

Séminaire CEPN-LAGA

19 Octobre en K301 à 10H30

Conférencier: Matheus Grasselli, Sharcnet Chair in Financial Mathematics, Professeur à McMaster University

"Investment under uncertainty and competition in incomplete markets"

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Résumé de la présentation: _

Using replication and arbitrage arguments originally derived for financial markets, the Real Options approach attempts to calculate the value of time flexibility for a decision to be taken under uncertainty. Generally, the added option value leads to a more conservative investment rule than the one arising from Net Present Value considerations. On the other hand, it is well understood that postponing an investment

in a competitive environment can be disadvantageous if the competitors take the lead and eliminate the opportunity of later investment. Therefore, the real options approach needs to be supplemented by a theory of competitive behavior, and the techniques of game theory are well suited for this.

Recent literature on the subject proposes to interlace options and games into a combined pricing-decision structure. This is achieved through the following rules: (i) whenever a particular outcome of a game involves a wait-and-see strategy, its value is calculated as a real option and (ii) whenever the pay-off of an option at a given time involves a game, its value is calculated as the equilibrium solution to the game. An obvious drawback of this framework is that implicitly assume that the equilibrium solution to every game played along the way can, at least in principle, be replicated by trading in a financial asset.

In this talk Matheus Grasselli will explain how to supplement these rules with a utility-based valuation scheme to be used when such completeness assumption is not satisfied. He will then implement the paradigm for the generic case of two competing firms in both continuous and discrete time.