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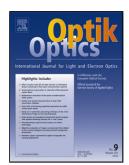
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Generalized binary function projective synchronization of chaotic

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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