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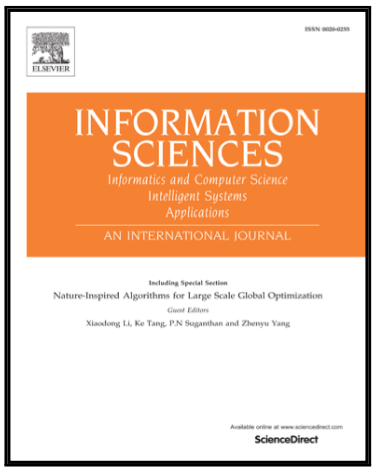

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Distributed Integral-Based Event-Triggered Scheme for Cooperative Output Regulation of Switched Multi-Agent Systems

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Abstract

This paper is concerned with the event-triggered cooperative output regulation problem of a switched linear multi-agent system. Firstly, a novel distributed integral-based event-triggered communication scheme, which only adopts discrete information of neighboring agents, is developed. The event-triggered scheme promises several advantages such as no continuous communication among the agents, the exclusion of Zeno behavior, and a significant reduction of triggered events. Secondly, an effective agent-dependent switching law, permitting all the switched subsystems of each agent are unstabilizable, is designed to guarantee the feasibility of cooperative output regulation for the switched multi-agent system. Finally, the effectiveness and merits of the proposed event-triggered cooperative output regulation method are validated through an illustrative example.

Keywords: Distributed integral-based event-triggered scheme, switched multi-agent systems, cooperative output regulation.

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