Oscillation Criteria for Second Order Neutral Delay Differential Equations

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The authors present some sufficient conditions for the oscillation of second order neutral delay differential equation

$$(a(t)(z'(t))^{\beta})' + q(t)x^{\gamma}(\sigma(t)) = 0, \ t \geq t_0 > 0,$$

where $z(t) = x(t) + p(t)x(\tau(t))$. The neutral differential equations find wide range of applications in certain high-tech fields, such as control theory, mechanical engineering, physics, population dynamics, economics, ... From these discussions, we can see that the investigation of oscillatory and asymptotic behavior of solutions of second order neutral delay differential equations is of great importance in both theory and applications.

References

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