1. Record Nr. UNINA9910847578603321

Autore	Wang Xingjian
Titolo	Fault Tolerant Control of Large Civil Aircraft / / by Xingjian Wang, Yuwei Zhang, Shaoping Wang
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2024
ISBN	981-9716-54-3
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (154 pages)
Disciplina	629.135
Soggetti	Aerospace engineering Astronautics Automatic control System theory Control theory Aerospace Technology and Astronautics Control and Systems Theory Systems Theory, Control
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Chapter 1 Introduction -- Chapter 2 Convex optimization-based fault-tolerant control for dissimilar redundant actuation system of civil aircraft -- Chapter 3 Fault mode probability factor-based fault-tolerant control for dissimilar redundant actuation system -- Chapter 4 Active fault-tolerant control of dissimilar redundant actuation system based on performance degradation reference models -- Chapter 5 Variable-Order Observer-based Fault Tolerant Control for Aircraft with Partial Actuator and Sensor Failures -- Chapter 6 Active Fault-Tolerant Control Strategy of Large Civil Aircraft under Elevator Failures -- Chapter 7 Dynamics and adaptive fault-tolerant flight control under structure damage of horizontal stabilizer -- Chapter 8 Active Fault-Tolerant Control of extreme faults in large aircraft based on propulsion differential -- Appendix.
Sommario/riassunto	This book provides a comprehensive analysis of fault tolerant control (FTC) for more-electric civil aircraft. FTC is a crucial approach to enhance the reliability and safety of aircraft in the event of actuator,

sensor, or structural failures. Engineers and scientists from diverse disciplines, including aeronautics, electrical, mechanical, and control engineering, have been drawn to research on FTC. This book analyzes the impact of faults on performance degradation in dissimilar redundant actuation systems of civil aircraft and presents the FTC methods to ensure reliable actuation and efficient control. Additionally, this book addresses surface damage issues, such as the loss of elevator, horizontal stabilizer, and rudder, by providing representative FTC methods. The book's major highlight is its comprehensive and systematic approach to FTC design, making it an ideal resource for readers interested in learning about FTC design for civil aircraft. The book benefits researchers, engineers, and graduate students in the fields of FTC, adaptive control, flight control, etc.