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International Journal of Engineering and Advanced Technology
Volume 8, Issue 2, January 2019, Pages 284-287

Diversity technique using discrete wavelet transform in OFDM system (Article)

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Abstract

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Spectrum usage due to an increasing number of mobile users using services like audio, video, and images is one of the challenges for wireless communication. Orthogonal Frequency Division Multiplexing (OFDM) is one of the promising techniques to increase spectral efficiency. However, the conventional OFDM using fast Fourier transform (FFT) still has the drawback of reducing spectral efficiency. Discrete wavelet transforms (DWT) has been used as an alternative method replacing FFT to increase the spectral efficiency. This paper presents the fundamental of wavelets and their significance in wireless communication. A review of the literature has been done on how the DWT-OFDM performs better when compared to FFT-OFDM and on diversity technique such as transmit and receive diversity. The advantages of using diversity at both receiver and transmitter, i.e., Multiple inputs and multiple output systems and the overview of the technique is also considered. The flexibility, improve in the performance of BER, mitigate the interference DWT-OFDM with diversity at both transmitter and receiver provides emerging technology for future generation. © 2019, Blue Eyes Intelligence Engineering and Sciences Publication. All rights reserved.

SciVal Topic Prominence

Topic: Orthogonal frequency division multiplexing | Discrete wavelet transforms | Wavelet packet

Prominence percentile: 63.664 

Author keywords

[BER](#) [DWT](#) [FFT](#) [OFDM](#)

ISSN: 22498958

Source Type: Journal

Original language: English

Document Type: Article

Publisher: Blue Eyes Intelligence Engineering and Sciences Publication

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