

Notes on the course on Mean Field Games (MFG) - Schedule

To replace the last courses on the MFG system, which should have taken place at the end of March, I wrote some notes on the online course in order to help the lecture, with exercises. These courses are organized in 4 parts:

- **Course 1:** formal discussion and interpretation of the mean field games system (based on Section 4.1)
(relatively easy, but requires some intuition)
- **Course 2:** existence of a solution to the MFG system (based on Sections 4.2.1 and 4.2.2)
(difficult and technical - however the heart of the theory)
- **Course 3:** uniqueness of the solution of the MFG system and applications to games with finitely many players (based on Sections 4.2.3 and 4.2.5)
(uniqueness is easy and beautiful - application to games with a finite number of players is less easy, but interesting since it makes the link between MFG and the mean field theory)
- **Course 4:** derivative on the space of measures and the master equation (Based on Section 5)
(the most abstract part, but derivatives with respect to measures is fun).