

# Inference techniques for the analysis of Brownian image textures

*mercredi 19 juin 2024 09:30 (1 heure)*

In this talk, I will present some techniques for estimating the functional parameters of anisotropic fractional Brownian fields, and their application to the analysis of image textures. I will focus on a first approach based on the resolution of inverse problems which leads to a complete estimation of parameters. The formulation of these inverse problems comes from the fitting of the empirical semi-variogram of an image to the semi-variogram of a turning band field that approximates the anisotropic fractional Brownian field. It takes the form of a separable non-linear least square criterion which can be solved by a variable projection method, and extended to take into account additional penalties. Besides, I will also describe an alternate approach which uses neural networks to obtain accurate estimation of field features such as the field degree of regularity.

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**Classification de Session:** Exposé long

**Classification de thématique:** Exposés longs