基於理論效能分析MC-CDMA系統以凹型濾波器與UWB系統結合之研究 = Base on the theoretical analysis of system performance ...

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摘 要

本篇論文係在討論偏頻帶干擾（partial band interference，PBI）對結合多載波分碼多重近接(multicarrier code-division multiple-access, MC-CDMA) 系統與超寬頻(ultra-wideband, UWB)技術，也就是所謂的CDMA overlay的影響。衰落頻道(fading channel)的條件視為伽瑪分佈(Gamma distributed)，當接收強度被轉移到功率刻度時，由於Nakagami-m 分佈所導致的結果。為了緩和部分頻帶干擾的作用，MC-CDMA 採用了接收器分集(diversity)技術與帶斥濾波器(notch filter)。此外，為了比較，使用帶斥濾波器或不使用帶斥濾波器對系統性能的分析也在本論文中加以說明。值得注意的是，在帶斥濾波器被用來避免由於窄頻干擾而阻塞的次載波後，系統效能會變得較佳。而不具有帶斥濾波器多載波的接收器由於頻率分散的緣故，藉由非擁擠次載子的貢獻也能運作得很好。比較兩者，當次載子的數量比窄頻帶干擾的值大的時候，多載波系統的系統效能有顯著惡化的現象，但是其可藉由帶斥濾波器的應用來緩和。

關鍵詞 : 頻率變化;伽瑪分佈;多載波分碼多重近接;Nakagami-m 分佈;帶斥濾波器;超寬頻

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