

Accepted Manuscript

Multiscale recurrence quantification analysis of order recurrence plots

Mengjia Xu, Pengjian Shang, Aijing Lin

PII: S0378-4371(16)30864-0

DOI: <http://dx.doi.org/10.1016/j.physa.2016.11.058>

Reference: PHYSA 17714

To appear in: *Physica A*

Received date: 30 July 2016

Revised date: 8 October 2016

Please cite this article as: M. Xu, P. Shang, A. Lin, Multiscale recurrence quantification analysis of order recurrence plots, *Physica A* (2016), <http://dx.doi.org/10.1016/j.physa.2016.11.058>

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.



*Manuscript

[Click here to view linked References](#)

Multiscale recurrence quantification analysis of order recurrence plots

Mengjia Xu *, Pengjian Shang, Aijing Lin

Department of Mathematics, School of Science, Beijing Jiaotong University, Beijing 100044, PR China

Abstract

In this paper, we propose a new method of multiscale recurrence quantification analysis (MSRQA) to analyze the structure of order recurrence plots. The MSRQA is based on order patterns over a range of time scales. Compared with conventional recurrence quantification analysis (RQA), the MSRQA can show richer and more recognizable information on the local characteristics of diverse systems which successfully describes their recurrence properties. Both synthetic series and stock market indexes exhibit their properties of recurrence at large time scales that quite differ from those at a single time scale. Some systems present more accurate recurrence patterns under large time scales. It demonstrates that the new approach is effective for distinguishing three similar stock market systems and showing some inherent differences.

Keywords: Multiscale, Recurrence quantification analysis, Order recurrence plot, Dynamical system

*Corresponding author. E-mail: 10271112@bjtu.edu.cn

Download English Version:

<https://daneshyari.com/en/article/5103375>

Download Persian Version:

<https://daneshyari.com/article/5103375>

[Daneshyari.com](https://daneshyari.com)