

=====

Berlin Probability Colloquium: (Wed. 6.7., 17:15, TU room: MA 043)

Title:

A probabilistic approach to the convergence of large population games to mean field games

Abstract: Games involving a large population of interacting agents are common around us. They arise in many applications such as physics, epidemiology, economics, or finance. Unfortunately, such games are highly untractable; analytically, but especially computationally. This motivated the introduction of mean field games. These are infinite population idealizations of Nash equilibrium problems in symmetric, finite population games in the microscopic regime. Mean field games present enormous advantages, and their study has given rise to an important literature over the past decade with striking applications. The rigorous understanding of the convergence problem of large population games to mean field games has seen less activity, especially regarding quantitative estimations of the convergence. This talk will review recent progress on this question, with a fully probabilistic method based on a new form of propagation of chaos.

Research Seminar Stochastische Analysis und Stochastik der Finanzmärkte (Thur.7.7., both talks at HU, math.institute, Adlershof)

TALK-1 (7.7.,HU RUD25, room R.1.115, 16:30)

Title: *A probabilistic approach to the convergence of large population games to mean field games: Games in the strong formulation*

Abstract: This talk will discuss the convergence problem of mean field games in the strong formulation. The specific example of a price impact model will be presented. If time allows it, an application to stochastic optimal transport will be discussed to showcase the relevance of the method beyond mean field games.

TALK (7.7.,HU RUD25, room R.1.115, 17:45)

Title: *A probabilistic approach to the convergence of large population games to mean field games: Games in the weak formulation*

Abstract: This talk will discuss the convergence problem of mean field games in the weak formulation. A specific case study will be discussed. Time permitting, we will finish with an outlook on the case of players in non-symmetric interaction.