

# 一类推广的具有时滞的Pachpatte离散不等式及其应用

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收稿日期 2008-12-11 修回日期 网络版发布日期 2009-8-25 接受日期

**摘要** 不仅把Pachpatte的离散不等式推广成时滞不等式,而且把不等式中的常数项推广成连续的正函数.推广后的不等式不仅包含了更多项,且不要求函数的单调性.利用单调化技巧给出了不等式中未知函数的估计.最后用得到的结果研究时滞差分方程初值问题解的唯一性与有界性.

**关键词** [离散不等式](#), [单调性](#), [时滞差分方程](#), [有界性](#), [唯一性](#).

**分类号** [26D10](#), [26D15](#), [26D20](#), [35A05](#), [35B35](#)

## A Generalized Pachpatte's Discrete Inequality with Delays and Its Applications

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**Abstract** In this paper, Pachpatte's discrete inequality is generalized to a retarded form, where not only delays are included but the constant term is generalized to a positive function. In the generalized inequality, there are more complex terms and the monotonicity of given functions is not required. Estimation of unknown function in the inequality is given by a technique of monotonization. Finally, the result is applied to discuss boundedness and uniqueness of solution for the initial value problem of a delay difference equation.

**Key words** [Discrete inequality](#) [monotonicity](#) [delay difference equation](#) [boundedness](#) [uniqueness](#).

DOI:

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