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## Abstract

In recent years there has been an enormous growth in wireless communication devices and wireless users. Fulfillment of the demand requires the availability of the spectrum. Spectrum is a valuable resource in communication. So to fulfill the demand we either need more spectrums or make efficient use of current available spectrum. But as spectrum resources are limited we need to use them efficiently. It is impossible to use spectrum efficiently with the static spectrum allocation policy. Due to this static policy most of the spectrum remains underutilized. To use spectrum efficiently we need to use Dynamic Spectrum Allocation Policy. Cognitive Radio Technology is used to solve the problem in wireless networks resulting from the limited

available spectrum and the inefficiency in the spectrum usage by exploiting the existing wireless spectrum opportunistically. Sensing of spectrum availability has been identified as a key requirement for dynamic spectrum allocation in cognitive radio networks. There are different Spectrum sensing techniques at physical layer such as Matched Filter detection, Energy detection and Cyclostationary Feature detection. In this paper we are presenting a performance analysis of these three techniques with variable gamma value. Simulation is done in MATLAB software

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### Index Terms

Computer Science

Data Communication

**Keywords**

Cognitive Radio System Pu Snr Cr Cyclostationary Receiver Operation Characteristics.