



Stability Regions of Nonlinear Dynamical Systems: Theory, Estimation, and Applications

By Hsiao-Dong Chiang, Luís F. C. Alberto

 Download

 Read Online

 Get Print Book

Stability Regions of Nonlinear Dynamical Systems: Theory, Estimation, and Applications By Hsiao-Dong Chiang, Luís F. C. Alberto

This authoritative treatment covers theory, optimal estimation and a range of practical applications. The first book on the subject, and written by leading researchers, this clear and rigorous work presents a comprehensive theory for both the stability boundary and the stability regions of a range of nonlinear dynamical systems including continuous, discrete, complex, two-time-scale and non-hyperbolic systems, illustrated with numerical examples. The authors also propose new concepts of quasi-stability region and of relevant stability regions and their complete characterisations. Optimal schemes for estimating stability regions of general nonlinear dynamical systems are also covered, and finally the authors describe and explain how the theory is applied in applications including direct methods for power system transient stability analysis, nonlinear optimisation for finding a set of high-quality optimal solutions, stabilisation of nonlinear systems, ecosystem dynamics, and immunisation problems.

 [Download Stability Regions of Nonlinear Dynamical Systems: ...pdf](#)

 [Read Online Stability Regions of Nonlinear Dynamical Systems ...pdf](#)

Stability Regions of Nonlinear Dynamical Systems: Theory, Estimation, and Applications

By Hsiao-Dong Chiang, Luís F. C. Alberto

Stability Regions of Nonlinear Dynamical Systems: Theory, Estimation, and Applications By Hsiao-Dong Chiang, Luís F. C. Alberto

This authoritative treatment covers theory, optimal estimation and a range of practical applications. The first book on the subject, and written by leading researchers, this clear and rigorous work presents a comprehensive theory for both the stability boundary and the stability regions of a range of nonlinear dynamical systems including continuous, discrete, complex, two-time-scale and non-hyperbolic systems, illustrated with numerical examples. The authors also propose new concepts of quasi-stability region and of relevant stability regions and their complete characterisations. Optimal schemes for estimating stability regions of general nonlinear dynamical systems are also covered, and finally the authors describe and explain how the theory is applied in applications including direct methods for power system transient stability analysis, nonlinear optimisation for finding a set of high-quality optimal solutions, stabilisation of nonlinear systems, ecosystem dynamics, and immunisation problems.

Stability Regions of Nonlinear Dynamical Systems: Theory, Estimation, and Applications By Hsiao-Dong Chiang, Luís F. C. Alberto **Bibliography**

- Sales Rank: #3006675 in Books
- Published on: 2015-10-01
- Original language: English
- Number of items: 1
- Dimensions: 9.72" h x 1.06" w x 6.85" l, 2.39 pounds
- Binding: Hardcover
- 484 pages

 [Download Stability Regions of Nonlinear Dynamical Systems: ...pdf](#)

 [Read Online Stability Regions of Nonlinear Dynamical Systems ...pdf](#)

Download and Read Free Online Stability Regions of Nonlinear Dynamical Systems: Theory, Estimation, and Applications By Hsiao-Dong Chiang, Luís F. C. Alberto

Editorial Review

About the Author

Hsiao-Dong Chiang is Professor of Electrical and Computer Engineering at Cornell University, New York, President of Bigwood Systems, Inc. (BSI), Ithaca, New York and President of Global Optimal Technology, Inc. (GOTI). He is a Fellow of the IEEE.

Luís F. C. Alberto is an Associate Professor at the Electrical Engineering Department of the School of Engineering of Sao Carlos, University of São Paulo and a director of the SBA (Brazilian Society of Automation) 2013-14.

Users Review

From reader reviews:

David Shetler:

The book *Stability Regions of Nonlinear Dynamical Systems: Theory, Estimation, and Applications* gives you the sense of being enjoy for your spare time. You may use to make your capable more increase. Book can to get your best friend when you getting stress or having big problem with the subject. If you can make studying a book *Stability Regions of Nonlinear Dynamical Systems: Theory, Estimation, and Applications* to become your habit, you can get considerably more advantages, like add your current capable, increase your knowledge about several or all subjects. You can know everything if you like wide open and read a reserve *Stability Regions of Nonlinear Dynamical Systems: Theory, Estimation, and Applications*. Kinds of book are a lot of. It means that, science reserve or encyclopedia or other folks. So , how do you think about this book?

Janelle Garrity:

Hey guys, do you wants to finds a new book you just read? May be the book with the concept *Stability Regions of Nonlinear Dynamical Systems: Theory, Estimation, and Applications* suitable to you? The particular book was written by well known writer in this era. The actual book untitled *Stability Regions of Nonlinear Dynamical Systems: Theory, Estimation, and Applications* is a single of several books this everyone read now. This kind of book was inspired many men and women in the world. When you read this e-book you will enter the new way of measuring that you ever know previous to. The author explained their plan in the simple way, and so all of people can easily to understand the core of this reserve. This book will give you a great deal of information about this world now. So you can see the represented of the world in this particular book.

George Pinard:

The publication with title *Stability Regions of Nonlinear Dynamical Systems: Theory, Estimation, and Applications* has lot of information that you can learn it. You can get a lot of advantage after read this book. This specific book exist new expertise the information that exist in this e-book represented the condition of

the world now. That is important to you to understand how the improvement of the world. This particular book will bring you within new era of the global growth. You can read the e-book with your smart phone, so you can read it anywhere you want.

Ella Straw:

Typically the book *Stability Regions of Nonlinear Dynamical Systems: Theory, Estimation, and Applications* has a lot of information on it. So when you read this book you can get a lot of help. The book was authored by the very famous author. McDougal makes some research before write this book. This book very easy to read you can obtain the point easily after perusing this book.

Download and Read Online Stability Regions of Nonlinear Dynamical Systems: Theory, Estimation, and Applications By Hsiao-Dong Chiang, Luís F. C. Alberto #KZ4S280Y65T

Read Stability Regions of Nonlinear Dynamical Systems: Theory, Estimation, and Applications By Hsiao-Dong Chiang, Luís F. C. Alberto for online ebook

Stability Regions of Nonlinear Dynamical Systems: Theory, Estimation, and Applications By Hsiao-Dong Chiang, Luís F. C. Alberto Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Stability Regions of Nonlinear Dynamical Systems: Theory, Estimation, and Applications By Hsiao-Dong Chiang, Luís F. C. Alberto books to read online.

Online Stability Regions of Nonlinear Dynamical Systems: Theory, Estimation, and Applications By Hsiao-Dong Chiang, Luís F. C. Alberto ebook PDF download

Stability Regions of Nonlinear Dynamical Systems: Theory, Estimation, and Applications By Hsiao-Dong Chiang, Luís F. C. Alberto Doc

Stability Regions of Nonlinear Dynamical Systems: Theory, Estimation, and Applications By Hsiao-Dong Chiang, Luís F. C. Alberto Mobipocket

Stability Regions of Nonlinear Dynamical Systems: Theory, Estimation, and Applications By Hsiao-Dong Chiang, Luís F. C. Alberto EPub