

Investigation of synchronization for similar and non-similar systems

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Received: 24.08.2017 Final revised: 19.06.2018 Accepted: 02.07.2018

Abstract

There are several methods to synchronize chaotic systems. In this work, we have proposed the adaptive synchronization to study the three interesting systems. These systems are Rössler-Rössler, Liu-Liu, and Liu-Rössler. We have simulated the synchronization of the systems under different circumstances. A numerical simulation of synchronization between the proposed systems demonstrates that the systems can synchronize with this method perfectly even in the presence of unknown parameters. We have deduced that the synchronization speed in the first system (Rössler-Rössler) is faster than the rest. Also, the second system (Liu-Liu) is synchronized faster than the third system. According to the results obtained in this paper, the adaptive synchronization works better on similar systems such as Rössler-Rössler and Liu-Liu.

Keywords: Adaptive synchronization, chaotic systems, Chaos

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