Static Output Feedback Stabilization for State/Input Delay Systems

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Abstract: The static output feedback stabilization problem of control systems with a time-delay in both the state and input is considered in this paper. By using a change of the state variable combining with the Lyapunov-Krasovskii method, a new sufficient condition for existence of the static output feedback controller is proposed in terms of matrix inequalities with one parameter need to be tuned, which can be solved by incorporating an one-dimensional search method into the Matlab's LMI toolbox. Three numerical examples are provided to illustrate the effective of obtained result.

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