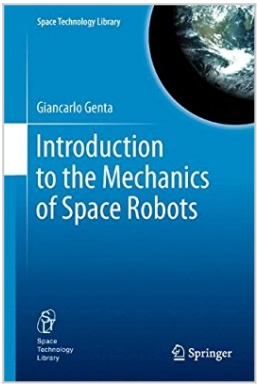

Introduction to the Mechanics of Space Robots (Space Technology Library)

By Giancarlo Genta

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Based on lecture notes on a space robotics course, this book offers a pedagogical introduction to the mechanics of space robots. After presenting an overview of the environments and conditions space robots have to work in, the author discusses a variety of manipulatory devices robots may use to perform their tasks. This is followed by a discussion of robot mobility in these environments and the various technical approaches. The last two chapters are dedicated to actuators, sensors and power systems used in space robots.
This book fills a gap in the space technology literature and will be useful for students and for those who have an interest in the broad and highly interdisciplinary field of space robotics, and in particular in its mechanical aspects.

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Review

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“This book is a successful combination of two fields: space technology and mechanics. … The book is easily readable and the reader can find all the explanations inside. I maintain that this book can be used not only by students or by those with an interest in the broad … but also by all those interested in the fields of mechanics and biomechanics.” (Nicolae-Doru Stanescu, International Journal of Acoustics and Vibration, Vol. 19 (3), 2014)

From the Back Cover

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About the Author
Giancarlo Genta has been a professor at the Department of Mechanical and Aerospace Engineering of the Technical University of Torino since the 1970s. He is a member of the International Academy of Astronautics and of the ‘Accademia delle Scienze di Torino’ and received the International Academy of Astronautics’ Engineering Science Award for outstanding achievements in engineering science, the Yangel Medal for outstanding contributions to the development of the international space sciences and technologies, and the International Academy of Astronautics’ Book Award for his book ‘Introduction to the Mechanics of Space Robots’ (Springer 2012). At present he coordinates all courses in automotive engineering and the PhD course in Mechatronics. He has published 87 papers in Italian, American and English Journals and 245 papers presented to symposia on topics like structural dynamics, space systems and robotics. He is the author of various books on: motor vehicle mechanics, automotive design and automotive history (published in Italian and English), machine design, design with composite materials, the mechanics of vibration, kinetic energy storage (published in England and translated into Russian), and on vibration and the dynamics of rotating systems (both published in the USA). His books on motor vehicle mechanics and the mechanics of vibration are used as textbooks at some American universities. He has also published two popular science books on the prospects of space exploration and the search for extraterrestrial intelligence, and recently a novel for the Springer series ‘Science and Fiction.’ A new novel is due to be published in the same series in 2015.

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