May 2, 2014
KAP 414
3:30 PM – 4:30 PM

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"Viscosity solutions to fully nonlinear stochastic PDEs and rough paths"

Abstract:

In this talk we will first review the definition of viscosity solutions for partial differential equations, as well as basic concepts of rough paths analysis. Then we will propose a definition of viscosity solutions to fully nonlinear PDEs driven by a rough path via appropriate notions of test functions and rough jets. These objects will be defined as controlled processes with respect to the driving rough path. We show that this notion is compatible with the seminal results of Lions and Souganidis and with the recent results of Friz and coauthors on fully non-linear SPDEs with rough drivers.