在跳時超寬頻多用戶系統中設計以訓練為基礎之行動台接收機

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摘 要

超寬頻(UWB)脈波無線電(IR)是一個新穎且有前途之短距離無線通訊，主要的特色是因為它可抵抗多重路徑衰減、且低功率，以及範圍準確之能力。本篇論文，在多用戶跳時超寬頻脈波無線電中與多路徑衰減的環境下，設定一組可能性之小筆數訓練資料，去設計盲蔽式(不曉得通道資訊及各用戶之跳時(TH)序列)行動台接收機。在多重接取干擾(MAI)及多重路徑衰減下，我們發展出兩種基於受迫性最小能量輸出(C-MOE)之二位元訊號檢測器。第一種全盲檢測器之檢測方法並沒有利用到目標用戶之跳時碼；然而第二種半盲檢測器利用目標用戶之跳時碼使接收到之訊號降低展頻維度至最大相異可解析路徑之數量，降低複雜度，再使用基於C-MOE之準則計算出權重向量進而決策位元。最後再進一步地使用一組實際之小筆訓練資料去模擬比較此兩種檢測器之效能。結果論證，我們所提出健全之檢測器接近理想值並可以有效抵抗多重接取干擾及遠近效應。

關鍵詞 : 超寬頻、跳時、多重接取干擾、受迫性最小能量輸出、遠近效應

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