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Peak-amplitude-aware Precoded MIMO Systems

Abstract: In this talk, topics related to peak-to-average power ratio (PAPR) reduction and related precoding techniques of the transmit signal in multi-input multi-output (MIMO) space division multiplexing (SDM) transmissions are mainly presented. In this technique, peak-amplitude of the transmit signal is suppressed under a per-antenna power constraint. Our simulation results clarified that normalized instantaneous power of transmit signal can be reduced compared to case without PAPR reduction under requirements of ACLR and EVM.

Biography: Osamu Muta received a B.E. degree from Ehime University in Ehime, an M.E. degree from Kyushu Institute of Technology in Fukuoka, and a Ph.D. degree from Kyushu University in Fukuoka, Japan in 1996, 1998, and 2001, respectively. In 2001, he joined the Graduate School of Information Science and Electrical Engineering, Kyushu University as an assistant professor. Since 2010, he has been an associate professor in Center for Japan-Egypt Cooperation in Science and Technology, Kyushu University. His current research interests include signal processing techniques for wireless communications and power-line communications, and nonlinear distortion compensation techniques for high-power amplifiers. He received the 2005 active researcher award for excellent presentation from IEICE Radio Communication Systems. Dr. Muta is a member of IEICE and IEEE.