

1. Record Nr.	UNINA9910830236503321
Autore	Banna Oksana
Titolo	Fractional brownian motion : approximations and projections // Oksana Banna, [and three others]
Pubbl/distr/stampa	Hoboken, New Jersey : , : ISTE : , : Wiley, , 2019
ISBN	1-119-47677-1 1-119-61033-8 1-119-61034-6
Edizione	[1st edition]
Descrizione fisica	1 online resource (293 pages)
Disciplina	530.475
Soggetti	Brownian motion processes Martingales (Mathematics)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	This monograph studies the relationships between fractional Brownian motion (fBm) and other processes of more simple form. In particular, this book solves the problem of the projection of fBm onto the space of Gaussian martingales that can be represented as Wiener integrals with respect to a Wiener process. It is proved that there exists a unique martingale closest to fBm in the uniform integral norm. Numerical results concerning the approximation problem are given. The upper bounds of distances from fBm to the different subspaces of Gaussian martingales are evaluated and the numerical calculations are involved. The approximations of fBm by a uniformly convergent series of Lebesgue integrals, semimartingales and absolutely continuous processes are presented. As auxiliary but interesting results, the bounds from below and from above for the coefficient appearing in the representation of fBm via the Wiener process are established and some new inequalities for Gamma functions, and even for trigonometric functions, are obtained.