set up and obtain practical solutions to the resulting optimization/approximation problems.

3. CONCLUSIONS

This book is the first to offer a comprehensive coverage of the developments in the $\mathscr{H}_\infty$ Control-Oriented Identification and Model (In) Validation fields that have taken place since the early 1990s. In addition, it includes background material to make it largely self-contained. Thus, it is valuable both to researchers entering the field and as a reference to those already working in it.

Perhaps, the main drawback of the book is its lack of practical examples, even though identification is an eminently experimental subject. Thus, many practical issues, ranging from how to solve the resulting problems using commercially available code to experiment design, estimation of the *a priori* information and the trade off between experiment length and conditioning of the problem, are not addressed. To some extent, this limits the usefulness of the book for control practitioners.

As a textbook, the book will be very useful for an advanced course on control-oriented identification, as a follow up to a robust control one, with the caveat noted above about the need to add some additional material on practical considerations and the use of Matlab.

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(DOI: 10.1002/rnc.733)

STABILITY AND STABILIZATION OF INFINITE-DIMENSIONAL SYSTEMS WITH APPLICATIONS, Z-H. Luo, B-Z. Guo and O. Morgul, Springer, London, U.K. 1999, xi + 403pp.

As the title of this book indicates the emphasis of this book is on stability and stabilization of infinite-dimensional systems, i.e. partial differential equations (p.d.e.).

There are basically three methods for checking the stability of a (linear) p.d.e. One can calculate its spectrum, construct a Lyapunov function, or show that for all s-with real part larger than zero-the resolvent of the associated infinitesimal generator is uniformly bounded. This last method will show stability without any extra assumptions, provided the underlying state space is a Hilbert space. The stability of the spectrum will only prove stability of the system when the system satisfies the spectrum-determined growth assumption, whereas when using a Lyapunov function most of the time one needs LaSalle's principle, for which one additionally needs the pre-compactness of the orbits. The nice feature of this book is that all three methods are explained and applied in full detail. The theory and the applications naturally divide the book into two parts. In the first part. Chapter 2 and 3, the basic concepts like semigroup theory and stability are discussed. Most of the results given in these chapters are well known and can be found in many textbooks. However, the authors add some new results. For instance, the section on integrated semigroups gives a nice overview of this subject.

In the second part of the book, the last three chapters, the results of the first part are applied to several p.d.e.s. This, however, does not mean that these chapters do not contain interesting theoretical results. For instance, in Chapter 4 the concept of A-depended operator, (the product of a self-adjoint, non-negative, bounded operator and the infinitesimal generator) is introduced, whereas in Chapter 5 there are general results on passivity.

Because of its basic set-up, this book is suitable for a graduate course. However, it is a pity that the authors have not included a set of exercises. Furthermore, the authors have restricted their examples to p.d.e.s. in one spatial dimension. Hence it is not clear which of the presented methods is most appropriate for higher-dimensional systems. Seeing the long proofs on the asymptotic behaviour of the spectrum or on the growth of the resolvent, for these relative simple examples, one wonders if these estimates are still possible for more complicated systems.

Concluding, this book treats in full detail the stability and stabilizability of some p.d.e., and hence bridges the gap between the book of Curtain and Zwart [1] (there only simple p.d.e.'s with a one-dimensional spatial variable are considered) and the books of Bensoussan *et al.* [2, 3], and the recent books of Lasiecka and Triggiani [4, 5], (more complicated p.d.e.'s in several spatial dimensions).

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(DOI: 10.1002/rnc.739)