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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.