

Full text at publisher



Export ▾

Add To Marked List

< 1 of 1 >

Image encryption using 2D Logistic-adjusted-Sine map

By: [Hua, ZY](#) (Hua, Zhongyun) ^[1]; [Zhou, YC](#) (Zhou, Yicong) ^[1]

[View Web of Science ResearcherID and ORCID](#) (provided by Clarivate)

INFORMATION SCIENCES

Volume: 339 Page: 237-253

DOI: 10.1016/j.ins.2016.01.017

Published: APR 20 2016

Indexed: 2016-04-20

Document Type: Article

Abstract

With complex properties of ergodicity, unpredictability and sensitivity to initial states, chaotic systems are widely used in cryptography. This paper proposes a two-dimensional Logistic-adjusted-Sine map (2D-LASM). Performance evaluations show that it has better ergodicity and unpredictability, and a wider chaotic range than many existing chaotic maps. Using the proposed map, this paper further designs a 2D-LASM-based image encryption scheme (LAS-IES). The principle of diffusion and confusion are strictly fulfilled, and a mechanism of adding random values to plain-image is designed to enhance the security level of cipher-image. Simulation results and security analysis show that LAS-IES can efficiently encrypt different kinds of images into random-like ones that have strong ability of resisting various security attacks. (C) Elsevier Inc. All rights reserved.

Keywords

Author Keywords: [Chaotic map](#); [Chaotic encryption](#); [Confusion and diffusion](#); [Image encryption](#)

Keywords Plus: [CHAOTIC SYSTEM](#); [KOLMOGOROV-ENTROPY](#); [SCHEME](#); [ALGORITHM](#); [CRYPTANALYSIS](#); [CIPHERS](#); [BREAKING](#)

Author Information

Corresponding Address: Zhou, Yicong (corresponding author)

▼ Univ Macau, Dept Comp & Informat Sci, Macau 999078, Peoples R China

Addresses:

▼ ¹ Univ Macau, Dept Comp & Informat Sci, Macau 999078, Peoples R China

E-mail Addresses: huazyum@gmail.com; yicongzhou@umac.mo

Categories/Classification

Research Areas: Computer Science

International Patent Classification *From Inspec®* ▾

Subject Classification codes *From Inspec®* ▾

CODEN *From Inspec®* ▾

Citation Network

In Web of Science Core Collection

355

Citations

Highly Cited

Create citation alert

363

Times Cited in All Databases

52

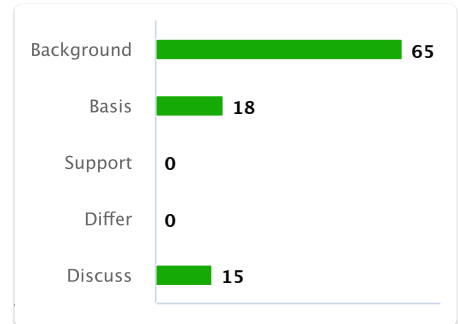
Cited References

[View Related Records](#)

+ See more times cited

Citing items by classification New

Breakdown of how this article has been mentioned, based on available citation context data and snippets from 76 citing item(s).



Riyahi, M; Rafsanjani, MK; Motevalli, R; [A novel image encryption scheme based on multi-directional diffusion technique and integrated chaotic map](#) NEURAL COMPUTING & APPLICATIONS

Albahrani, EA; Maryoosh, AA; Lafta, SH; [Block image encryption based on modified playfair and chaotic system](#) JOURNAL OF INFORMATION SECURITY AND APPLICATIONS

Hua, ZY; Zhou, YC; Chen, CLP; et al. [2D Sine Logistic modulation map for image encryption](#) INFORMATION SCIENCES

Lambic, D; Nikolic, M;



Controlled Terms *From Inspec®* Uncontrolled Terms *From Inspec®* **Funding**

Funding agency	Grant number
Macau Science and Technology Development Fund	FDCT/016/2015/A1
Research Committee at University of Macau	MYRG2014-00003-FST
	MYRG113 (Y1-L3)-FST12-ZYC
	MRG001/ZYC/2013/FST

Funding Table

[View funding text](#)[+ See more data fields](#)[New Pseudo-Random Number Generator Based on Improved Discrete-Space Chaotic Map](#)

FILOMAT

Jain, R; Sharma, JB;

[Symmetric Color Image Encryption Algorithm using Fractional DRPM and Chaotic Baker Map](#)

2016 IEEE INTERNATIONAL CONFERENCE ON RECENT TRENDS IN ELECTRONICS, INFORMATION & COMMUNICATION TECHNOLOGY (RTEICT)

[See all](#)**Most Recently Cited by**

Wang, XY; Guan, NA; Liu, PB;

[A selective image encryption algorithm based on a chaotic model using modular sine arithmetic](#)

OPTIK

Zhang, XQ; Tian, JX;

[Multiple-image encryption algorithm based on genetic central dogma](#)

PHYSICA SCRIPTA

[See all](#)**Journal information**[INFORMATION SCIENCES](#)

ISSN: 0020-0255

eISSN: 1872-6291

Current Publisher: ELSEVIER SCIENCE INC, STE 800, 230 PARK AVE, NEW YORK, NY 10169

Journal Impact Factor: [Journal Citation Report™](#)

Research Areas: Computer Science

Web of Science Categories: Computer Science, Information Systems

6.795

Journal Impact Factor™ (2020)

Use in Web of Science

Web of Science Usage Count

28

Last 180 Days

223

Since 2013

[Learn more](#)**This record is from:**

Web of Science Core Collection

- Science Citation Index Expanded (SCI-EXPANDED)

Suggest a correction

If you would like to improve the quality of the data in this record, please [Suggest a correction](#)

52 Cited References

Showing 30 of 52

[View as set of results](#)

(from Web of Science Core Collection)

