

## **ASYMPTOTIC STABILITY OF NONLINEAR DELAY- DIFFERENCE CONTROL SYSTEM VIA MATRIX INEQUALITIES**

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### **Abstract**

In this paper, we obtain some criteria for determining the asymptotic stability of the zero solution of nonlinear delay-difference control system in terms of certain matrix inequalities by using a discrete version of the Lyapunov second method.

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**Keywords:** Asymptotic stability; Lyapunov function; Nonlinear delay-difference control system; Matrix inequalities.