A Chaos-based Image Encryption Scheme using Chaotic Coupled Map Lattices

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Abstract

In this letter, after reviewing the main points of the chaotic trigonometric maps and the coupled map lattices, we introduce the scheme of chaos-based image encryption based on coupled map lattices. The scheme decreases periodic effect of the ergodic dynamical systems in the chaos-based image encryption. To evaluate the security of the encrypted image of this scheme, the key space analysis, the correlation of two adjacent pixels and differential attack were performed. This scheme tries to improve the problem of failure of encryption such as small key space and level of security.

References

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Index Terms

- Computer Science
- Information Security
Keywords

function  Image encryption  Coupled map lattice  Chaotic trigonometric map