1. Record Nr. UNINA9910483458303321

Autore	Mishura IUliia S
Titolo	Stochastic calculus for fractional Brownian motion and related processes / / Yuliya S. Mishura
Pubbl/distr/stampa	Berlin, : Springer-Verlag, c2008
ISBN	3-540-75873-9
Edizione	[1st ed. 2008.]
Descrizione fisica	1 online resource (XVIII, 398 p.)
Collana	Lecture notes in mathematics, , 0075-8434 ; ; 1929
Classificazione	60G1560G4460G6060H0560H0760H1060H4091B2491B28
Disciplina	530.4/750151922
Soggetti	Brownian motion processes - Mathematical models Stochastic analysis
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references (p. [369]-389) and index.
Nota di contenuto	Wiener integration with respect to fractional Brownian motion -- Stochastic integration with respect to fBm and related topics -- Stochastic differential equations involving fractional Brownian motion -- Filtering in systems with fractional Brownian noise -- Financial applications of fractional Brownian motion -- Tactical inference with fractional Brownian motion -- A: Mandelbrot-van Ness representation : some related calculations -- Approximation of beta integrals and estimation of kernels.
Sommario/riassunto	The theory of fractional Brownian motion and other long-memory processes are addressed in this volume. Interesting topics for PhD students and specialists in probability theory, stochastic analysis and financial mathematics demonstrate the modern level of this field. Among these are results about Levy characterization of fractional Brownian motion, maximal moment inequalities for Wiener integrals including the values 0<H<1/2 of Hurst index, the conditions of existence and uniqueness of solutions to SDE involving additive Wiener integrals, and of solutions of the mixed Brownian—fractional Brownian SDE. The author develops optimal filtering of mixed models including linear case, and studies financial applications and statistical inference with hypotheses testing and parameter estimation. She proves that the market with stock guided by the mixed model is arbitrage-free without any restriction on the dependence of the components and deduces different forms of the Black-Scholes equation for fractional market.