

Path Loss Models in LOS Conditions for Relaying Technique

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Abstract:

Relaying technique is a key feature for the 3GPP LTE-Advanced system. In order to evaluate the system performance, propagation path loss models for the links Base Station-Relay Station (BS-RS), Base Station-Mobile Station (BS-MS) and Relay Station-Mobile Station (RS-MS) must be investigated. This paper focuses on RS-MS link. It studies the impact of relay position and relay antenna height based on a measurement campaign focusing on Line of Sight (LOS) conditions. Furthermore, it aims to propose a log-distance Path Loss (PL) model. The analysis shows that the LOS PL model does not depend on the relay antenna height, while it depends on the RS position. The proposed PL model is close to the free space loss with a shift of about +/-6 dB depending on the RS position. The shadow fading is statistically characterized and its standard deviation varies between 4.7 dB and 5.8 dB.