A Geometrical approach for multipath characteristics study with 28GHz measurements

Jinyi Liang, Myung-Don Kim, and Juyul Lee Electronics and Telecommunications Research Institute (ETRI) 218 Gajeongno, Yuseong-gu, Daejeon, 305-700, Korea {liangjinyi, mdkim, juyul}@etri.re.kr

Abstract—In this paper, a geometrical approach is presented to estimate locations of the last hop of multipath based on measurement data. Statistic characteristics of last hops can be used to generate spatially consistent channels which are required for 5G channel modelling. The measurement was conducted with a 28GHz wideband channel sounder in urban street environments. Results show that most last hops are distributed either on the walls of buildings or in the crossroad area.

Keywords—mmWave, 5G, propagation, channel modelling



Jinyi Liang (BS'04–MS'13) is a Researcher in the Advanced Communications Research Laboratory at Electronics and Telecommunications Research Institute (ETRI). He is Chinese and joined ETRI, Daejeon, Rep. of Korea, in July 2013, and he's working on the project 'Wireless Channel and Frequency Characterization based on Field Measurements for Broadband Mobile Hot-Spot Applications'. His research interests include MIMO, channel measurement and channel modeling for next generation mobile communications.



Myung-Don Kim (BS'93–MS'95) is a Principal Researcher in the Advanced Communications Research Laboratory at Electronics and Telecommunications Research Institute (ETRI). He joined ETRI, Daejeon, Rep. of Korea, in 1995, and he worked on the development of mobile test-beds for CDMA, IMT- 2000 and WCDMA systems. Since 2006, he has been involved in the development of wideband MIMO channel measuring system, measurement and channel estimation of MIMO channels. His research interests include MIMO, channel measurement and channel mobile communications.



Juyul Lee (BS'96-MS'98-PhD'10) is a Senior Researcher in the Advanced Communications Research Laboratory at Electronics and Telecommunications Research Institute (ETRI) since 2000. Prior joining with ETRI, he was a Research Engineer with the Agency for Defense Development (ADD) from 1998 to 2000. His research spans the fields of information theory and wireless communications, with special interests in multiple-antenna/multiple-user/multi-cell resource allocations, device-to-device communication.