

Title: Regularisation by noise with subcritical drifts or multiplicative noise

Abstract: The extent to which a random perturbation can regularise a differential equation depends on the scaling of noise, leading to a natural notion of criticality. Counterexamples are available in the supercritical case, but positive results are often far from the critical threshold. In this work we identify a scale of vector fields for which we give a comprehensive solution theory in the complete subcritical regime for any fractional Brownian noise. In the second part of the talk, we discuss well-posedness with multiplicative noise. This combines pathwise integration tools such as rough paths with the very probabilistic tools of regularisation by noise. Joint works with Konstantinos Dareiotis (Leeds) and Lucio Galeati (Bonn).