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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Overview and Context for Spacecraft Momentum Control -- Agile Spacecraft Dynamics and Control -- Requirements Development for Momentum-Control Systems -- Dynamics of Momentum-Control Devices -- Inner-Loop Control of Momentum-Control Devices -- CMG Arrays -- CMG Singularities -- Steering Algorithms -- Motors in Space -- Bearings and Lubrication in Space -- Integration and Test -- Commercial and Academic Flight Heritage of CMG -- Current State of the Art.
Sommario/riassunto	The goal of this book is to serve both as a practical technical reference and a resource for gaining a fuller understanding of the state of the art of spacecraft momentum control systems, specifically looking at control moment gyroscopes (CMGs). As a result, the subject matter includes theory, technology, and systems engineering. The authors combine material on system-level architecture of spacecraft that feature momentum-control systems with material about the

momentum-control hardware and software. This also encompasses material on the theoretical and algorithmic approaches to the control of space vehicles with CMGs. In essence, CMGs are the attitude-control actuators that make contemporary highly agile spacecraft possible. The rise of commercial Earth imaging, the advances in privately built spacecraft (including small satellites), and the growing popularity of the subject matter in academic circles over the past decade argues that now is the time for an in-depth treatment of the topic. CMGs are augmented by reaction wheels and related algorithms for steering all such actuators, which together comprise the field of spacecraft momentum control systems. The material is presented at a level suitable for practicing engineers and those with an undergraduate degree in mechanical, electrical, and/or aerospace engineering.