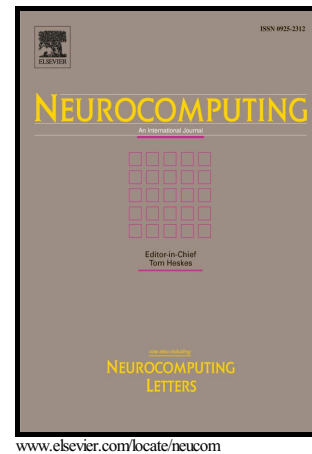


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An integrated fault estimation and accommodation design for a class of complex networks

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Abstract

This paper proposes an integrated fault estimation and accommodation method for a class of linearly interconnected complex network systems. In order to simultaneously estimate the unknown state and fault(s) information, a set of novel distributed adaptive estimators are designed, based on which a decentralized fault accommodation scheme is further constructed to stabilize the whole interconnected system. An example of a network consisting of three one-link manipulators is presented to demonstrate the effectiveness of our proposed method.

Keywords: Complex networks, Fault tolerant control, Fault estimation, Fault accommodation

1. Introduction

In recent years, the synchronization control of complex networks has attracted a great deal of interest. The interest is motivated by the recognition that complex networks have been a fundamental and useful tool in understanding the dynamical behavior and the response of real systems in various fields such as biology, sociology, the food web, World Wide Web and elec-

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