



**TWO-POINT BOUNDARY VALUE PROBLEMS FOR
SECOND-ORDER q -SYMMETRIC
DIFFERENCE EQUATIONS**

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Abstract

In this paper, we investigate the existence of positive solutions to the q -symmetric differences boundary value problem (BVP):

$$\begin{cases} \tilde{D}_q^2 u(t) = f(t, u(t)), & t \in I, \\ u(0) = \eta u(1), \quad \tilde{D}_q u(0) = \xi \tilde{D}_q u(1). \end{cases}$$

\tilde{D}_q is q -symmetric derivative. By applying some standard fixed point theorems and Leray-Schauder nonlinear alternative, some existence results of positive solutions are obtained.

Keywords and phrases: q -symmetric difference equations, boundary value problem, existence, fixed point.

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