

Controllability of Fokker-Planck equations and the planning problem for Mean Field Games

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The planning problem in Mean Field Games theory is a kind of optimal transportation problem which consists in driving the distribution of the agents from an initial configuration to a final one following a strategy which is optimal for the agents' cost. We discuss one possible form of this problem, resulting into the exact controllability at time T of Fokker-Planck equations through the action of the drift, which plays the role of optimal feedback control for (the distribution law of) the associated stochastic process.

With PDE's methods, we prove existence and uniqueness of the optimal planning under suitable conditions for the cost functional and the initial/terminal distributions.