

DYNAMIC OUTPUT FEEDBACK GUARANTEED COST CONTROL FOR LINEAR SYSTEMS WITH INTERVAL TIME-VARYING DELAYS IN STATES AND OUTPUTS

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TÓM TẮT:

This paper addresses the dynamic output feedback guaranteed cost control problem of a class of time-delay systems where the state and output contain interval nondifferentiable time-varying delays. The proposed controller uses only the delayed output measurement to stabilize the closed-loop system and guarantee an adequate level of system performance. By constructing a set of multiple Lyapunov–Krasovskii functionals which include triple-integral terms, a new criterion for the existence of dynamic output feedback guaranteed cost controllers is established and expressed in terms of linear matrix inequality (LMI). A numerical example is given to illustrate the obtained results.