



Ludovic Tangpi

(Princeton University)

Wednesday 6 July 2022

17:15 h – Berlin Probability Colloquium



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Thursday 7 July 2022

16:30 h – Research Seminar: Stochastic Analysis and Mathematical Finance

17:45 h – Research Seminar: Stochastic Analysis and Mathematical Finance

@ TU Berlin, Math Building, Room MA 043

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

Mean field games are infinite population idealizations of Nash equilibrium problems in symmetric, finite population games in the microscopic regime. They present enormous advantages, and their study has given rise to an important literature over the past decade with striking applications.

Coming from [AIMS South Africa](#), Ludovic Tangpi started his doctorate as a BMS student at HU Berlin under direction of Michael Kupper, before following his supervisor to Konstanz. After postdoc positions in Konstanz and Vienna, he is now Assistant Professor at Princeton University. His visit to the stochastics group at HU is enabled through the Berlin-AIMS Network in Stochastic Analysis in the [DAAD program for cooperations with AIMS](#). ▴

This talk is the opening for a mini-series and will be followed by two in-depth presentations on strong and weak formulations for such games and applications. For more information, see [here](#).

@ HU Berlin, Johann von Neumann Haus, Room 1'115

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

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. ▴

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

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. ▴