

Fully nonlinear parabolic mean field games, local and nonlocal

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Abstract

A *mean field game* is a special system of PDEs consisting of a Hamilton–Jacobi and a Fokker–Planck equation. In this talk I will introduce a class of fully nonlinear mean field games posed in $[0, T] \times \mathbb{R}^d$ derived from a control problem for local or nonlocal diffusions (Lévy processes).

Under some abstract assumptions, existence and uniqueness of solutions can be established. I will discuss two special cases: strongly degenerate equations of order less than one, and a class of nondegenerate equations.