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Interval oscillation criteria for a forced second-order nonlinear differential equations with damping.  (English) Zbl 1235.34104


Summary: We are concerned with the oscillation behavior for the forced second-order nonlinear differential equation

\[(r(t)k_1(x(t), x'(t)))' + p(t)k_2(x(t), x'(t))x'(t) + q(t)f(x(t)) = e(t), \quad t \geq t_0,\]

where \(t_0 \geq 0\) is a fixed real number, \(r \in C^1([t_0, \infty), (0, \infty))\), \(p, q, e \in C([t_0, \infty), \mathbb{R})\), \(f \in C(\mathbb{R}, \mathbb{R})\), and \(k_1 \in C^1(\mathbb{R}^2, \mathbb{R})\), \(k_2 \in C(\mathbb{R}^2, \mathbb{R})\).

MSC:

34C10 Oscillation theory, zeros, disconjugacy and comparison theory for ordinary differential equations

Keywords:

interval criteria; oscillation; second order; nonlinear damping; forced term

Full Text: DOI

References:


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