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# An adaptive chaos synchronization scheme applied to secure communication

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### Abstract

This paper deals with the problem of synchronization of a class of continuous-time chaotic systems using the drive-response concept. An adaptive observer-based response system is designed to synchronize with a given chaotic drive system whose dynamical model is subjected to unknown parameters. Using the Lyapunov stability theory an adaptation law is derived to estimate the unknown parameters. We show that synchronization is achieved asymptotically. The approach is next applied to chaos-based secure communication. To demonstrate the efficiency of the proposed scheme numerical simulations are presented.



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