

# Image Compression Based on FFT and DWT Approach

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## Abstract

*The modern era is of digitalization and thus we want to transmit large data in limited bandwidth. Today a variety of computer, scientific and engineering application have difficulty to store and transmit the large size images. To solve this problem image compression techniques are used. Two-dimensional Fourier transform (2D-FT) is used for representing an image. But, the energy of the coefficients of 2D-FT on the complex image distributes in the whole frequency domain also. Typically, the frequency signals are divided into two parts, i.e., real and imaginary parts. FFT is used for converting the image into a real image before applying it to DWT. A Wavelet transform gives very strong de correlation ability and can be used for local analysis in time and frequency with different scales. Wavelet transform have also been applied to complex image compression, as it is suitable for non-stationary signal processing. So, we can use FFT-DWT combine approach for image compression. This system aims at the analysis of compression using FFT-DWT by selecting proper threshold method, better result for PSNR have been obtained. This paper analyzes the amount of compression by compression ratio with the analysis of quality of image using Mean Square Error (MSE) and Peak Signal to Noise Ratio (PSNR). Extensive experimentation has been carried out to arrive at the conclusion.*