

Mês de: FEVEREIRO 2015

**SEMINÁRIO DE ANÁLISE E EQUAÇÕES
DIFERENCIAIS**

(Atenção à alteração do dia e hora habitual do seminário)

Dia 11 de Fevereiro (quarta-feira), às 12h, na Sala B3-01

Comparison Results for the Hill's Equation

Alberto Cabada

(Universidade de Santiago de Compostela, Espanha)

Abstract:

In this talk we make an overview on the sign properties of the Green's function related to the periodic boundary value problem

$$L_a x \equiv x'' + a(t)x = 0, \quad x(0) = x(T), \quad x'(0) = x'(T),$$

with a sign-changing potential a .

We present some recent explicit criteria that ensure the maximum or anti – maximum principle character of this equation. Such properties are equivalent to the negativeness or positiveness of the Green's function on its set of definition.

Moreover, we study the monotonicity dependence of the Green's function with respect to the potential a .

A. Cabada, J. A. Cid, *On the sign of the Green's function associated to Hill's equation with an indefinite potential*, Appl. Math. Comput. 205 (2008) 303 – 308.

A. Cabada, J. A. Cid, *On comparison principles for the periodic Hill's equation*, J. Lond. Math. Soc. (2) 86 (2012), 1, 272 – 290.

R. Hakl, P. J. Torres, *Maximum and antimaximum principles for a second order differential operator with variable coefficients of indefinite sign*, Appl. Math. Comput. 217 (2011) 7599 – 7611.

P. J. Torres, *Existence of one-signed periodic solutions of some second-order differential equations via a Krasnoselskii fixed point theorem*, J. Differential Equations 190 (2003) 643 – 662.

M. Zhang, *Optimal conditions for maximum and antimaximum principles of the periodic solution problem*, Bound. Value Probl. 2010, Art. ID 410986, 26 pp.

