
Mouvement browniens convolés

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Résumé

In the talk we analyse semimartingale properties of a class of Gaussian periodic processes, called convoluted Brownian motions, obtained by convolution between a deterministic function and a Brownian motion. A classical example in this class is the periodic Ornstein-Uhlenbeck process.

We compute their characteristics and show that in general, they are never Markovian nor satisfy a time-Markov property. Nevertheless, by enlargement of filtration and/or addition of a one-dimensional component, one can in some case recover the Markovianity. We treat exhaustively the case of the bidimensional trigonometric convoluted Brownian motion and the multidimensional monomial convoluted Brownian motion.

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