

论文

二阶椭圆型微分方程解的振动定理

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摘要:

考虑二阶非线性椭圆型微分方程 $\sum_{i,j} \partial^2 A_{i,j}(x,y) / \partial x_i \partial x_j + q(x)f(y) = 0$ (E), 其中 $q(x)$ 在外区域 $\Omega \in R^{n+1}$ 上变号. 利用偏 Riccati 变换和积分平均技巧, 建立了方程(E)所有解振动的充分准则.

关键词: 振动; 二阶椭圆型微分方程; 积分平均; 偏Riccati变换

分类号:

35J60; 34C35; 34K25

Oscillation Theorems for Elliptic Equations of Second Order

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Abstract:

Consider the second order elliptic equations $\sum_{i,j} \partial^2 A_{i,j}(x,y) / \partial x_i \partial x_j + q(x)f(y) = 0$ (E), Some oscillation criteria are obtained for Eq.(E) in an exterior domain $\Omega \in R^n (n \geq 2)$, where $q(x)$ is allowed to change sign. Generalized partial Riccati transformation and averaging technique are employed to establish our results.

Keywords: Oscillation Elliptic equations of second order Averaging technique Generalized partial Riccati transformation

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