Meeting: 1003, Atlanta, Georgia, AMS CP 1, AMS Contributed Paper Session

1003-34-469 **Eric R. Kaufmann*** (erkaufmann@ualr.edu), Univeristy of Arkansas at Little Rock, Department of Mathematics & Statistics, 2801 S. University, Little Rock, AR 72204-1099, and **Youssef N. Raffoul** (youssef.raffoul@notes.udayton.edu), Department of Mathematics, University of Dayton, Dayton, OH 45469-2316. *Periodic solutions for neutral nonlinear dynamical system on a time scale.*

Let $\mathbb{T}$ be an unbounded periodic time scale. We use a fixed point theorem due to Krasnosel'skiĭ to show that the nonlinear neutral dynamic system with delay

$$x^{\Delta}(t) = -a(t)x^{\sigma}(t) + c(t)x^{\Delta}(t-k) + q\left(t, x(t), x(t-k)\right), t \in \mathbb{T},$$

has a periodic solution. Furthermore, under a slightly more stringent inequality we show that the periodic solution is unique using the contraction mapping principle. (Received September 15, 2004)