

Novel Hardy Type Inequalities via Steklov Operator on Time Scales

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Abstract:

This study derives some new Hardy-type inequalities via Steklov operator on time scales in two variables. They are proved by introducing restriction on the operator in several cases. They have been playing a critical role in solution of difference initial-boundary problems and proof the existence and uniqueness properties of solutions. To prove the inequalities, we use some concepts in time scale version such as time scales calculus, theorem of Fubini and the inequality of Holder.

Keywords:

Time scales, inequality of Hardy and Copson, Steklov-operator.