Semi-Lagrangian schemes for second order mean field game problems

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joint work with E. Carlini

Abstract

In this talk we consider a possibly degenerate second order mean field game system. We propose a fully discrete semi-Lagrangian discretization and we provide its main properties. Convergence results will be discussed and numerical simulations will be displayed.

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References

- E. CARLINI AND F. J. SILVA, A Fully Discrete Semi-Lagrangian Scheme for a First Order Mean Field Game Problem, SIAM J. Numer. Anal. 52-1 (2014), pp. 45-67.
- [2] E. CARLINI AND F. J. SILVA, Semi-Lagrangian schemes for mean field game models, 52nd IEEE Conference on Decision and Control December 10-13, 2013. Florence, Italy.
- [3] E. CARLINI AND F. J. SILVA, A Fully Discrete Semi-Lagrangian Scheme for a Second Order Mean Field Game Problem, in preparation.