

1. Record Nr.	UNISA996418185503316
Autore	Wang Song
Titolo	The fitted finite volume and power penalty methods for option pricing / / Song Wang
Pubbl/distr/stampa	Singapore : , : Springer, , [2020] Â©2020
ISBN	981-15-9558-5
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (VIII, 94 p. 14 illus.)
Collana	SpringerBriefs in applied sciences and technology
Disciplina	332.63228
Soggetti	Options (Finance) - Prices - Mathematical models Engineering mathematics Mathematical optimization
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	1. Introduction -- 2. European options on one asset -- 3. American options on one asset -- 4. Two-factor option models -- 5. The super-convergent finite volume method for pricing options.
Sommario/riassunto	This book contains mostly the author's up-to-date research results in the area. Option pricing has attracted much attention in the past decade from applied mathematicians, statisticians, practitioners and educators. Many partial differential equation-based theoretical models have been developed for valuing various options. These models do not have any practical use unless their solutions can be found. However, most of these models are far too complex to solve analytically and numerical approximations have to be sought in practice. The contents of the book consist of three parts: (i) basic theory of stochastic control and formulation of various option pricing models, (ii) design of finite volume, finite difference and penalty-based algorithms for solving the models and (iii) stability and convergence analysis of the algorithms. It also contains extensive numerical experiments demonstrating how these algorithms perform for practical problems. The theoretical and numerical results demonstrate these algorithms provide efficient, accurate and easy-to-implement numerical tools for financial engineers to price options. This book is appealing to researchers in financial

engineering, optimal control and operations research. Financial
engineers and practitioners will also find the book helpful in practice.
