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Oscillation for a Certain Nonlinear Second Order Dynamic Equation on a Time Scale. Preliminary report.

We discuss the oscillatory behavior of the nonlinear second-order functional dynamic equation

$$(p(t)x^\Delta(t))^\Delta + q(t)f(x(g(t))) = 0$$

on a time scale $\mathbb{T} \subset \mathbb{R}$ with $\sup \mathbb{T} = \infty$. We establish a sufficient and necessary condition which ensures that every solution oscillates. Next we establish the equivalence of the oscillation of the above dynamic equation and the nonlinear second-order dynamic equation

$$(p(t)x^\Delta(t))^\Delta + q(t)f(x^\sigma(t)) = 0$$

on time scales. Finally, we obtain a comparison theorem for the functional dynamic equation. (Received September 18, 2007)