

数学

一类分数阶差分方程边值问题递增正解的存在性

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摘要:

在度量空间中利用不动点定理, 研究一类带有分数阶边界条件的分数阶差分方程递增正解的存在性. 借助Green函数的性质, 分别建立了该方程存在唯一递增非负解的充分条件及存在唯一严格递增正解的充分条件.

关键词: 分数阶边界条件; Green函数; 严格递增

Existence of Positive and Nondecreasing Solution of Boundary Value Problems for a Class of Fractional Difference Equations

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Abstract:

Using fixed point theorem in metric space, the authors studied the existence of positive and nondecreasing solution for a class of the fractional difference equations with fractional boundary conditions. With the aid of some characteristics of the Green's function, we obtained sufficient conditions for the existence of a unique nonnegative and nondecreasing solution to this class of equations. And we discussed the existence and uniqueness of a positive and strictly increasing solution to this equations.

Keywords: fractional boundary conditions Green's function strictly increasing

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