

1. Record Nr.	UNINA9910627239003321
Autore	Li Xuefeng
Titolo	Redundant Inertial Measurement Unit Reconfiguration and Trajectory Replanning of Launch Vehicle / / by Xuefeng Li, Fan Xu, Guoqiang Xu
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2023
ISBN	981-19-4637-X
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (196 pages)
Collana	Navigation: Science and Technology, , 2522-0462 ; ; 12
Disciplina	531.12
Soggetti	Aerospace engineering Astronautics Engines Aerospace Technology and Astronautics Engine Technology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Section 1 Introduction -- Section 2 Model of Launch Vehicle Dynamics and Redundant Strapdown IMUs -- Section 3 Redundant IMU Fault Detection -- Section 4 Redundant IMU Reconfiguration -- Section 5 Trajectory Replanning.
Sommario/riassunto	This book analyzes the problems to be solved urgently in the development of launch vehicle control system. The techniques of redundant Inertial Measurement Unit (IMU) reconfiguration and trajectory replanning are proposed aiming at the inertial device failures and power system failures during flight of launch vehicles, respectively. It introduces the background of redundant IMU reconfiguration and trajectory replanning technologies and models of launch vehicle dynamics and redundant strap-down IMUs. The approaches for redundant strap-down IMU fault detection, reconfiguration and trajectory replanning are proposed, putting forward a prospect for the development of launch vehicle control system. The content of this book is concise and highly pragmatic. It could serve as a reference for engineers and researchers engaged in the analysis, design and verification of launch vehicle control systems and also as a reference for graduate students and senior undergraduates majoring in

navigation, guidance and control.
