OFDM系統利用SC分集工作於相關性Weibull選項衰落通道之研究

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摘 要

在這篇文章主要是研究正交分頻多工技術 (orthogonal frequency division multiplexing，OFDM) 的系統效能，利用最大合成比率 (maximal ratio combining，MRC) 以及雙分支選擇性結合(selective combining，SC) 分集的方式在相關性伽瑪correlated-Gamma和相關性瑋布 (correlated-Weibull) 的衰落上，分別地做研究。由於採用Q-函數 (Q-function) 的一替代表示結果對於取得OFDM系統的平均BER (bit error rate) 結果，所獲得的公式不只是計算式子簡易，數值分析也是達到簡單以及精確的方式呈現。因此它是值得探討OFDM系統的系統效能是明確地由傳輸環境來支配，其中在無線通訊系統顯然的取決因素，是由在Nakagami-m以及瑋布分布兩者的衰落參數來決定。再者，在SC分集的輸出端我們採用分支增益的等量 (equal) 與不等量 (unequal) 的方式來討論OFDM系統。

關鍵詞 : OFDM系統 ; 最大比例合成 (MRC) 分集 ; 選擇合成(SC)分集 ; Nakagami-m衰落 ; Weibull衰落

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