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Global stability of solutions of certain third-order nonlinear differential equations. (English)

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Summary: By employing Lyapunov's second method, we obtain sufficient conditions which ensure that the zero solution of the equation

$$\ddot{x} + \psi(x, \dot{x}, \ddot{x})\dot{x} + f(x, \dot{x}) = 0$$

is globally asymptotically stable. Our result improves and includes some well-known results established in the relevant literature.

MSC:

34D23 Global stability of solutions to ordinary differential equations

Cited in 4 Documents