ABSTRACT OF THE TALK

The theory of mean field type control, developed by Bensoussan, Frehse and Yam, aims at describing the behaviour of a large number of interacting agents using a common feedback. A type of problems that have raised a lot of interest recently are dealing with congestion effects to model situations in which the cost of displacement of the agents increases in the regions where the density is large. I will present a system of partial differential equations arising in this setting. The main result is the existence and uniqueness of suitably defined weak solutions, which are characterized as the optima of two optimal control problems in duality. If time permits, I will also discuss a numerical method to solve this problem and present some numerical results.

This is a work done under the supervision of Prof. Yves Achdou, University Paris 7.

BIOGRAPHY

Mathieu Lauriere is a PhD Student at Laboratoire Jacques-Louis Lions, Université Paris Diderot - Paris 7.