

April 25th, 2016

KAP 414

2:00 P.M. – 3:00 P.M.

Professor Roumald Elie

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“Design of Optimal Incentives for a System of Competitive Agents in Interaction”

Abstract: We consider a model where a Principal requires to design a large number of contracts with separate Agents. In this framework, each Agent will be in charge of one project, whose continuous stochastic dynamics can be influenced by any agent. More specifically, each agent can choose to make efforts towards managing his own project, but can also decide to impact (positively or negatively) the projects of the other agents. Considering economic agents in competition with relative performance concerns, we look towards the optimal way for the principal to contract with the interacting agents and discuss in particular the role of competition in this framework. The enhanced resolution of the problem relies heavily on the connection between Nash equilibria and Backward Stochastic Differential Equations. The mean field limit case will be briefly discussed. This is a joint work with Dylan Possamai (Univ. Paris-Dauphine).