Applied Mathematics

McGill Applied Mathematics Seminar

March. 30, 2007, 2:35 pm FRIDAY
At McGill, Burnside Hall 708

"PERIODIC SOLUTIONS OF DIFFERENTIAL DELAY EQUATIONS WITH SEVERAL DELAYS."

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Coffee and refreshments will be served after the seminar

Abstract:

I'll begin with a description of what differential equations are and why they are of interest, and review some highlights from the theory of single-delay equations of the form

$$x'(t) = F(x(t-1)).$$

I'll then present a result on the existence of periodic solutions of equations with several delays

$$x'(t) = \sum_{i=1}^{D} F_i(x(t-d_i)),$$

where the F_i are continuous and similar (in an appropriate sense) to step functions. The approach is to link this equation to the much more tractable problem

$$y'(t) = \sum_{i=1}^{D} h_i(y(t-d_i))$$

where the h_i are in fact step functions.