Pathwise Stieltjes integrals of discontinuously evaluated stochastic processes with applications to stochastic differential equations

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Time **Thursday, May 17, 2018 at 14:00**
Place **Campus Belval, MNO 5A (fifth floor)**

In this talk we study the existence of pathwise Stieltjes integrals for Hölder continuous integrator and integrand having infinite p-variation for all values of p, and we discuss a notion of sufficient variability for the integrand which ensures the existence of the integral in a pathwise sense. We also show that the integral can be defined as a limit of RiemannStieltjes sums for a large class of processes, and provide new estimates on the accuracy of numerical approximations of such integrals. We illustrate the applicability of our results with a variety of examples. In the end of the talk we discuss application to stochastic differential equations. In particular, we provide existence and uniqueness result for a new class of equations with a general driving force.