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Lienard system

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Entry type	Definition
Classification	msc 34-00
Defines	Lienard equation

A *Lienard system* is a planar ordinary differential equation

$$\dot{x} = y - f(x)$$
$$\dot{y} = -g(x)$$

with conditions on the smoothness of f and g. It is equivalent to the following second order ordinary differential equation

$$\ddot{x} + f'(x)\dot{x} + g(x) = 0.$$

Example:

- van der Pol equation

References

[P] PERKO, LAWRENCE, *Differential Equations and Dynamical Systems*, Springer, New York, 2001.