

Sessão: Análise e Aplicações

On periodic third-order Ambrosetti-Prodi-type problems

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This work concerns the solvability of third-order periodic fully problems with a weighted parameter, where the nonlinearity must verify only a local monotone condition and no periodic, coercivity or super or sublinearity restrictions are assumed, as usual in the literature.

The arguments are based on a new type of lower and upper solutions method, not necessarily well ordered. A Nagumo growth condition and Leray–Schauder’s topological degree theory are the existence tools.

Periodic problems require a more delicate approach due to the specific behavior of the solution. We will discuss, based on a weighted parameter, the existence, and non-existence of a solution.

References

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- [2] Minhós, Feliz, On some third order nonlinear boundary value problems: existence, location and multiplicity results, *J. Math. Anal. Appl.*, Vol. 339/2 (2008) 1342-1353