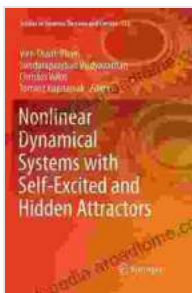


# Nonlinear Dynamical Systems With Self-Excited And Hidden Attractors: Studies In Complexity, Volume 1

Nonlinear dynamical systems are systems that exhibit nonlinear behavior. This means that the output of the system is not proportional to the input. Nonlinear dynamical systems are found in a wide variety of applications, including engineering, physics, biology, and economics.



## Nonlinear Dynamical Systems with Self-Excited and Hidden Attractors (Studies in Systems, Decision and Control Book 133)

★★★★★ 5 out of 5

Language : English  
File size : 74488 KB  
Text-to-Speech : Enabled  
Enhanced typesetting : Enabled  
Print length : 874 pages  
Screen Reader : Supported



One of the most interesting aspects of nonlinear dynamical systems is the presence of attractors. Attractors are sets of points in the system's state space that attract nearby trajectories. This means that if a trajectory starts out near an attractor, it will eventually converge to the attractor.

There are two main types of attractors: self-excited attractors and hidden attractors. Self-excited attractors are attractors that are created by the

system's own dynamics. Hidden attractors are attractors that are not visible in the system's state space.

Self-excited attractors are relatively easy to find. They are typically located in the center of the system's state space. Hidden attractors, on the other hand, are much more difficult to find. They are often located in remote regions of the state space.

The presence of hidden attractors in nonlinear dynamical systems can have a significant impact on the system's behavior. For example, hidden attractors can cause the system to exhibit chaotic behavior.

### **Nonlinear Dynamical Systems with Self-Excited and Hidden Attractors**

The book *Nonlinear Dynamical Systems with Self-Excited and Hidden Attractors: Studies in Complexity, Volume 1* is a comprehensive exploration of nonlinear dynamical systems, with a particular focus on self-excited and hidden attractors. This book provides a thorough to the theoretical foundations of nonlinear dynamics, as well as a detailed examination of the various types of attractors that can arise in these systems.

The book is divided into three parts. The first part provides an overview of the basic concepts of nonlinear dynamics. The second part examines self-excited attractors, while the third part examines hidden attractors.

The book is written by a team of experts in the field of nonlinear dynamics. The authors have a wealth of experience in both theoretical and applied research. This book is a valuable resource for researchers, students, and practitioners who are interested in nonlinear dynamical systems.

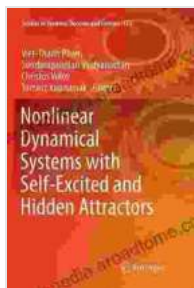
### **Applications of Nonlinear Dynamical Systems**

Nonlinear dynamical systems have a wide range of applications in engineering, physics, biology, and economics. Some of the most common applications include:

\* Control systems \* Robotics \* Signal processing \* Image processing \* Finance \* Meteorology

Nonlinear dynamical systems are also used to model a variety of natural phenomena, such as weather patterns, population dynamics, and the spread of disease.

Nonlinear dynamical systems are a fascinating and complex subject. This book provides a comprehensive exploration of these systems, with a particular focus on self-excited and hidden attractors. This book is a valuable resource for researchers, students, and practitioners who are interested in nonlinear dynamical systems.



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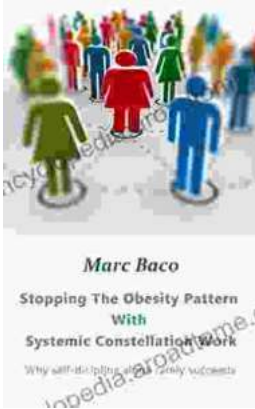
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