Automated Rendezvous and Docking of Spacecraft

The definitive reference for space engineers on all issues related to rendezvous and docking/berthing (RVD/B), *Automated Rendezvous and Docking of Spacecraft* answers key questions such as:

- How does the docking vehicle accurately approach the target spacecraft?
- What technology is needed aboard the spacecraft to perform automatic rendezvous and docking, and what systems are required by ground control to supervise this process?
- How can the proper functioning of all rendezvous related equipment, systems and operations be verified before launch?

The book provides an overview of the major issues governing approach and mating strategies, and system concepts for rendezvous and docking/berthing. These issues are described and explained such that aerospace engineers, students and even newcomers to the field can acquire a basic understanding of RVD/B.

Cambridge Aerospace Series 16

Editors:

MICHAEL J. RYCROFT AND WEI SHYY

- 1. J. M. Rolfe and K. J. Staples (eds.): Flight Simulation
- 2. P. Berlin: The Geostationary Applications Satellite
- 3. M. J. T. Smith: Aircraft Noise
- 4. N. X. Vinh: Flight Mechanics of High-Performance Aircraft
- 5. W. A. Mair and D. L. Birdsall: Aircraft Performance
- 6. M. J. Abzug and E. E. Larrabee: Airplane Stability and Control
- 7. M. J. Sidi: Spacecraft Dynamics and Control
- 8. J. D. Anderson: A History of Aerodynamics
- 9. A. M. Cruise, J. A. Bowles, C. V. Goodall, and T. J. Patrick: *Principles of Space Instrument Design*
- 10. G. A. Khoury and J. D. Gillett (eds.): Airship Technology
- 11. J. Fielding: Introduction to Aircraft Design
- 12. J. G. Leishman: Principles of Helicopter Dynamics
- 13. J. Katz and A. Plotkin: Low Speed Aerodynamics, Second Edition
- 14. M. J. Abzug and E. E. Larrabee: Airplane Stability and Control, Second Edition
- 15. D. H. Hodges and G. A. Pierce: Introduction to Structural Dynamics and Aeroelasticity

Automated Rendezvous and Docking of Spacecraft

WIGBERT FEHSE



CAMBRIDGE UNIVERSITY PRESS Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore, São Paulo

Cambridge University Press
The Edinburgh Building, Cambridge CB2 2RU, United Kingdom
Published in the United States of America by Cambridge University Press, New York
www.cambridge.org

Information on this title: www.cambridge.org/9780521824927

© Cambridge University Press, 2003

This book is in copyright. Subject to statutory exception and to the provision of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Cambridge University Press.

First published in print format 2003

ISBN-13 978-0-511-54338-8 OCeISBN

ISBN-13 978-0-521-82492-7 hardback ISBN-10 0-521-82492-3 hardback

Cambridge University Press has no responsibility for the persistence or accuracy of URLs for external or third-party internet websites referred to in this book, and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.

For my wife Ulla, for all her love, care and patience