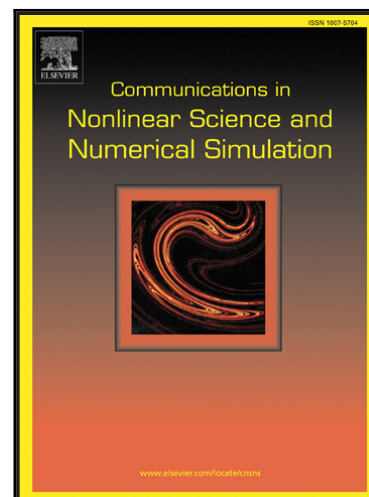


## Accepted Manuscript

Takens–Bogdanov bifurcations of equilibria and periodic orbits in the Lorenz system

A. Algaba, M.C. Domínguez-Moreno, M. Merino, A.J. Rodríguez-Luis

PII: S1007-5704(15)00242-7  
DOI: [10.1016/j.cnsns.2015.06.034](https://doi.org/10.1016/j.cnsns.2015.06.034)  
Reference: CNSNS 3604



To appear in: *Communications in Nonlinear Science and Numerical Simulation*

Received date: 18 March 2015  
Revised date: 29 May 2015  
Accepted date: 28 June 2015

Please cite this article as: A. Algaba, M.C. Domínguez-Moreno, M. Merino, A.J. Rodríguez-Luis, Takens–Bogdanov bifurcations of equilibria and periodic orbits in the Lorenz system, *Communications in Nonlinear Science and Numerical Simulation* (2015), doi: [10.1016/j.cnsns.2015.06.034](https://doi.org/10.1016/j.cnsns.2015.06.034)

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.

**Highlights**

- We study Lorenz system in a region with negative parameters and physical interest.
- A Takens-Bogdanov bifurcation of equilibria is analyzed.
- Torus and Takens-Bogdanov bifurcations of periodic orbits are detected.
- Several codimension-two and three global bifurcations act as organizing centers.
- Some conclusions on the Chen and Lü systems are also trivially obtained.

ACCEPTED MANUSCRIPT

Download English Version:

<https://daneshyari.com/en/article/7155287>

Download Persian Version:

<https://daneshyari.com/article/7155287>

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