27th IFIP TC7 Conference 2015 on System Modelling and Optimization

MS18 Modeling and Control of Multi-agent Systems

A proximal splitting method to solve some mean field games systems

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Abstract: In this talk we present a proximal splitting method to solve a discretized version of a mean field game problem with local interactions, introduced by Achdou et al. (2010). The presence of local interactions imply that, at the continuous level, the MFG system can be formally obtained as the optimality condition of an associated variational problem. The same argument applies in the discretized version. However, since one of the terms in the cost function is only sub-differentiable, a suitable splitting method is used to obtain a globally convergent algorithm. We will discuss in this talk both: the evolutive and the stationary cases. This talk is based on a current collaboration with L. Briceño (UTFSM) and D. Kalise (RICAM).