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| ISBN | 3-030-63643-7 |
| Edizione | [1st ed. 2021.] |
| Descrizione fisica | 1 online resource (X, 286 p. 65 illus., 43 illus. in color.) |
| Collana | Undergraduate Lecture Notes in Physics |
| Disciplina | 530.15 |
| Soggetti | Mathematical physics<br>Finance<br>Finance - Mathematical models |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di contenuto | Chapter 1 - Introduction -- Chapter 2 - Concepts of finance -- Chapter 3 - Portfolio theory and CAPM -- Chapter 4 - Stochastic processes -- Chapter 5 - Black-Scholes differential equation -- Chapter 6 - The Greeks and risk management -- Chapter 7 - Regression models and hypothesis testing -- Chapter 8 - Time series -- Chapter 9 - Bubbles, crashes, fat tails and Levy-stable distributions -- Chapter 10 - Quantum finance and path integrals -- Chapter 11 - Optimal control theory. |
| Sommario/riassunto | This book introduces physics students to concepts and methods of finance. Despite being perceived as quite distant from physics, finance shares a number of common methods and ideas, usually related to noise and uncertainties. Juxtaposing the key methods to applications in both physics and finance articulates both differences and common features, this gives students a deeper understanding of the underlying ideas. Moreover, they acquire a number of useful mathematical and computational tools, such as stochastic differential equations, path integrals, Monte-Carlo methods, and basic cryptology. Each chapter ends with a set of carefully designed exercises enabling readers to test their comprehension. |