# Séminaire de Probabilités et Statistique

## Mardi 20 Avril à 14h00

ZOOM


## Avi Mayorcas

Oxford


*Pathwise Regularisation by Noise in Interacting Particle Systems*


The idea of pathwise regularisation emanated from Davie's work in '07, which used the notion of time averaging to study the regularising effect of Brownian motion on otherwise ill-posed deterministic dynamics. Since then interest in the topic has grown, Catellier & Gubinelli '16, Galeati & Gubinelli '20, Harang & Galeati '20, to name only a few.

In this talk I will discuss an application of these ideas to interacting particle systems with singular potentials. We establish well-posedness of the particle system, mean field equation and establish the mean field limit, all under the inclusion of a single, suitably regularising path in the dynamics. I will also discuss some ongoing work regarding regularisation of McKean—Vlasov equations by fractional Brownian motion.

Based on a joint work with F. Harang, (arXiv:2010.15517) and ongoing work with L. Galeati & F. Harang.