

On Boltzmann mean field games

Marie-Therese Wolfram

In this talk I will focus on a generalisation of a Boltzmann mean field game (BMFG) for knowledge growth, originally introduced by the economists Lucas and Moll. In BMFG the evolution of the agent density with respect to their knowledge level is described by a Boltzmann equation. Agents increase their knowledge through binary interactions with others; their increase is modulated by the interaction and learning rate: Agents with similar knowledge learn more in encounters, while agents with very different levels benefit less from learning interactions.

I will discuss different aspects and challenges of this model related to its analysis, limiting behaviour and numerical simulations.