1. Record Nr. UNINA9910741177303321

Autore	Pletser Vladimir
Titolo	Gravity, Weight and Their Absence / / by Vladimir Pletser
Pubbl/distr/stampa	Singapore : , : Springer Singapore : , : Imprint : Springer, , 2018
ISBN	981-10-8696-6
Edizione	[1st ed. 2018.]
Descrizione fisica	1 online resource (98 pages)
Collana	SpringerBriefs in Physics, , 2191-5423
Disciplina	530.138
Soggetti	Mechanics Space sciences Aerospace engineering Astronautics Human physiology Surfaces (Physics) Interfaces (Physical sciences) Thin films Classical Mechanics Space Sciences (including Extraterrestrial Physics, Space Exploration and Astronautics) Aerospace Technology and Astronautics Human Physiology Surface and Interface Science, Thin Films
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Part I: Can inertia make us move? Introduction -- Inertia and inertial reference frames -- Gravitation and weightiness -- Part II: Is weightlessness without gravity? Introduction to Part II Free fall and weightlessness -- Free fall trajectories -- Free fall in the Universe -- Part III: Should one dwell on microgravity? Introduction to Part III Microgravity -- Means to generate microgravity -- Interest of microgravity -- Part IV: Physiological effects of weightlessness Introduction to Part IV General considerations on Life science research -- Physiological effects of weightlessnes -- Bone demineralization.
Sommario/riassunto	The book introduces readers to the concept of weightlessness and

microgravity, and presents several examples of microgravity research in fluid physics, the material sciences and human physiology. Further, it explains a range of basic physical concepts (inertia, reference frames, mass and weight, accelerations, gravitation and weightiness, free fall, trajectories, and platforms for microgravity research) in simple terms. The last section addresses the physiological effects of weightlessness. The book’s simple didactic approach makes it easy to read: equations are kept to a minimum, while examples and applications are presented in the appendices. Simple sketches and photos from actual space missions illustrate the main content. This book allows readers to understand the space environment that astronauts experience on board space stations, and to more closely follow on-going and future space missions in Earth orbit and to Mars.