Precoding in MIMO, OFDM to reduce PAPR (Peak to Average Power Ratio)

Time: Wednesday 18 April 11-12
Room: B3033
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Abstract:
One of the critical issues of systems utilizing Orthogonal Frequency Division Multiplexing (OFDM) is the high peak to average power ratio of OFDM signals. We have used Precoding as a way to mitigate the PAPR problem. Also the performance of Precoded OFDM in fading multi-path channels has also been studied. This thesis is based on an efficient technique for reducing the PAPR of OFDM signals. The proposed technique is data-independent and thus, does not require new processing and optimization for each transmitted OFDM block. The reduction in PAPR of the OFDM signal is obtained through a proper selection of a Precoding scheme that distributes the power of each modulated symbol over the OFDM block. The obtained results show that this Precoding scheme is an attractive solution to the PAPR problem of OFDM signals.