Seminario di Finanza Quantitativa e di Probabilità

Lunedì 18 marzo 2019
ore 11:00

Scuola Normale Superiore
Pisa
Aula Bianchi Scienze

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Terrà un seminario dal titolo:

"On the convergence problem in mean field games: a two state model without uniqueness"

Abstract:

Mean field games are limit models for symmetric non-cooperative dynamic N-player games as the number of players N tends to infinity. The notion of solution usually adopted for the prelimit models is that of a Nash equilibrium. The convergence problem consists in making the passage to the limit rigorous. For Nash equilibria in Markov feedback strategies, Cardaliaguet, Delarue, Lasry, and Lions (2015) established convergence under the condition that the so-called master equation possesses a unique (regular) solution. This implies uniqueness of solutions for the mean field game. Here, we consider a simple two-state mean field game that exhibits multiple solutions. We show that the (uniquely determined) Markov feedback Nash equilibria of the associated N-player games select, as N tends to infinity, a particular solution of the mean field game. That solution can be characterized in different ways, as the unique entropy solution of the master equation interpreted as a scalar conservation law, but also as the optimizer of an associated deterministic control problem.

Tutti gli interessati sono invitati a partecipare.

Classe di Scienze

06/03/2019