

Identification of multifractional Brownian motion

JEAN-FRANÇOIS COEURJOLLY

Labsad, BSHM, UPMF, Avenue Centrale, B.P. 47, 38040 Grenoble Cedex 9, France. E-mail: jean-francois.coeurjolly@upmf-grenoble.fr

We develop a method for estimating the Hurst function of a multifractional Brownian motion, which is an extension of the fractional Brownian motion in the sense that the path regularity can now vary with time. This method is based on a local estimation of the second-order moment of a unique discretized filtered path. The effectiveness of our procedure is investigated in a short simulation study.

Keywords: filtering; fractional Brownian motion; functional estimation; multifractional Brownian motion