1. Record Nr. UNINA9910311939703321

Autore	Walter Ulrich
Titolo	Astronautics : the physics of space flight / / by Ulrich Walter
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
ISBN	3-319-74373-2 9783319743738
Edizione	[3rd ed., corrected publication]
Descrizione fisica	1 online resource (XXXVI, 828 p. 938 illus., 79 illus. in color.)
Disciplina	629.4
Soggetti	Vol espacial Aerospace engineering Astronautics Space sciences Mechanics Gravitation Aerospace Technology and Astronautics Space Sciences (including Extraterrestrial Physics, Space Exploration and Astronautics) Classical Mechanics Classical and Quantum Gravitation, Relativity Theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Rocket Fundamentals -- Rocket Flight -- Rocket Staging -- Thermal Propulsion -- Electric Propulsion -- Atmospheric and Ascent Flight -- Orbits -- Orbital Maneuvering -- Interplanetary Flight -- Planetary Entry -- Three-Body Problem -- Orbit Perturbations -- Reference Frames -- Orbit Determination -- Spacecraft Attitude Dynamics.- Thermal Radiation Physics and Modeling.
Sommario/riassunto	This introductory text covers all the key concepts, relationships, and ideas behind spaceflight and is the perfect companion for students pursuing courses on or related to astronautics. As a crew member of the STS-55 Space Shuttle mission and a full professor of astronautics at the Technical University of Munich, Ulrich Walter is an acknowledged

expert in the field. This book is based on his extensive teaching and work with students, and the text is backed up by numerous examples drawn from his own experience. With its end-of-chapter examples and problems, this work is suitable for graduate level or even undergraduate courses in spaceflight, as well as for professionals working in the space industry. This third edition includes substantial revisions of several sections to extend their coverage. These include both theoretical extensions such as the study of relative motion in near-circular orbits, and more practical matters such as additional details about jet-engine and general rocket performance. New sections address regularized equations of orbital motion and their algebraic solutions and also state vector propagation; two new chapters are devoted to orbit geometry and orbit determination and to thermal radiation physics and modelling.