運用部份子載波群組結合壓伸技術以降低WiMAX-OFDM訊號峰對均值功率比

蔡哲瑋、李金椿

E-mail: 374641@mail.dyu.edu.tw

摘 要

本文針對WiMAX-OFDM 訊號高峰對均值功率比(Peak-to-Average Power Ratio, PAPR)的問題，提出以部份子載波群組（Partial Subcarrier Groups）傳輸方式並探討結合壓伸(Companding)技術進一步降低峰對均值功率比，同時以模擬方式評估其效能，其中評估標準根據 PAPR 超過門檻值的機率，即互補累積分佈函數(Complementary cumulative distribution function, CCDF)為基礎。 本文考慮部份子載波群組傳輸的子區塊(subblocks)三種訊號擾動方式分別為交錯、鄰近、隨機及壓縮轉換函數，評估其降低WiMAX-OFDM系統PAPR的效能。模擬結果以隨機子區塊訊號擾動方式可降低WiMAX-OFDM系統PAPR值2.4dB，再利用壓縮轉換函數可在降低0.5dB。驗證了我們所提出的方法確實可以有效降低WiMAX-OFDM系統高峰對均值功率比的問題。

關鍵詞 : 峰對均值功率比、壓伸技術、互補累積分佈函數

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