

Séminaire de Probabilités et Statistique

Mardi 27 septembre 2022 à 14h00

Laboratoire Dieudonné

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*Regularization by noise for rough differential equations driven by
Gaussian rough paths*

We consider the rough differential equation with drift driven by a Gaussian geometric rough path. Under natural conditions on the rough path, namely non-determinism, and uniform ellipticity conditions on the diffusion coefficient, we prove path-by-path well-posedness of the equation for poorly regular drifts. In the case of the fractional Brownian motion B^H for $H > \frac{1}{4}$, we prove that the drift may be taken to be $\kappa > 0$ Hölder continuous and bounded for $\kappa > \frac{3}{2} - \frac{1}{2H}$. A flow transform of the equation and Malliavin calculus for Gaussian rough paths are used to achieve such a result.

Ressource : <https://arxiv.org/abs/2207.04251>

This is a joint work with Romain Duboscq