A Self-synchronizing Stream Encryption Scheme Based on One-Dimensional Coupled Map Lattices

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Abstract: We present a self-synchronizing stream encryption scheme based on one-dimensional coupled map lattices, which is introduced as a model with the essential features of spatiotemporal chaos, and of great complexity and diffusion capability of the little disturbance in the initial condition. To evaluate the scheme, a series of statistical tests are employed, and the results show good random-look nature of the ciphertext. Furthermore, we apply our algorithm to encrypt a grey-scale image to show the key sensitivity.

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