Accepted Manuscript

Title: A novel chaotic system with heart–shaped equilibrium and its circuital implementation

Author: Viet-Thanh Pham Sajad Jafari Christos Volos

PII: S0030-4026(16)31390-0

DOI: http://dx.doi.org/doi:10.1016/j.ijleo.2016.11.064

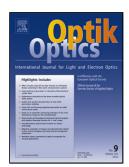
Reference: IJLEO 58479

To appear in:

Received date: 17-9-2016 Accepted date: 11-11-2016

Please cite this article as: VietndashThanh Pham, Sajad Jafari, Christos Volos, A novel chaotic system with heartndashshaped equilibrium and its circuital implementation, <![CDATA[Optik - International Journal for Light and Electron Optics]]> (2016), http://dx.doi.org/10.1016/j.ijleo.2016.11.064

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



ACCEPTED MANUSCRIPT

A novel chaotic system with heart—shaped equilibrium and its circuital implementation

Viet–Thanh Pham^{a,*}, Sajad Jafari^b, Christos Volos^c

^aSchool of Electronics and Telecommunications, Hanoi University of Science and Technology, 01 Dai Co Viet, Hanoi, Vietnam

^bBiomedical Engineering Department, Amirkabir University of Technology, Tehran 15875-4413, Iran

 $^c Department\ of\ Physics,\ Aristotle\ University\ of\ Thessaloniki,\ Thessaloniki,\ GR-54124,\\ Greece$

Abstract

For the past five years there has been much attention to systems with uncountable equilibria. This work introduces a new system with an infinite number of equilibrium points. It is worth noting that equilibrium points, which located on a heart–shaped curve, lead the presence of hidden attractors in the system. By using phase portraits, bifurcation diagram, maximal Lyapunov exponents, dynamics of the system have been investigated. Moreover, an electronic implementation is proposed to illustrate the feasibility of the theoretical system.

Keywords: Chaos, Equilibrium, Heart–shaped, Hidden attractor, Electronic circuit

Preprint submitted to Optik

November 12, 2016

^{*}Corresponding author

 $^{{\}it Email~address:}~ {\tt thanh.phamviet@hust.edu.vn,~pvt3010@gmail.com~(Viet-Thanh~Pham)}$

Download English Version:

https://daneshyari.com/en/article/5025944

Download Persian Version:

https://daneshyari.com/article/5025944

<u>Daneshyari.com</u>