

1. Record Nr.	UNINA9910865267403321
Autore	Li Daqian
Titolo	Synchronization for Wave Equations with Locally Distributed Controls / / by Tatsien Li, Bopeng Rao
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2024
ISBN	981-9709-92-X
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (199 pages)
Collana	Series in Contemporary Mathematics, , 2364-0103 ; ; 5
Altri autori (Persone)	RaoBopeng
Disciplina	3
Soggetti	System theory Control theory Differential equations Functional analysis Systems Theory, Control Differential Equations Functional Analysis
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	1. Introduction -- 2. Algebraic preliminaries -- 3. Approximate internal controllability -- 4. Indirect internal controls -- 5. Approximate internal synchronization -- 6. Approximate internal synchronization by groups -- 7. Exact internal controllability -- 8. Exact internal synchronization -- 9. Stability of exact internal synchronization -- 10. Exact internal synchronization by groups -- 11. Stability of exact internal synchronization by groups -- 12. Family of exact internal synchronizations -- 13. Approximate mixed controllability -- 14. Approximate mixed synchronization by groups -- 15. Exact mixed controllability -- 16. Exact mixed synchronization by groups.
Sommario/riassunto	This book aims to establish a systematic theory on the synchronization for wave equations with locally distributed controls. It is structured in two parts. Part I is devoted to internal controls, while Part II treats the case of mixed internal and boundary controls. The authors present necessary mathematical formulations and techniques for analyzing and solving problems in this area. They also give numerous examples and applications to illustrate the concepts and demonstrate their practical

relevance. The book provides an overview of the field and offers an in-depth analysis of new results with elegant proofs. By reading this book, it can be found that due to the use of internal controls, more deep-going results on synchronization can be obtained, which makes the corresponding synchronization theory more precise and complete. Graduate students and researchers in control and synchronization for partial differential equations, functional analysis find this book useful. It is also an excellent reference in the field. Thanks to the explicit criteria given in this book for various notions of controllability and synchronization, researchers and practitioners can effectively use the control strategies described in this book and make corresponding decisions regarding system design and operation.
