Abstract

The study of cryptography applications in chaotic system have been exponentially increasing in the recent years. Depending on the sensitivity to initial conditions, chaotic systems are characterized, similarity to continuous broad-band power spectrum and random behavior. The chaotic system is high sensitive to the initial condition and is a high complex nonlinear dynamic system. The chaotic sequence is unpredictable and extreme sensitivity to initial conditions. There are many applications to the chaotic system in several methods, image compression, encryption, modulation and digital communication system. In this paper, an algorithm based on Discrete Cosine Transform (DCT) has been introduced by using Henon map to get the scheme of chaos image encryption. The level of security is very high and this algorithm can improve small key space.

A new chaotic algorithm is presented to get rid of the problem of the weakness of security in one dimensional chaotic cryptosystems and small key space based on a new chaotic algorithm, which uses two dimension linear functions instead of one dimension.
Chaos Image Encryption based on DCT Transforms and Henon Map

References


Index Terms

Computer Science Image Processing

Keywords

Chaos theory, chaotic encryption, AES, DWT, image encryption