

عنوان مقاله:

Modeling Time-Delay in Consensus Control: A Review

محل انتشار:

مجله تحقیق و فناوری در صنعت برق، دوره 2، شماره 1 (سال: 1402)

تعداد صفحات اصل مقاله: 12

نویسندگان:

Samaneh Behjat - Department of Electrical Engineering, Marvdasht Branch, Islamic Azad University, Marvdasht, Iran

Mohammad Reza Salehizadeh - Department of Electrical Engineering, Marvdasht Branch, Islamic Azad University, Marvdasht, Iran

Giulio Lorenzini - Dipartimento di Ingegneria e Architettura, Università di Parma, Parco Area delle Scienze ۱۸۱/A, ۴۳۱۲۴ Parma, Italy

خلاصه مقاله:

A multi-agent system (MAS) consists of spatially distributed agents that data exchanges between them through a communication network. A protocol among the agents to reach the consensus is designed by cooperative control technique. Generally, time-delay is a challenge of control systems. Specifically, the time-delay problem is receiving more attention in the cooperative control of MASs because of the more probable time-delay in data transmission among the agents. Time-delay reduces the control effectiveness by deteriorating stability and the performance of the control protocol. These drawbacks demand careful time-delay consideration in cooperative control of MASs. In this paper, we carry out a survey on the methods for mitigating time-delay impacts in cooperative control of MASs by reviewing about ۱۰۰ papers. Time-delay can result from natural/unintentional causes such as limited communication bandwidth, packet dropout, or overhead in communicating and from cyber-attack/intentional causes that flood the communication network. Moreover, we classify the methods based on the location of occurrence and the type of delay. In the end, our perspective on the future research direction is presented.

کلمات کلیدی:

Consensus Control, Control Protocol, Graph, Multi-Agent System (MAS), Time-Delay

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/2057680>

