

A Two-Channel Secure Communication Using Fractional Chaotic Systems

許隆結, Wei Ching Chen, Yen Chu Chen, Wei Tai Weng

Mechanical Engineering

Engineering

ljsheu@chu.edu.tw

Abstract

In this paper, a two-channel secure communication using fractional chaotic systems is presented. Conditions for chaos synchronization have been investigated theoretically by using Laplace transform. To illustrate the effectiveness of the proposed scheme, a numerical example is presented. The keys, key space, key selection rules and sensitivity to keys are discussed in detail. Results show that the original plaintexts have been well masked in the ciphertexts yet recovered faithfully and efficiently by the present schemes.

Keyword : fractional chaotic systems, synchronization, secure