

# 階層式毫微微蜂巢介接MIMO技術於室內衰落通道之研究

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## 摘要

在本論文中，研究毫微微蜂巢(femtocell)部署於多輸入多輸出(multiple-input multiple-output, MIMO)系統所引起的通道相關因素，也就是多輸入多輸出毫微微蜂巢(MIMO-femtocell)系統。無線通訊技術已知，通道相關性的現象肯定會降低無線通訊的整體性能。此外，我們主張MIMO-femtocell部署的覆蓋區域將下降的原因，是通道相關性發生在傳輸通道裡。本論文中利用一些推導到的解析公式，進行對存在於MIMO-femtocell系統中之通道相關現象進行討論。從結論清楚的顯示，當更深的相關性發生和應用較小的SNR值時，斷話率會變得更大，系統性能變得較差。為了克服通道相關的效應，前置編碼(precoding)之演算法亦於文中進行探討；最後，本論文顯示在Nakagami-m通道環境中，衰落參數(fading parameter)仍然是支配MIMO-femtocell系統效能之主要因數。

關鍵詞：相關性、前置編碼、衰落參數、MIMO-femtocell

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