



**On September 2014
the 29th**

from 10:00AM to 12:00AM

**At Ecole Polytechnique
ENSTA Paristech**

Andrzej Ruszczyński, Rutgers University

Dynamic Risk-Averse Optimization

In the first part of the talk we shall present main ideas of risk modeling in decision problems under uncertainty: utility functions, mean-risk models, measures of risk and stochastic dominance. We shall discuss their relations and their use in optimization problems. We shall then focus on main questions of modeling risk in dynamical systems and discuss the property of time consistency and the resulting interchangeability in optimization models.

In the second part of the talk we shall discuss risk-averse dynamic optimization models and corresponding solution methods. Special attention will be paid to models of risk-averse control of Markov systems. We shall refine the concept of time-consistency for these models and introduce Markov risk measures. We shall develop dynamic programming equations, review solution methods, and present some examples.