

On Mean Field Games

by

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Abstract:

This talk will be a general presentation of Mean Field Games (MFG in short), a new class of mathematical models and problems introduced and studied in collaboration with Jean-Michel Lasry. Roughly speaking, MFG are mathematical models that aim to describe the behavior of a very large number of agents who optimize their decisions while taking into account and interacting with the other agents. The derivation of MFG, which can be justified rigorously from Nash equilibria for N players games, letting N go to infinity, leads to new nonlinear systems involving ordinary differential equations or partial differential equations. Many classical systems are particular cases of MFG like, for example, compressible Euler equations, Hartree equations, porous media equations, semilinear elliptic equations, Hamilton-Jacobi-Bellman equations, Vlasov-Boltzmann models... In this talk we shall explain in a very simple example how MFG models are derived and present some overview of the theory, its connections with many other fields and its applications.

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Venue: Connie Fan Multi-media
Conference Room
4/F, Cheng Yick-chi Building
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All are Welcome