

February 9, 2015
KAP 414
2:00 pm- 3:00

Prof. Andrzej Swiech (Georgia Tech University)

“Bellman integro-PDE in Hilbert spaces and optimal control of stochastic PDE driven by Levy type noise.”

Abstract: We will present a theory of viscosity solutions for Hamilton-Jacobi-Bellman integro-PDE in Hilbert spaces. Such equations are the dynamic programming equations associated with optimal control problems for stochastic PDE driven by a noise of Levy type. We will discuss the questions of uniqueness and existence of viscosity solutions, in particular the issues around the dynamic programming principle. We will also discuss applications of the results to the so called non-local Black-Scholes-Barenblatt equation that originates from the Heath-Jarrow-Morton-Musiela model of bond prices. This is a joint work with J. Zabczyk.