

Moment estimates for solutions of SPDEs with Lévy colored noise

Raluca Balan

University of Ottawa

Although the study of SPDEs with multiplicative Lévy noise has gained significant attention in recent years, little is known about SPDEs with colored Lévy noise, even in the finite-variance setting. In this talk, we estimate the moments of nonlinear SPDEs driven by Lévy noise that is white in time and colored in space in a finite-variance framework. Our approach relies on the so-called Rosenthal inequality, which implies that for a sufficiently regular kernel, we can obtain intermittency properties of the solution. In particular, for the Riesz kernel, we use the Hardy-Littlewood-Sobolev inequality. Additionally, we study the regularity of the solution's paths in both time and space.

In Special Session 45 on Stochastic Partial Differential Equations at the Mathematical Congress of the Americas 2025.