

具高阶Laplace算子的非线性脉冲时滞双曲型方程的振动判据

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摘要 研究一类具高阶Laplace算子的非线性脉冲时滞双曲型偏微分方程的振动性, 利用特征函数法和一阶脉冲时滞微分不等式, 获得了该类方程在两类不同边值条件下所有解振动的若干充分性判据. 所得结论充分反映了脉冲和时滞在振动中的影响作用.

关键词 [脉冲, 双曲型偏微分方程, 振动性, 高阶Laplace算子.](#)

分类号 [34A37, 35L70, 35R12](#)

Oscillation Criteria for Nonlinear Impulsive Delay Hyperbolic Equations with Higher Order Laplace Operator

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Abstract Oscillatoy properties of a class of nonlinear impulsive delay hyperbolic partial differential equations with higher order Laplace opertor is studied. By using the eigenvalue function method and first order impulsive delay differential inequalities, some sufficient criteria for the oscillation of all solutions of the equations are obtained under two kinds of different boundary conditions. The results fully reflect the influence of impulse and delay in oscillation.

Key words [Impulse](#) [hyperbolic partial differential equation](#) [oscillation](#) [higher order Laplace operator.](#)

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