Mathematics, Statistics, and Computer Science   **@ UIC**

Statistics and Data Science Seminar

Noisy differential equations with power type coefficients

Samy Tindel (Purdue University)

Abstract: We are interested in this talk in ordinary differential equations with a noisy term and a diffusion type coefficient of the form $|x|^a$, with a constant a smaller than 1.

This kind of equation has a long story in stochastic analysis. We will first review some of the efforts made by Yamada and Watanabe in this direction (when the equation is driven by a Brownian motion), as well as more some recent developments concerning stochastic PDEs.

We will then introduce two extensions of Young's integral which allows to handle the case of equations driven by a Gaussian signal whose paths are Hölder continuous with Hölder exponent greater than $1/2$. Notice that only existence results are obtained, the uniqueness part being still widely open.

This presentation is based on a joint work with J. León and D. Nualart.

Wednesday, March 9 at 4:00 PM in SEO 636