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| Descrizione fisica | 1 online resource (257 pages) |
| Altri autori (Persone) | MarinMarin OchsnerAndreas ScutaruMaria Luminita |
| Disciplina | 620.1 |
| Soggetti | Mechanics, Applied Statics Mechanics Mathematical optimization Calculus of variations Engineering Mechanics Mechanical Statics and Structures Classical Mechanics Calculus of Variations and Optimization |
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| Lingua di pubblicazione | Inglese |
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| Nota di contenuto | Fundamental Notions and Principles of Mechanics -- Statics of a Material Point -- Statics of a System of Material Points -- Equivalent |

Sommario/riassunto

This book covers all the standard introductory topics in classical mechanics, for the first part: Statics (the analysis of forces and moments acting on a mechanical system in equilibrium with its environment). Starting from Newton's laws, the necessary and sufficient conditions are formulated for a point/rigid/system to remain in equilibrium. The main problems that may arise in engineering practice are analyzed and numerous problems illustrate the presentation. It is well known that classical mechanics, viewed as a theoretical discipline, possesses an inherent beauty, depth and richness and presents coherence and elegance. This book tries to highlight this beauty and harmony that classical mechanics offers. The long experience of the authors means that the way of presentation is intensively tested in the decades of contact with students. The textbook is mainly addressed to advanced undergraduate and beginning graduate students who are interested in the engineering application of modern methods in classical mechanics. The authors try to use a clear and systematic style to promote a good understanding of the subject. For this part of mechanics, statics, the authors motivated and illustrated each concept, with worked examples. The book intends to provide a thorough coverage of the fundamental principles and techniques of classical mechanics. The text is based on the authors' many years of experience delivering lectures and seminars. Most of the problems are original and will be useful not only for those studying mechanics, but also for those who teach it.
