International J. of Math. Sci. & Engg. Appls. (IJMSEA) ISSN 0973-9424, Vol. 3 No. IV (2009), pp. 53-61

ASYMPTOTIC STABILITY OF TIME VARYING DELAY-DIFFERENCE SYSTEM WITH TIME-VARYING DELAY OF HOPFIELD NEURAL NETWORKS VIA MATRIX INEQUALITIES

KREANGKRI RATCHAGIT

Abstract

In this paper, we derive a sufficient condition for asymptotic stability of the zero solution of time varying delay-difference system with time-varying delay of Hopfield neural networks in terms of certain matrix inequalities by using a discrete version of the Lyapunov second method.

Key Words and Phrases : Asymptotic stability, Time varying delay-difference system with timevarying delay, Hopfield neural networks, Lyapunov function, Matrix inequalities.