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MS18 Modeling and Control of Multi-agent Systems

Optimal control problems for multi-agent systems

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Abstract: Multi-agent systems are often introduced in settings where a certain target is sought to be achieved, e.g. flocking, minimum evacuation time, leader tracking, etc. In this talk, we present an optimal control problem formulation of such problems. In this context, multi-agent systems can be steered towards an expected behavior by means of a minimal use of control capabilities. We discuss different problem settings and solution methods. We present numerical experiments assessing the performance of the proposed approximation schemes.

References

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[2] M. Bongini, M. Fornasier, D. Kalise. *(Un)conditional consensus emergence under perturbed and decentralized feedback controls*, to appear in Continuous and Discrete Dynamical Systems - Series A, 2015.