OSCILLATION OF EVEN ORDER NONLINEAR NEUTRAL DIFFERENTIAL EQUATIONS WITH DAMPING

Y. ŞAHINER YILMAZ AND A. ZAFER

Abstract. Oscillation criteria for even order differential equations of the following form

\[ z^{(n)}(t) + p(t)\phi(z^{(n-1)}(t)) + q(t)|x(\sigma(t))|^{\alpha}\sgn[x(\sigma(t))]) = 0, \]

where

\[ z(t) = x(t) + a(t)x(\tau(t)), \quad \alpha > 0, \quad \text{and} \quad n \text{ is even} \]

are obtained via comparison with second order differential inequalities. It is shown that existence of no eventually positive solution of a certain second order delay differential inequality is sufficient for every solution \( x(t) \) of the above equation to be oscillatory.


Key words and phrases: Oscillation, damping term, neutral equation.

REFERENCES

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