Broadcasting Stabilization for Dynamical Multi-Agent Systems

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Abstract : This paper deals with a stabilization problem for multi-agent systems, when all agents in a multi-agent system receive the same broadcasting control signal and the controller can measure not each agent output but the sum of all agent outputs. It is analytically shown that when the sum of all agent outputs is bounded with a certain broadcasting controller for a given reference, each agent output is separately bounded:stabilization of the sum of agent outputs always results in the stability of every agent output. A numerical example is presented to illustrate our theoretic findings in this paper.