

Publicacions més rellevants de la línia de recerca:
Moviment brownià fraccionari i processos gaussians

Referència: Bardina, X. and Jolis, M., Multiple fractional integral with Hurst parameter less than $1/2$. *Stochastic processes and their App.* **116** (2006) 463–479.

Abstract: We construct a multiple Stratonovich-type integral with respect to the fractional Brownian motion with Hurst parameter $H < \frac{1}{2}$. This integral is obtained by a limit of Riemann sums procedure in the Solé and Utzet (1990) sense. We also define the suitable traces to obtain the Hu-Meyer formula that gives the Stratonovich integral as a sum of Itô integrals of these traces. Our approach is intrinsic in the sense that we do not make use of the integral representation of the fractional Brownian motion in terms of the ordinary Brownian motion.

Referència: Jolis, M., On the Wiener integral with respect to the fractional Brownian motion on an interval. *J. Math. Anal. Appl.*, **30** (2007) 1115–1127.

Abstract: We characterize the domain of the Wiener integral with respect to the fractional Brownian motion of any Hurst parameter $H \in (0, 1)$ on an interval $[0, T]$. The domain is the set of restrictions to $\mathcal{D}((0, T))$ of the distributions of $W^{1/2-H, 2}(\mathbb{R})$ with support contained in $[0, T]$. In the case $H \leq 1/2$ any element of the domain is given by a function, but in the case $H > 1/2$ this space contains distributions that are not given by functions. The techniques used in the proofs involve distribution theory and Fourier Analysis, and allow to study simultaneously both cases $H < 1/2$ and $H > 1/2$.

Referència: Eddahbi, M., Lacayo, R., Solé, J. L., Tudor, C. A. and Vives J., Renormalization of the local time for the d -dimensional fractional Brownian motion with N parameters. *Nagoya Mathematical Journal* **186** (2007) 173-191

Abstract: We give the Wiener-Itô chaotic decomposition for the local time of the d -dimensional fractional Brownian motion with N -parameters. We study its smoothness in the Sobolev-Watanabe spaces and its asymptotic behaviour when the space variable tends to zero and the time variable tends to infinite