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Periodic solutions of a class of superquadratic second order Hamiltonian systems. (English)

[Zbl 0974.34039](#)

Appl. Math., Ser. B (Engl. Ed.) 15, No. 3, 259-266 (2000).

Here, based on saddle point theorem, the authors obtain a sufficient condition for the periodic solution to autonomous second-order differential equations $\ddot{x} + Ax + \nabla F(x) = 0$, where the function F satisfies superquadratic conditions, and A is a symmetric matrix. Related results can be found in *A. Bahri* and *H. Berestycki* [*Commun. Pure Appl. Math.* 33, 403-442 (1984; [Zbl 0588.34028](#))] and *Y. Long* [*Trans. Am. Math. Soc.* 311, 749-780 (1989; [Zbl 0676.34026](#))]. In particular, Long's result can be applied to the above equations to obtain a stronger conclusion.

Reviewer: [Bin Liu \(Beijing\)](#)

MSC:

[34C25](#) Periodic solutions to ordinary differential equations

[37J40](#) Perturbations of finite-dimensional Hamiltonian systems, normal forms, small divisors, KAM theory, Arnol'd diffusion

[70H05](#) Hamilton's equations

Cited in **2** Documents

Keywords:

[periodic solutions](#); [critical points](#)

Full Text: [DOI](#)

References:

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