Bipartite consensus of linear discrete-time multiagent systems with exogenous disturbances under competitive networks

ABSTRACT

This paper investigates the bipartite consensus of linear discrete-time multiagent systems (MASs) with exogenous disturbances. A discrete-time disturbance-observer- (DTDO-) based technology is involved for attenuating the exogenous disturbances. And both the state feedback and observer-based output feedback bipartite consensus protocols are proposed by using the DTDO method. It turned out that bipartite consensus can be realized under the given protocols if the topology is connected and structurally balanced. Finally, numerical simulations are presented to illustrate the theoretical findings