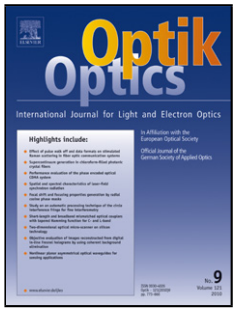

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Generalized binary function projective synchronization of chaotic systems with unknown parameters

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Abstract: Based on function projective synchronization theorem, a novel type of synchronization scheme called generalized binary function projective synchronization is proposed. Combining adaptive control theory with special matrix structure, an extended adaptive controller which is more general than some existing controllers is designed. Under the controller, the proposed synchronization between two different uncertain chaotic systems is achieved and the unknown parameters are also estimated. Numerical simulation result is presented to show the validity and feasibility of the scheme and controller.

Keywords: generalized binary function projective synchronization; special matrix structure; adaptive control;

1. Introduction

Since the idea of synchronizing chaotic systems was introduced by Pecora and Carroll [1], chaos synchronization has gained a lot of attention among scientists from a variety of research fields due to its potential applications in secure communication, ecological systems, system identification, etc. In recent years, a variety of approaches have been proposed for the chaos synchronization of chaotic systems such as complete synchronization [2], phase synchronization [3], lag synchronization [4], generalized synchronization [5], anti-synchronization [6], impulsive synchronization [7], and so

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