

A Spatiotemporal -Chaos-Based Encryption Having Overall Properties Considerably Better than Advanced Encryption Standard

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(Received: 2003-3-28; Revised:)

Abstract: Spatiotemporal chaos of a two-dimensional one-way coupled map lattice is used for chaotic cryptography. The chaotic outputs of many space units are used for encryption simultaneously. This system shows satisfactory cryptographic properties of high security, fast encryption (decryption) speed, and robustness against noise disturbances in communication channel. The overall features of this spatiotemporal-chaos-based cryptosystem are better than chaotic cryptosystems known so far, and also than currently used conventional cryptosystems, such as the Advanced Encryption Standard (AES).

PACS: 05.45.Vx, 05.45.Ra, 43.72.+q

Key words: spatiotemporal chaos, chaos synchronization, chaos secure communication

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