NONLINEAR FOKKER–PLANCK EQUATIONS WITH FRACTIONAL LAPLACIAN AND MCKEAN–VLASOV SDES WITH LÉVY–NOISE

Michael Röckner (Bielefeld University)

Abstract

This talk is concerned with the existence of mild solutions to nonlinear Fokker–Planck equations with fractional Laplace operator $(-\Delta)^s$ for $s \in (\frac{1}{2}, 1)$. The uniqueness of Schwartz distributional solutions is also proved under suitable assumptions on diffusion and drift terms. As applications, weak existence and uniqueness of soultions to McKean–Vlasov equations with Lévy–Noise, as well as the Markov property for their laws are proved.

Joint work with:
Viorel Barbu, Al.I. Cuza University and Octav Mayer Institute of Mathematics of Romanian Academy, Iaşi, Romania

References

[1] arXiv 2210.05612.