ON ROBUST STABILITY OF LINEAR NEUTRAL SYSTEMS WITH MIXED DELAYS AND NORM-BOUNDED UNCERTAINTY

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ABSTRACT

This paper investigates the robust stability of linear neutral systems with mixed delays and norm-bounded uncertainty. Using new Lyapunov-Krasovskii functionals, less conservative delay-dependent robust stability conditions for such systems in terms of linear matrix inequalities (LMIs) are derived. Numerical examples show that the results obtained in this paper significantly improve the estimate of the stability limit over some existing results in other literature.

KeyWords: Neutral systems, delay, stability, LMIs.