Synchronization Phenomena of Coupled Chaotic Circuits with Degree Distribution Network Topology

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SUMMARY

Synchronization phenomena are observed everywhere in our life. For example, we can confirm metronome, flashing firefly lights, beating rhythm of the heart and so on. We are especially interested in synchronization phenomena of oscillatory networks. Recently, complex networks are paid attention in various fields. The behavior of networks is characterized by degree, path length and clustering coefficient. The degree of a node in a network is the number of edges which connects to other nodes.

In this study, we use ten chaotic circuits which are coupled with resistors. We use several network topological structures with different degree distributions. We investigate synchronization phenomena of chaotic circuits of several network topological structures by changing the coupling strength.