

1. Record Nr.	UNINA9910967813003321
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Titolo	Synchronization in complex networks // Xin Biao Lu and Bu Zhi Qin
Pubbl/distr/stampa	New York, : Nova Science Publisher's, c2011
ISBN	9781611222609 1611222605
Edizione	[1st ed.]
Descrizione fisica	1 online resource (147 p.)
Collana	Computer networks.
Altri autori (Persone)	QinBu Zhi
Disciplina	004.6/5
Soggetti	Synchronous data transmission systems Computer network architectures
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references (p. [123]-133) and index.
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Sommario/riassunto

This book discusses the synchronization in complex networks. At first, the basic concepts of complex networks, including the description of the network, the degree of the node, clustering coefficient, and the average path length are introduced. When the initial states of nodes are near enough to synchronization manifold, the master stability function method is applied to analyze its local stability. However, when the initial states of nodes are randomly distributed, the Lyapunov function method is used to analyze the global stability of synchronization manifold. Furthermore, the connection graph stability method is used to investigate the global stability of synchronization in complex networks with time-varying network topology.