Nonlinear Dynamics and Systems Theory, 6(2) (2006) 205-210



Existence of Nonoscillatory Solution of High-Order Nonlinear Difference Equation

Xiaozhu Zhong¹, Jingcui Liang¹, Yan Shi^{2*}, Donghua Wang¹ and Lixia Ge¹

¹School of Science, Yanshan University, Qinghuangdao 066004, China ²School of Information Science, Kyushu Tokai University, Kumamoto 862-8652, Japan

Received: March 25, 2005; Revised: May 25, 2006

Abstract: In this paper, the existence of the nonoscillatory solution to the equation of a class of high-order nonlinear neutral delay difference is investigated. By using fixed point theorem, a sufficient condition is proposed for the existence of eventually positive solution.

Keywords: Difference equation; oscillation; positive solution.

Mathematics Subject Classification (2000): 35D05, 35E05.