ROCKY MOUNTAIN
JOURNAL OF MATHEMATICS
Volume 38, Number 1, 2008

ON THE OSCILLATION OF FIRST ORDER DELAY DYNAMIC EQUATIONS WITH VARIABLE COEFFICIENTS

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ABSTRACT. In this paper we obtain some new oscillation and nonoscillation criteria for the first order delay dynamic equation with variable coefficients

$$y^{\Delta}(t) + \sum_{i=1}^{n} p_i(t) y(\tau_i(t)) = 0$$

on a time scale $\mathbf{T}$. Moreover, a new sufficient condition for oscillation of

$$y'(t) + \sum_{i=1}^{n} p_i(t) y(\tau_i(t)) = 0$$

is obtained.

1. Introduction. In recent years, the theory of time scales, which was introduced by Stefan Hilger in his Ph.D. thesis in 1988 in order to unify continuous and discrete analysis, has received a lot of attention, see [**8**]. In fact, there has been much research concerning the oscillation and nonoscillation of solutions of differential equations on time scales (or measure chains). We refer the reader to recent papers [**1, 5, 6, 10**] and the references cited therein. A book on the subject of time scales, by Bohner and Peterson [**2**], summarizes and organizes much of time scales calculus, see also the book by Bohner and Peterson [**3**] for advances in dynamic equations on time scales.

In this paper, we are concerned with oscillation and nonoscillation of the first order delay dynamic equation with variable coefficients

$$y^{\Delta}(t) + \sum_{i=1}^{n} p_i(t) y(\tau_i(t)) = 0 \tag{1.1}$$

2000 AMS *Mathematics subject classification.* Primary 34C10, 34K11, 39A10, 39A99.
Keywords and phrases. Oscillation, time scales, delay, dynamic equation.
Received by the editors on July 8, 2005, and in revised form on October 31, 2005.
DOI:10.1216/RMJ-2008-38-1-1