

The Adaptation MIMO in Tiered Femtocell over Indoor Fading Channel

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ABSTRACT

The channel correlation of MIMO (multiple-input multiple-output) system tiered with femtocellular network, namely MIMO-FT (MIMO-femtocell) system, is investigated in this thesis. It is known that channel correlation phenomenon definitely degrades the overall system performance of a wireless communication. Moreover, we claim that the coverage area of a MIMO-FT deployment will be down in size by the reason of channel correlation occurs in propagation channel. Some derived analytical closed forms are utilized to discuss the phenomenon of channel correlation exist in MIMO-FT system. It is significantly shown from the numerical results, the outage probability and the system performance become degradation when both correlation and SNR are deeper and maller, respectively. An algorithm with precoding is also explored for the purpose of mitigating the effect of channel correlation. Finally, the results from the thesis show that the fading parameters of Nakagami-m fading model still dominate the system performance of the MIMO-femtocell system.

Keywords : correlation、precoding、fading parameter、MIMO-femtocell

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