

COGNITIVE RADIOS – SPECTRUM SENSING ISSUES

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ABSTRACT

Cognitive Radio can smartly senses and adapts with the changing environment by altering its transmitting parameters, such as modulation, frequency, frame format etc. The main challenges with cognitive radios are that it should not interfere with the licensed users and should vacate the band when required. For this it should sense the signals faster. For this purpose various detection schemes like energy detector, matched filter and cyclostationary feature detector are discussed in this report and performance evaluation of these is calculated. Besides this a performance evaluation is done between cooperative and non cooperative spectrum sensing schemes which uses Amplify-and-Forward algorithm is also discussed. All simulations are done in MATLAB.