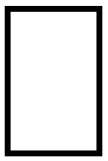
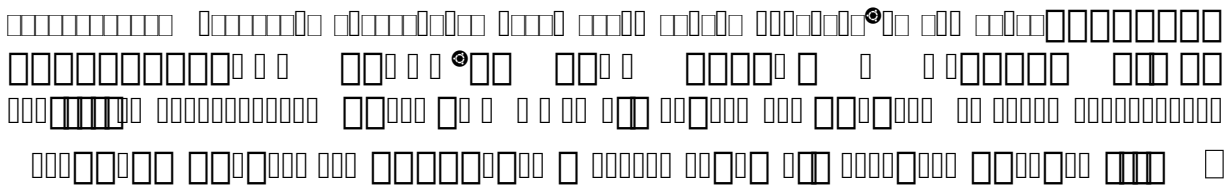
الآيـــــــــة

قال الله :





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Dedications

Dedicated to my father

To my mother

My brothers

My sisters

My friends

.And to the whole Muslim nation

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ABSTRACT

Multiple Input and Multiple Output Orthogonal Frequency Division Multiplexing (MIMO-OFDM) systems is the potential candidate for fourth generation (4G) mobile .radio communication systems

The MIMO-OFDM systems are further providing increasing in the data throughput without increasing in the bandwidth and also provide a reduction in the fading. However, the main drawback of OFDM systems is the high peak to average power ratio (PAPR).This disadvantage can be reduced by a number of methods but most of them cause an increase in the bit error rate (BER), data rate loss and an increase in the computational complexity. Thus, the coding methods have been used to reduce the PAPR. LDPC codes were one of the first codes to allow data transmission rates close to the theoretical .maximum, the Shannon limit

These codes show improved performance over an AWGN channel. In this thesis, the PAPR reduction performance with LDPC codes mainly investigated and compare the result with two different PAPR reduction methods, partial transmit sequence (PTS) and selective level mapping (SLM).Our simulation results show that

70% reduction in PAPR over original value in case of LDPC codes and 36% in case of .PTS method and 23%in case of SLM method

المستخلص

الانظمة متعددة المداخل و متعددة المخارج ذات التنضيد بتقسيم التردد المتعامد هى الانظمة المرشحة للجيل الرابع لنظام الاتصال الراديوى المتحرک.هذه الانظمة توفر مزيداً من سرعة نقل البيانات بدون زيادة فى عرض النطاق الترددى, ايضا تقلل من مشاكل الارسال اللاسلكى,ومع ذلک هنالک عيب رئيسى لانظمة التنضيد بتقسيم التردد المتعامد و هو ارتفاع فى نسبة الذروة الى متوسط القدرة.

يمكن التقليل من هذا العيب بعدة طرق ولكن معظمها يسبب زيادة فى نسبة الخطأ ويقلل سرعة نقل البيانات ويحتاج الى عمليات رياضية معقدة,وبالتالى فقد تم استخدام اساليب الترميز للتقليل من هذا العيب. شفرة LDPC هى واحدة من الشفرات التى تسمح بمعدلات نقل البيانات على مقربة من الحد الاقصى النظرى لشانون. هذه الشفرة تقدم تحسين فى الاداء عبر قناة ال AWGN .

فى هذه الاطروحة قمنا بالتحقيق بشكل رئيسى على اداء LDPC فى تقليل نسبة الذروة الى متوسط القدرة , وتمت مقارنة النتيجة مع إثنين من طرق تقليل نسبة الذروة الى متوسط القدرة (و هذه الطرق هى PTS و SLM) , والنتائج التى تحصلنا عليها من برنامج المحاكاة تبين تخفيض 70% من القيمة الاصلية لنسبة الذروة الى متوسط القدرة فى حالة شفرة LDPC و 36% فى حالة PTS و 23% فى حالة SLM .