下鏈多載波分碼多工中利用陣列天線之接收器設計

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摘 要

在本篇論文，我們在下鏈多載波分碼多工系統中利用傳送分集技術來執行接收設計。我們首先重點放在行動台盲蔽式多載波分碼多工接收器(不知道其它用戶的展頻碼及通道參數)設計，而且接收器能夠抑制多重存取干擾以及有效結合來自所有天線的信號。在本篇論文提拱三種盲蔽式接收器。第一種為傳統單用戶Matched Filter (MF)接收器，而第二種接收器以參考Minimum-Output-Energy (MOE)作為設計準則。而這兩種接收器在執行前必須知道通道脈衝響應，因此我們應用子空間盲蔽式(不須要training sequences)演算法估計利用陣列天線之下鏈多載波分碼多工系統的通道脈衝響應。第三種接收器則是不須知道通道脈衝響應的Decorrelating-RAKE (D-RAKE)接收器。 另一部份，我們執行展頻碼選擇定律使得簡單的MF接收器以達到MOE接收器的效能同時達到最佳線性接收器。最後模擬結果可以證明碼選擇定律是可行的，而且可以抵抗多重存取干擾。

關鍵詞 : 多載波分碼多工、Matched Filter (MF)、Minimum-Output-Energy (MOE)、通道脈衝響應、子空間、Decorrelating-RAKE (D-RAKE)

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