

Nonlinear Bounded Control for Time-Delay Systems .

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Abstract: A method to derive a nonlinear bounded state feedback controller for a linear continuous-time system with time-delay in the state is proposed. The controllers are based on an ϵ -parameterized family of algebraic Riccati equations or on an ϵ -parameterized family of LMI optimization problems. Hence, nested ellipsoidal neighborhoods of the origin are determined. Thus, from the Lyapunov–Krasovskii theorem, the uniform asymptotic stability of the closed-loop system is guaranteed and a certain performance level is attained through a quadratic cost function.

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