

October 23, 2023
2:00pm-3:00pm
KAP 414

Prof. Joseph Jackson
(University of Chicago)

The convergence problem in mean field control

Abstract: This talk will be about the convergence problem in mean field control (MFC), i.e. the challenge of rigorously justifying the convergence of certain "symmetric" N -particle control problems towards their mean field counterparts. On the one hand, this convergence problem is already well-understood from a qualitative perspective, thanks to powerful probabilistic techniques based on compactness. On the other hand, quantitative results (i.e. rates of convergence) are more difficult to obtain, in large part because the value function of the mean field problem (which is also the solution to a certain Hamilton-Jacobi equation on the Wasserstein space) may fail to be C^1 , even if all the data is smooth. After giving an overview of the convergence problem, I will discuss the results of two recent joint works with Cardaliaguet, Daudin, Delarue, and Souganidis, in which we use some ideas from the theory of viscosity solutions to overcome this lack of regularity and obtain rates of convergence of the N -particle value functions towards the value function of the corresponding MFC problem.

Zoom Link: USC Math Finance Colloquium

Time: October 23, 2023 02:00 PM Pacific Time (US and Canada)

Join Zoom Meeting

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