Limiting distribution of the least squaresestimates in polynomial regression with longmemory noises

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Résumé :

We give the limiting distribution of the least squares estimator in the polynomial regression model driven by some long memory processes. We prove that with an appropriate normalization, the estimation error converges, in distribution, to a random vector which components are a mixture of stochastic integrals. These integrals are with respect to a Lebesgue measure, and can be computed recursively where the seed is a random variable which depends on the assumptions made on the noise process. The limiting distribution can be Gaussian or non Gaussian.

Keywords: Fractional Brownian motion; Long memory; Multiple Wiener-Itô integral; Polynomial regression; Stochastic integral