

# 應用多載波時頻跳躍機制於雙層毫微微蜂巢干擾迴避之研究

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## 摘要

高資料傳輸率、更高移動速度、結合數位多媒體應用、以及無處不通的環境傳輸等目標邁進，這是全球的趨勢。在這些目標當中，為了能將通訊信號順暢無礙地送達所謂的「最後一哩 (last mile)」目的地，以達成無線通訊無處不通的目標，藉著建構毫微微蜂巢(femtocell)網路環境加以完成是極佳的方法。利用家庭用femtocell蜂巢基地台置放於私有地，是解決抗爭的一者良方。再者，採正交分頻多工(orthogonal frequency division multiple, OFDM) 技術所研發之 OFDM 接取(OFDMA) 與多載波CDMA (multi-carrier code-division multiple access, MC-CDMA)系統，儼然是第四代(4th generation) 無線通訊網路技術的標準。因此，本研究針對如何有效地結合新一代無線通訊技術，OFDMA 與MC-CDMA系統，於femtocell網路環境中運作，進行研究。另外，亦將針對OFDMA/MC-CDMA 系統運作於femtocell網路環境時，系統效能中通道容量受干擾問題的影響，包括跨層同通道干擾 (cross-tier co-channel interference, CCI) 與內載波干擾 (inter-carrier interference, ICI)等等，設計適應性干擾迴避(adaptive interference avoidance) 演算法，藉以提高通訊系統的容量

關鍵詞：毫微微蜂巢、正交分頻多重接取、多載波CDMA、內載波干擾

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