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Berry-Esseen Bounds for Drift Parameter Estimation of Discretely Observed Fractional Vasicek-Type Process

Communication Info

Authors:

Fares ALAZEMI¹
Soukaina DOUISSI²
Khalifa ES-SEBAIY³

^{1,3} Department of Mathematics,
Kuwait University, Kuwait.
² Cadi Ayyad University,
Marrakech, Morocco

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- (1) Parameter estimation
- (2) Vasicek-type process
- (3) Malliavin Calculus

Abstract

This talk is based on the published paper [1]. We study statistical estimation problems of drift parameters of Vasicek-type processes driven by fractional Brownian motion. Based on fixed-time-step observations and using Malliavin calculus combined with the recent Nourdin-Peccati analysis, we provide estimators of the drift parameters and analyze their asymptotic behaviors. More precisely, we study the strong consistency and the asymptotic distribution of the estimators and we give the rate of their convergence in law. In other words, we present the estimators chosen to estimate the drift parameters a and b respectively. We show their strong consistency and we prove in details how we obtained their speed of convergence in law depending on the values of the Hurst parameter H .

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