

Luís SANCHEZ

CMAFcIO - Faculdade de Ciências da Universidade de Lisboa

Title: *Remarks on periodic resonant problems with bounded nonlinear dissipation*

Abstract:

In a paper published in *Electr. J. Diff. Eq.* (2000), Alan C. Lazer (1938-2020) gave a simple proof of necessary and sufficient conditions for the existence of a periodic solution to a second order ODE with a nonlinear damping term and the linear part at resonance. This and related problems have been considered by many authors. We discuss a discrete version of the result, and make further comments on the ODE topic, including a variation in the proofs. The Poincaré-Miranda theorem and related statements are in evidence in our procedure. The exposition is based on joint work with Luís Ferreira and with João G. Silva.