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Output Feedback Passive Control of Neutral Systems with Time-Varying Delays in State and Control Input

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Abstract: This paper is concerned with the passive control problem of neutral systems with time-varying delays. Time-varying delays are assumed to appear in both the state and the control input. A state feedback passive controller and an output feedback passive controller for neutral systems with time-varying delays in state and control input are presented. Through modifying algebraic Riccati equation, we can construct controllers which depend on the maximum value of the time derivative of time-varying delays. A numerical example is also given to illustrate the effectiveness of the proposed design method.

Keywords: *Neutral system; output feedback passive control; time-varying delays; Riccati equation.*

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