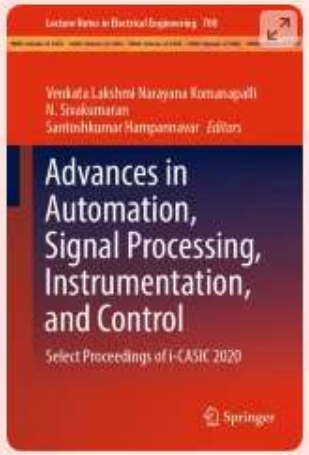

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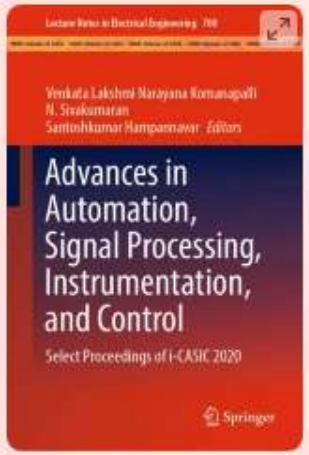

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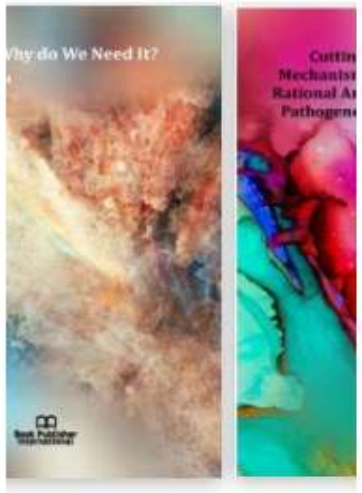

About

This book covers key areas of engineering Research. The contributions by the authors include public transport, subsidy, transport services, sliding bearings, *vibrations, fuzzy logic,* vibration spectrum analysis, *battery management system,* voltage balancing, *multiple model, fault diagnosis, performance degradation, command input strategy, reference models, climate change, evapotranspiration, irrigation water requirement, mechanical properties, rolled products, cold heading, bolted metal products, storage tanks fabrication, entrepreneurial risk, diversification process, diversification strategy, integration, die attach process, measurement tool, non-conductive adhesives, energy coal mixtures, physico-chemical properties, mineralogical analysis, hygroscopic moisture content, polyaniline, carbon nanotube, nanocomposite, cadmium sulphide, electrical transport, critical pressure, hydrocarbons, carbon atoms, molecular formula, blast domination number of a graph, triple connected domination number of a graph, triple connected graph, wind energy, PV module, energy storage system, pulse width modulation. This book contains various materials suitable for students, researchers and academicians in the field of engineering Research.*

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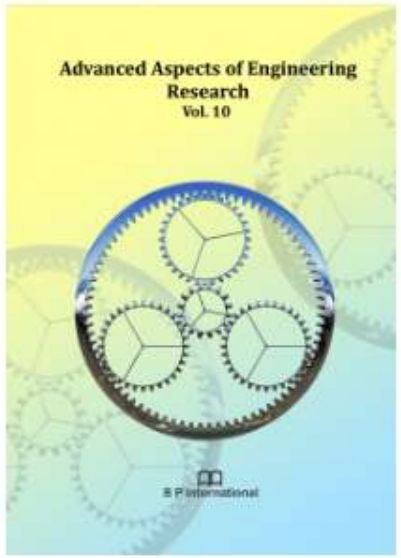

Fault Tolerant Control Design for Linear Systems with Appropriate Performance Degradation Using Eigen Structure Assignment

S. Kanthalakshmi ; M. Raghappriya ; R. Latha

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Abstract

The main goal is to design a fault-tolerant control with acceptable performance degradation due to faults in actuators, sensors, and device dynamics using multiple model techniques. The achievable performance under various component failures is expressed in the form of reference models, also known as appropriate performance reference models. Using eigen structure assignment, a series of controllers is synthesised based on these models. To achieve desired output, the proper controller is reconfigured for a particular fault state, and revised command input is selected automatically. The fault detection and diagnosis is done using IMM estimator and the controller reconfiguration is done using eigen structure assignment. The aircraft model is chosen to demonstrate the