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	authors	<ul style="list-style-type: none"><li>A. Ardjouni</li><li>A. Djoudi</li></ul>	authors	<ul style="list-style-type: none"><li>A. Ardjouni</li><li>A. Djoudi</li></ul>	NOT DUPLICATES	532
	title	The existence of periodic solutions for a second order nonlinear neutral differential equation with functional delay	title	Existence of periodic solutions for first-order totally nonlinear neutral differential equations with variable delay		
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	id	id-1832595271075805063	id	id-3454279600008381480		
	abstract	In this article we study the existence of periodic solutions of the second order nonlinear neutral differential equation with functional delay $d \, dt \, x \, (t) + p \, (t) \, d \, dt \, x \, (t) + q \, (t) \, x \, (t) = d \, dt \, g \, (t, x \, (t^{\wedge} \tilde{I}, (t))) + f \, (t, x \, (t), x \, (t^{\wedge} \tilde{I}, (t)))$ . The main tool employed here is the Burton-Krasnoselskii's hybrid fixed point theorem dealing with a sum of two mappings, one is a large contraction and the other is compact.	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 $x'(t) = -a(t)h \, (x(t)) + c(t)x'(t-g(t))Q' \, (x(t-g(t))) + G \, (t,x(t),x(t-g(t))),$ 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.		
	versions		versions			