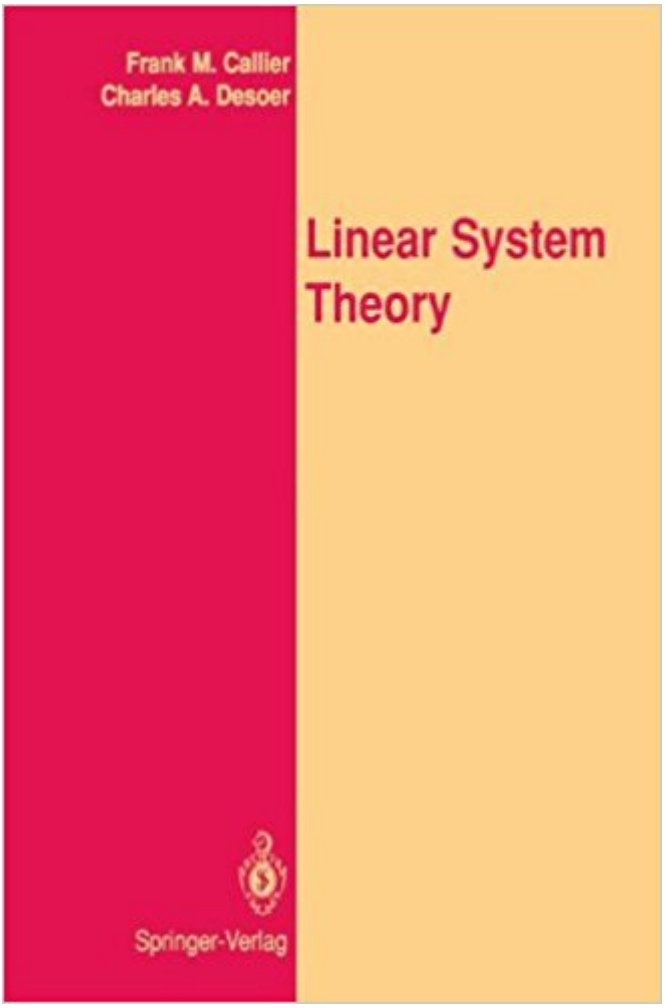
Linear System Theory (Springer Texts In Electrical Engineering)



Synopsis

This book is the result of our teaching over the years an undergraduate course on Linear Optimal Systems to applied mathematicians and a first-year graduate course on Linear Systems to engineers. The contents of the book bear the strong influence of the great advances in the field and of its enormous literature. However, we made no attempt to have a complete coverage. Our motivation was to write a book on linear systems that covers finiteÂ- dimensional linear systems, always keeping in mind the main purpose of engineering and applied science, which is to analyze, design, and improve the performance of phyÂ- sical systems. Hence we discuss the effect of small nonlinearities, and of perturbations of feedback. It is our on the data; we face robustness issues and discuss the properties hope that the book will be a useful reference for a first-year graduate student. We assume that a typical reader with an engineering background will have gone through the conventional undergraduate single-input single-output linear systems course; an elementary course in control is not indispensable but may be useful for motivation. For readers from a mathematical curriculum we require only familiarity with techniques of linear algebra and of ordinary differential equations.

Book Information

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Customer Reviews

I bought this book thinking it would be a in depth (but standard) coverage of state space techniques. Not quite! It is a very deep and detailed exposition on system theory from a fundamental and abstract point of view. The book requires a mature view on linear dynamical systems and state

space methods and still it will prove to be heavy-going for most readers. If you are after an advanced book on state space methods, this is NOT the book.

I can’t comment on the prior reviews given here except to say the my experience with the text is so orthogonal the these opinions that I though I should write a review. If you like your books terse, mathematically precise, rigorous, and without anything resembling hand holding or coaching then by all means this is your book. I have to disagree that there is minimal mathematical preparation required. I would suggest a very rigorous linear algebra background and a working knowledge of state space differential eqn before you try this one. If you are an academic who wants hair splitting precise buildup of the theory then its for you. If you just start grad school and taking first level linear system class I have recommend against this book. Brogan is must have for starters but it could use a little more mathematical rigor and depth. Throw these two books into a blender and you just might have the ideal one. Someone please write a rigorous linear system text that is readable as a stand alone book please. I suggest Brogan update his.

grat book.

This book serves as an excellent textbook for introductory graduate course in control theory. It is very well written with unambiguous statements and rigorous logic. I found it very enjoyable and was quite amazed by the theory in it. It still serves as a useful handbook to me right now.Not much background in math/control is required, but some basic knowledge in matrix is helpful. For those who have completely forgotten their freshman-year algebra course, appendices are provided with concise content and useful conclusions. So it does not take long to refresh.

In contrast of that comments a reader in review of the excellent book "Linear System Theory" by C. T. Chen, a book of linear systems theory five star exists, and this is the book! Reference, textbook, as much for undergraduate as for graduate, definitively, the best!

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