

## Seminario de Probabilidades de Chile

**Orador: Paul Maurer (INRIA)**

**Título: A comparison theorem for integrated stochastic Volterra models with application to the modelling of Lagrangian intermittency in turbulence**

### Resumen:

We introduce a stochastic model for the Lagrangian velocity and dissipation of a turbulent flow, which takes the form of an integrated Volterra process, as already proposed in the literature. In order to understand how to reproduce the multifractal behaviours predicted by the Kolomogorov refined theory, we propose a way to compare the effects of different Volterra kernels on the statistics of the integrated process.

Since Volterra processes are not Markovian, we use the martingale approach and the functional Itô formula from [Viens, Zhang 2019], combined with the path-dependent PDEs from [Bonesini, Jacquier, Pannier 2023]. This allows to get back to the traditional methods to analyse the weak error between two integrated process with different kernels. The result obtained could also be used to derive weak convergence rates of numerical methods based on Markovian approximation of such processes (eg. the Laure Coutin approximation) without the help of the strong rate.

El enlace para conectarse al seminario es:

Unirse a la reunión Zoom

<https://reuna.zoom.us/j/84521834914?pwd=OTZ6Y0NWM3pYTGtTbEt3c0luTG96UT09>

ID de reunión: 845 2183 4914

Código de acceso: 997973

**Modalidad híbrida en la sala Multimedia CMM, Beauchef 851, Torre Norte Piso 6.**  
**Miércoles 23 de octubre 2024 a las 16:15 hrs.**

