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Half-linear oscillation theory. (English) Zbl 1040.34040

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Summary: Basic results and methods of the oscillation theory of half-linear second-order differential equations are presented. It is shown that a certain p -degree functional and the Riccati-type differential equation play here a similar role as quadratic functionals and the classical Riccati equation in the linear oscillation theory. These results are used then to study oscillatory properties and principal solutions of the generalized Euler equation.

MSC:

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

Keywords:

half-linear equation; generalized Euler equation; Riccati equation; Sturmian theory; Picone's identity