



Spacecraft Momentum Control Systems (Space Technology Library)

By Frederick A. Leve, Brian J. Hamilton, Mason A. Peck

[Download now](#)

[Read Online](#) 

Spacecraft Momentum Control Systems (Space Technology Library) By
Frederick A. Leve, Brian J. Hamilton, Mason A. Peck

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.

 [Download Spacecraft Momentum Control Systems \(Space Technol...pdf](#)

 [Read Online Spacecraft Momentum Control Systems \(Space Techn...pdf](#)

Spacecraft Momentum Control Systems (Space Technology Library)

By Frederick A. Leve, Brian J. Hamilton, Mason A. Peck

Spacecraft Momentum Control Systems (Space Technology Library) By Frederick A. Leve, Brian J. Hamilton, Mason A. Peck

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.

Spacecraft Momentum Control Systems (Space Technology Library) By Frederick A. Leve, Brian J. Hamilton, Mason A. Peck Bibliography

- Sales Rank: #901744 in Books
- Published on: 2015-10-18
- Original language: English
- Number of items: 1
- Dimensions: 9.51" h x .80" w x 6.31" l, 1.46 pounds
- Binding: Hardcover
- 247 pages

 [Download Spacecraft Momentum Control Systems \(Space Technol ...pdf](#)

 [Read Online Spacecraft Momentum Control Systems \(Space Technol ...pdf](#)

**Download and Read Free Online Spacecraft Momentum Control Systems (Space Technology Library)
By Frederick A. Leve, Brian J. Hamilton, Mason A. Peck**

Editorial Review

From the Back Cover

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.

About the Author

Frederick A. Leve Research Aerospace Engineer at the Air Force Research Laboratory, Space Vehicles Directorate, received his Ph.D. in Aerospace Engineering from the University of Florida in 2010. While at the University of Florida, he received the IAF Silver Hermann Oberth Medal and the AIAA Abe Zarem Award for Astronautics. Currently, he is the technical advisor to the Guidance, Navigation, and Controls Group and has published many papers in the area of attitude dynamics and control, specifically with respect to momentum control systems and also performs research in under-actuated control, fault tolerant control, control allocation, analytical mechanics, and system identification. Dr. Leve is a recipient of the 2014 AFRL Early Career Award.

Brian J. Hamilton Engineering Fellow at Honeywell Aerospace, received a BSEE with Honors from the University of Illinois, 1976. Mr. Hamilton has nearly 40 years of experience at Honeywell (formerly, Sperry) and has participated in the development of CMG technology since its infancy. In recent years, his research focus has been on CMG array control and steering, and the general application of momentum systems to agile spacecraft attitude control. Other areas of specialty include nonlinear modeling, controls design, system optimization and active magnetic suspension. Mr. Hamilton holds 12 patents.

Mason A. Peck

Associate Professor at Cornell University in Mechanical and Aerospace Engineering, received his Ph.D. in Aerospace Engineering from the University of California, Los Angeles, in 2001. He has worked as an aerospace engineer since 1994 and has been on the faculty at Cornell since 2004. From late 2011 through early 2014 he was NASA's Chief Technologist. In that role, he served as the agency's chief strategist for technology investment and prioritization and advocate for innovation in aeronautics and space technology. His research lab focuses on fundamental research in space technology that can be advanced through flight experiments. Examples include Violet, a nanosatellite for demonstrating CMG steering laws, and KickSat, the world's first crowdfunded spacecraft. Dr. Peck holds 19 patents in the U.S. and the E.U. and has over 100 academic publications. He received the NASA Distinguished Public Service Medal in 2014.

Users Review

From reader reviews:

Katherine Sorenson:

The book Spacecraft Momentum Control Systems (Space Technology Library) can give more knowledge and also the precise product information about everything you want. So just why must we leave a very important thing like a book Spacecraft Momentum Control Systems (Space Technology Library)? Several of you have a different opinion about guide. But one aim in which book can give many information for us. It is absolutely appropriate. Right now, try to closer together with your book. Knowledge or facts that you take for that, you are able to give for each other; you can share all of these. Book Spacecraft Momentum Control Systems (Space Technology Library) has simple shape however, you know: it has great and massive function for you. You can appear the enormous world by available and read a guide. So it is very wonderful.

Mary Killgore:

What do you about book? It is not important along? Or just adding material when you want something to explain what the one you have problem? How about your free time? Or are you busy particular person? If you don't have spare time to do others business, it is make you feel bored faster. And you have spare time? What did you do? Everybody has many questions above. They need to answer that question due to the fact just their can do this. It said that about book. Book is familiar in each person. Yes, it is appropriate. Because start from on jardín de infancia until university need that Spacecraft Momentum Control Systems (Space Technology Library) to read.

Timothy Duchene:

The ability that you get from Spacecraft Momentum Control Systems (Space Technology Library) is a more deep you digging the information that hide into the words the more you get thinking about reading it. It does not mean that this book is hard to understand but Spacecraft Momentum Control Systems (Space Technology Library) giving you joy feeling of reading. The article writer conveys their point in a number of way that can be understood by anyone who read the idea because the author of this guide is well-known enough. This particular book also makes your own personal vocabulary increase well. So it is easy to understand then can go with you, both in printed or e-book style are available. We suggest you for having this specific Spacecraft Momentum Control Systems (Space Technology Library) instantly.

Eddie Grabowski:

Spacecraft Momentum Control Systems (Space Technology Library) can be one of your starter books that are good idea. Most of us recommend that straight away because this book has good vocabulary that will increase your knowledge in words, easy to understand, bit entertaining but nonetheless delivering the information. The writer giving his/her effort to place every word into satisfaction arrangement in writing Spacecraft Momentum Control Systems (Space Technology Library) however doesn't forget the main point, giving the reader the hottest in addition to based confirm resource details that maybe you can be one among it. This great information can drawn you into brand new stage of crucial thinking.

Download and Read Online Spacecraft Momentum Control Systems (Space Technology Library) By Frederick A. Leve, Brian J. Hamilton, Mason A. Peck #XCT514MAPNJ

Read Spacecraft Momentum Control Systems (Space Technology Library) By Frederick A. Leve, Brian J. Hamilton, Mason A. Peck for online ebook

Spacecraft Momentum Control Systems (Space Technology Library) By Frederick A. Leve, Brian J. Hamilton, Mason A. Peck Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Spacecraft Momentum Control Systems (Space Technology Library) By Frederick A. Leve, Brian J. Hamilton, Mason A. Peck books to read online.

Online Spacecraft Momentum Control Systems (Space Technology Library) By Frederick A. Leve, Brian J. Hamilton, Mason A. Peck ebook PDF download

Spacecraft Momentum Control Systems (Space Technology Library) By Frederick A. Leve, Brian J. Hamilton, Mason A. Peck Doc

Spacecraft Momentum Control Systems (Space Technology Library) By Frederick A. Leve, Brian J. Hamilton, Mason A. Peck MobiPocket

Spacecraft Momentum Control Systems (Space Technology Library) By Frederick A. Leve, Brian J. Hamilton, Mason A. Peck EPub

XCT514MAPNJ: Spacecraft Momentum Control Systems (Space Technology Library) By Frederick A. Leve, Brian J. Hamilton, Mason A. Peck