In the framework of the activities of the PhD programme in Mathematical Sciences

Prof. **Luciano Campi**

University of Milan

will offer a PhD course on

Mean field games and applications

Abstract

Mean field games (MFGs) are optimization problems with constraint on the law of the state variable, arising naturally as limit in some sense of certain symmetric stochastic differential games for a large population of players. They have been introduced in the seminal papers by Lasry and Lions (2006) and Huang, Caines and Malhamé (2006). The main feature of such games is that each player responds optimally to the average behaviour of the rest of population. In the last 10 years, MGFs have found many diverse applications in different fields, such as macroeconomics, finance, population dynamics, engineering and so on. In this course we will concentrate on the mathematical properties of such games and some of their relevant applications. In particular, we will follow the probabilistic approach to find the solutions and characterize them in some way.

Scheduling

The course will be held at the Department of Mathematics, Via C. Saldini n.50 – Milano

from 7 to 25 February 2022 with the following scheduling:

Monday **7**, hours **10:30-12:30**

Wednesday **9**, hours **10:30-12:30**

Thursday **10**, hours **14:30-16:30**

Monday **14**, hours **10:30-12:30**

Wednesday **16**, hours **10:30-12:30**

Friday **18**, hours **10:30-12:30**

Monday **21**, hours **10:30-12:30**

Wednesday **23**, hours **10:30-12:30** and **15:30-17:30**

Friday **25**, hours **10:30-12:30**

Room: **Aula Dottorato**, 1st floor