and Research for Information Electronics Systems"

Co-sponsor : IEEE Sendai Section

Supporting : Transmission Engineering Research Committee

## Technical Program

### March 2 (Sunday)

13:30-13:45

Opening Remarks

Fumiyuki Adachi

(Director/Leader of Global COE Program, Tohoku University)

【Invited Session 1】

13:45-14:35

***Antenna Technology for Cellular Systems***

Keizo Cho (NTT DoCoMo, Inc.)

14:35-15:25

***Study of Advance Broadband Wireless Base-station System Using Optical Switching with Laser Array and Technologies for Integrated Network Platform***

Yang-Han Lee (Tamkang University)

15:25-15:40 Coffee break

【Invited Session 2】

15:40-16:30

***Equivalent Circuit Representation for Array Antenna and Its Application of Design of Adaptive MIMO systems***

Kiyomichi Araki (Tokyo Institute of Technology)

16:30-17:20

***60 GHz Antenna-in-Package Design and Evaluation***

Duixian Liu (Thomas J. Watson Research Center, IBM)

18:30-20:30 Banquet

**March 3 (Monday)**

**【Invited Session 3】**

8:30-9:10

***Mutual Coupling Effects on Performance of Array Antennas***

Qiaowei Yuan (Tokyo University of Agriculture and Technology)

9:10-9:50

***Using Circuit Theory to Maximize Channel Capacity in Compact MIMO Array***

Naoki Honma, Kentaro Nishimori, Yasushi Takatori (NTT Corporation)

9:50-10:05 Coffee break

**【Young Scientist Session】**

10:05-10:20

***Numerical Investigation of MIMO Channel Capacity in Indoor Environment***

Xiao Peng Yang (G-COE Postdoctoral Fellow), Qiang Chen and Kunio Sawaya

10:20-10:35

***Gain Unbalance Effects of Array Elements on MIMO Channel Capacity***

Takanori Iwaki (G-COE Research Assistant), Yu Kakinuma, Qiang Chen and Kunio Sawaya

10:35-10:50

***EM Field Measurement Using Modulated Probe Array***

Toru Mizukami (G-COE Research Assistant), Qiang Chen and Kunio Sawaya

10:50-11:05

***Impact of Adaptive Antenna Array and Transmit Power Control on a DS-CDMA Packet Cellular System***

Jing Xin Fu (G-COE Research Assistant) and Fumiyuki Adachi

11:05-11:20

***Low Complexity QRD-M Algorithms for MIMO Multiplexing Systems***

Wei Peng (G-COE Postdoctoral Fellow) and Fumiyuki Adachi

11:20-11:35

***Transmit Antenna Diversity for DS-CDMA/MMSE-FDE***

Kazuaki Takeda (JSPS Research Fellow), Kazuaki Takeda, Hiromichi Tomeba, and Fumiyuki Adachi

11:35-11:50

***Space-time Block Coded-joint Transmit/Receive Antenna Diversity***

Hiromichi Tomeba (JSPS Research Fellow), Kazuaki Takeda, and Fumiyuki Adachi

11:50-11:55

Closing Remarks

Kunio Sawaya (Tohoku University)