Robust Stability and Stabilization of Linear Polytopic Discrete-time Systems with Interval Time-varying Delays

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Abstract: This paper addresses the robust stability for a class of linear discrete-time systems with interval time-varying delays. Based on the parameter-dependent Lyapunov-Krasovskii functional, new delay-dependent conditions for the robust stability are established in terms of linear matrix inequalities. An application to robust stabilization of linear discrete-time control systems is given. Numerical examples are included to illustrate the effectiveness of our results.

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