Synchronization analysis in complex networks with identical structural parameters

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Abstract: In this work, we present a network synchronizability analysis in networks with identical structural parameters and chaotic dynamic nodes. Each network is configured with Lorenz system, Rössler system or Chua circuits. Results of the simulation in MATLAB are shown for networks with different indexes of synchronizability and identical structural parameters. The main idea of this work consists of contributing to the study of the relationship between the characteristics of the synchronizability and the structural parameters of a network.

Keywords: Synchronization, Complex networks, Lorenz system, Synchronizability, Chaos.