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Positive Solutions of a Second Order m-point BVP on Time Scales

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Abstract: In this study, we are concerned with proving the existence of multiple positive solutions of a general second order nonlinear m-point boundary value problem (m-PBVP)

$$u^{\Delta\nabla}(t) + a(t)u^{\Delta}(t) + b(t)u(t) + \lambda h(t)f(t,u) = 0,\ t \in [0,1],$$

$$u(\rho(0)) = 0,\quad u(\sigma(1)) = \sum_{i=1}^{m-2} \alpha_i u(\eta_i),$$

on time scales. The proofs are based on the fixed point theorems in a Banach space. We present an example to illustrate how our results work.

Keywords: *m-point boundary value problems, positive solutions, fixed point theorems, time scales.*

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