

Title: Oscillation and nonoscillation of perturbed half-linear Euler differential equations

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Using general results for (non)oscillation of the second order half-linear differential equation

$$(r(t)\Phi(x'))' + c(t)\Phi(x) = 0, \quad \Phi(x) := |x|^{p-2}x, \quad p > 1, \quad (*)$$

we establish new oscillation and nonoscillation criteria for the perturbed half-linear Euler differential equation

$$(\Phi(x'))' + \left[\frac{\gamma_p}{t^p} + c(t) \right] \Phi(x) = 0, \quad \gamma_p := \left(\frac{p-1}{p} \right)^p.$$

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