

PERFORMANCE ANALYSIS OF PRECODED OFDM FOR COGNITIVE RADIO IN NOISY AND MULTIPATH CHANNELS

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ABSTRACT

The wireless spectrum being an scanty resource, needs to cater up for stipulated number of devices. But with wireless devices becoming pervasive, the provision of spectrum for such a substantial number seems to be an daunting task. Cognitive radio is a technology which uses the spectrum smartly by either sensing the spectrum hole in order to transmit the data or by sharing the available spectrum among two or more users. Hence cognitive radio is indispensable for the spectrum prerequisites. But the main problem is the phenomenon of cognitive interference. Precoded (Orthogonal Frequency Division Multiplexing) OFDM is found to have eliminate the interference by such a way that it gets cancelled as it is propagated. This work comprises of the analysis of BER performance of the Precoded system in AWGN, Rayleigh and Rician channels using MATLAB.

KEYWORDS: OFDM, Cognitive Radio, Dynamic Spectrum Usage, Overlay Networks, Precoding