

Bartušek, Miroslav; Graef, John R.

The strong nonlinear limit-point/limit-circle properties for super-half-linear equations.

(English) [Zbl 1148.34023](#)

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Summary: The authors consider the nonlinear second order differential equation

$$a(t)|y'|^{p-1}y' + r(t)|y|^\lambda \operatorname{sgn} y = 0, \quad (\text{E})$$

where $p > 0$, $\lambda > 0$, $a(t) > 0$, $r(t) > 0$, and $\lambda > p$ (the super-halflinear case). They give necessary and sufficient conditions for equation (E) to be of the strong nonlinear limit-circle type and for (E) to be of the strong non-linear limit-point type. Examples illustrating the results are also included.

MSC:

- [34B20](#) Weyl theory and its generalizations for ordinary differential equations
- [34C11](#) Growth and boundedness of solutions to ordinary differential equations
- [34D05](#) Asymptotic properties of solutions to ordinary differential equations

Cited in **2** Documents