

Channel Measurements and Characterizations for Automobile Factory Environments

Liu Liu*, Ke Zhang*, Cheng Tao*, Kun Zhang*, Ze Yuan*, Jianhua Zhang**

* School of Electronic and Information Engineering, Beijing Jiaotong University, Beijing, China

** Beijing University of Posts and Telecommunications, Beijing, China

liuliu@bjtu.edu.cn, 16125064@bjtu.edu.cn, chtaotao@bjtu.edu.cn, 16120166@bjtu.edu.cn,
16120159@bjtu.edu.cn, jhzhang@bupt.edu.cn

Abstract—There is tremendous hype around the Internet of Things, and particularly in the industrial realm (the industrial Internet of Things, IIoT), where many expect to find the biggest opportunity in the near term. The IIoT is also an important application in the fifth generation of wireless communications. In this paper, the channel propagations are investigated based on the realistic measurement data in an automobile factory. The path loss model is extracted using Least Square (LS) method, and the K factor is also parameterized. Meanwhile, the time delay (root mean squared delay) and the amount of multipath component (MPC)s are investigated and compared with typical propagation results. These results are beneficial and informative when designing wireless networks for IIoT.



Liu Liu received the B.E. and Ph.D. degrees from Beijing Jiaotong University, Beijing, China, in 2004 and 2010, respectively. From 2010 to 2012, he was a Post Ph.D. Researcher with the School of Electronic and Information Engineering, Institute of Broadband Wireless Mobile Communications, Beijing Jiaotong University, where he has been an Associated Professor since 2012. His general research interests include channel measurement and modeling for different propagation environments and signal processing of wireless communication in time-varying channel.



Ke Zhang received the B.E. degree from Harbin University of Science and Technology, Harbin, China, in 2016. She is currently pursuing the M.S. degree of institute of Broadband Wireless Mobile Communications, School of Electronic and Information Engineering, Beijing Jiaotong University. Her general research interest focuses on channel measurement and characterizations.