

## Cooperative Diversity Scheme Based on MIMO-OFDM in Small Cell Network

**Authors :** Dong-Hyun Ha, Young-Min Ko, Chang-Bin Ha, Hyoung-Kyu Song

**Abstract :** In Heterogeneous network (HetNet) can provide high quality of a service in a wireless communication system by composition of small cell networks. The composition of small cell networks improves cell coverage and capacity to the mobile users. Recently, various techniques using small cell networks have been researched in the wireless communication system. In this paper, the cooperative scheme obtaining high reliability is proposed in the small cell networks. The proposed scheme suggests a cooperative small cell system and the new signal transmission technique in the proposed system model. The new signal transmission technique applies a cyclic delay diversity (CDD) scheme based on the multiple input multiple output-orthogonal frequency division multiplexing (MIMO-OFDM) system to obtain improved performance. The improved performance of the proposed scheme is confirmed by the simulation results.

**Keywords :** adaptive transmission, cooperative communication, diversity gain, OFDM

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