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	authors	<ul style="list-style-type: none">A. ArdjouniA. Djoudi	authors	<ul style="list-style-type: none">A. ArdjouniA. Djoudi	NOT DUPLICATES	537
	title	Existence of Periodic Solutions for Nonlinear Neutral Dynamic Equations with Functional Delay on a Time Scale	title	Existence of periodic solutions for first-order totally nonlinear neutral differential equations with variable delay		
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abstract	Let \mathbb{T} be a periodic time scale. The purpose of this paper is to use a modification of Krasnoselskii's fixed point theorem due to Burton to prove the existence of periodic solutions on time scale of the nonlinear dynamic equation with variable delay $x^{\triangle}(-a(-t)h(-t)x^{\sigma}(-t) + c(t)x^{\widetilde{\triangle}}(-t-r(-t)) + G(-t,x(-t),x(-t-g(t))), x(-t-r(-t)) + c(t)x^{\triangle}(t-g(t))Q'(x(t-g(t))) + G(t,x(t),x(t-g(t)))$, $t \in \mathbb{T}$, where f^{\triangle} is the \triangle -derivative on \mathbb{T} and $f^{\widetilde{\triangle}}$ is the \triangle -derivative on $(id-r)(\mathbb{T})$. We invert the given equation to obtain an equivalent integral equation from which we define a fixed point mapping written as a sum of a large contraction and a compact map. We show that such maps fit very nicely into the framework of Krasnoselskii's Burton's fixed point theorem so that the existence of periodic solutions is concluded. The results obtained here extend the work of Yankson [Yankson, E.: Existence of periodic solutions for totally nonlinear neutral differential equations with functional delay Opuscula Mathematica 32, 3 (2012), 617-627].	abstract	We use a modification of Krasnoselskii's fixed point theorem due to Burton (see [Liapunov functionals, fixed points and stability by Krasnoselskii's theorem, Nonlinear Stud. 9 (2002), 181--190], Theorem 3) to show that the totally nonlinear neutral differential equation with variable delay $\begin{equation*} x'(t) = -a(t)h(x(t)) + c(t)x'(t-g(t))Q'(x(t-g(t))) + G(t,x(t),x(t-g(t))), \end{equation*}$ has a periodic solution. We invert this equation to construct a fixed point mapping expressed as a sum of two mappings such that one is compact and the other is a large contraction. We show that the mapping fits very nicely for applying the modification of Krasnoselskii's theorem so that periodic solutions exist.			
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