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➤ **TUESDAY 13 FEBRUARY 2018, 15:30 - CIB BI A0 448**

Dr. Carsten Chong (EPFL, Lausanne, Switzerland)
will present a seminar entitled:

“Stochastic PDEs driven by Lévy noise”

Abstract:

In this talk, we discuss stochastic PDEs subjected to non-Gaussian space-time white noise. First, we consider the stochastic heat equation driven by such a Lévy noise, which, in contrast to Gaussian noise, is discontinuous in all non-trivial cases. After presenting results on the existence of solutions, we analyze in detail the impact of these jump discontinuities on the regularity properties of the solution. To this end, we will consider sample path properties of the solution as a measure of local regularity, and the long-time asymptotics of the solution as a measure of global regularity. In both cases, we find that the solution to the heat equation with Lévy noise behaves differently, and much more irregularly than the solution to the same equation in the presence of Gaussian noise.

In the second part of the talk, we move on to a nonlinear generalization of the heat equation: the dynamical Φ^4_3 model, a prime example of an ill-posed stochastic PDE, which, in the case of Gaussian noise, can be renormalized using the theory of regularity structures by M. Hairer (2014). As a first step towards solving this equation with Lévy noise, we discuss a graphical multiplication formula for iterated stochastic convolutions, and explain how the required renormalization constants can be derived from this result. Furthermore, we show that the size of these renormalization constants is intimately related to the local regularity of the Lévy noise.

Lausanne, 26 January 2018/ AA/vl