

Werk

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Proof. The hypotheses of Corollary 1 are satisfied by choosing C as in (ii).

(A₃) Consider the equation

$$(9) \quad x'' + x'(1 - x^2) - x = \mu p(t),$$

where $p(t)$ is continuous in t . If $K < -\frac{1}{2}$ and if $p(t)$ is periodic of period w then (9) has a w -periodic solution.

Proof. If $0 < C \leq 1$, $0 < \varepsilon < 1/\sqrt{|K|}$, and $|\mu| \leq (1 - \varepsilon(\sqrt{|K|})) C/B$, where $B = \text{Max}_{t \in [0, w]} |p(t)|$, then by Corollary 1 (9) has a w -periodic solution.

References

- [1] G. G. Hamedani: Periodic Boundary Value Problems for Nonlinear Second Order Vector Differential Equations. To appear in Revue Roum. De Math. Pures Et App.
- [2] B. Mehri and G. G. Hamedani: On the Existence of Periodic Solutions of Nonlinear Second Order Differential Equations, SIAM J. Appl. Math. Vol. 29, No. 1, July 1975.

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