

[2007-1048]Memory State Feedback Control for Singular Systems with Multiple Internal Incommensurate Constant Point Delays

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摘要

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[2007-1048]Memory State Feedback Control for Singular Systems with Multiple Internal Incommensurate Constant Point Delays

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Abstract

In this paper, the problem of delay-dependent stabilization for singular linear continuous-time systems with multiple internal incommensurate constant point delays (SLCS-MIID) is investigated. The condition when a singular system subject to point delays is regular independent of time delays is given and it can be easily test with numerical or algebraic methods. Based on the Lyapunov-Krasovskii functional approach and the descriptor integral-inequality Lemma, a sufficient condition for delay-dependent stability is obtained. The main idea is to design multiple memory state feedback control laws such that the resulting closed-loop system is regular independent of time delays, impulse free, and asymptotically stable via solving some strict linear matrix inequalities (LMIs) problem. An explicit expression for the desired memory state feedback control law is also given. Finally, a numerical example illustrates the effectiveness and the availability for the proposed method.

Key words [Singular systems](#), [Multiple internal point delays](#), [Descriptor integral-inequality](#), [Delay-dependent stabilization](#), [Memory state feedback control](#).

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