

Basic properties of an eigenparameter-dependent q -boundary value problem

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This paper is devoted to study a boundary value problem consisting a differential equation of second order with q -Jackson derivative and eigenparameter dependent boundary conditions. We introduce a modified inner product in a suitable direct sum space $L_q^2[0, \pi] \oplus \mathbb{C}^2$ and define a symmetric linear operator in this space in such a way that the considered problem can be interpreted as an eigenvalue problem of this operator. We investigate the eigenvalue and eigenfunction properties of this boundary value problem and we construct Green's function.

References

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