

Zou, Lan; Chen, Xingwu**Center conditions for polynomial Liénard equation.** (English) [Zbl 1199.34163](#)

J. Sichuan Univ., Nat. Sci. Ed. 45, No. 5, 1051-1056 (2008).

Summary: Necessary and sufficient conditions are studied for the coefficients of the polynomials $f(x)$ and $g(x)$ such that the Liénard equation $\ddot{x} + f(x)\dot{x} + g(x) = 0$ has non-degenerate centers. An algorithm to calculate the center conditions is presented.

MSC:

- 34C05** Topological structure of integral curves, singular points, limit cycles of ordinary differential equations
- 34C07** Theory of limit cycles of polynomial and analytic vector fields (existence, uniqueness, bounds, Hilbert's 16th problem and ramifications) for ordinary differential equations

Keywords:

Liénard equation; non-degenerate center; pseudo division