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Abstract

Nowadays, various types of attacks are imposed to multimedia during transmission. Also in many applications the security of information is very important. So the information encryption has become an important issue. Many encryption techniques have been proposed to achieve high robustness against different types of attacks and to save information from hackers. In this paper, a new chaotic based optical encryption that depends on Discrete Wavelet Transform (DWT) for image transformation will be introduced for color image encryption. Nine chaotic maps have been used in the proposed technique; eight of them were traditional and one is a new proposed map. As a result of extensive simulation results depending on various performance metrics it has been found that the proposed technique has given better robustness comparing to traditional algorithm.

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Index Terms

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Double Random Phase Encoding (DRPE), Fast Fourier Transform (FFT), Discrete Wavelet Transform (DWT), Inverse Discrete Wavelet Transform (IDWT).