

Centre de recherches mathématiques  
Université de Montréal

Atelier conjoint AARMS-CRM : Progrès récents sur les équations  
différentielles fonctionnelles et avec retard  
Du 1 au 5 novembre 2007

*Joint AARMS-CRM Workshop: Recent Advances in Functional and Delay  
Differential Equations  
November 1-5, 2007*

## **HORAIRE / PROGRAM**

Meeting Rooms :  
Student Union Building, 6136 University Avenue

*Plenary and Invited Talks: Room 224/226,*

*Contributed Talks: Session A, Room 224/226 and Session B, Room 303*

Le jeudi 1 novembre 2007 / *Thursday, November 1, 2007*

**Session - Plenary Talk**

**09:00 - 10:00 Gerard Iooss** (Université de Nice)  
*“Localized waves in lattices of Fermi-pasta-Ulam type”*

**Session - Invited Talks**

**10:00 - 10:40 Hadi Susanto** (University of Massachusetts)  
*“Mobility of discrete solitons in Hamiltonian quadratic nonlinear media”*

**10:40 - 11:00** *Coffee break*

**11:00 - 11:40 Dmitri Pelinovsky** (McMaster University)  
*“One-parameter localized traveling waves in nonlinear Schrödinger lattices”*

**11:40 - 12:20 Vassilis Rothos** (Aristotle University of Thessaloniki)  
*“Periodic solutions in functional differential equations”*

**12:20 - 14:00** *Lunch break*

**Session - Invited Talks**

**14:00 - 14:40 Panayotis Panayotaros** (IIMAS-UNAM)  
*“Breather solutions in the discrete NLS with parametric forcing”*

**14:40 - 15:20 Luciano Buono** (University of Ontario Institute of Technology)  
*“Delays, oscillations and Hopf bifurcations in drug delivery systems”*

**15:20 - 15:40** *Coffee break*

**15:40 - 16:20 Michael C. Mackey** (McGill University)  
*“Understanding the dynamics of gene regulatory systems: a mathematical modeling approach”*

**16:20 - 17:00 Xingfu F. Zou** (University of Western Ontario)  
*“Modeling latency and relapse in diseases by delay differential equations”*

**17:00** *Reception*

Le vendredi 2 novembre 2007 / *Friday, November 2, 2007*

**Session - Plenary Talk**

**09:00 - 10:00 Cesar Palencia** (Universidad de Valladolid)  
*“Runge–Kutta convolution quadrature methods for linear”*

**Session - Invited Talks**

**10:00 - 10:40 Penny Davies** (University of Strathclyde)  
*“Discontinuous Galerkin approximations for first kind Volterra integral equations”*

**10:40 - 11:00** *Coffee break*

**11:00 - 11:40 Arvet Pedas** (University of Tartu)  
*“Smoothing transformation and piecewise polynomial collocation for weakly singular Volterra integro-differential equations”*

**11:40 - 12:20 Hermann Brunner** (Memorial University of Newfoundland)  
*“The computational solution of Volterra integral equations with highly oscillatory kernels”*

**12:20 - 14:00** *Lunch break*

**Session - Invited Talks**

**14:00 - 14:40 Anna Vainchtein** (University of Pittsburgh)  
*“The relative role of dispersion, dissipation and inertia in dynamics of martensitic phase boundaries ”*

**14:40 - 15:20 Erik S. Van Vleck** (University of Kansas)  
*“Embedding lattice differential equations in reaction-diffusion equations and some systems of lattice differential equations”*

**15:20 - 15:40** *Coffee break*

**15:40 - 16:20 Christopher E. Elmer**  
*“Traveling wave solutions to bistable reaction diffusion equations on spatially discrete domains (with some applications)”*

**16:20 - 17:00 Antony R. Humphries** (McGill University)  
*“Travelling waves on lattices defined by car-following models”*

**Le samedi 3 novembre 2007 / *Saturday, November 3, 2007***

**Session - *Plenary Talk***

**09:00 - 10:00 Nicola Guglielmi** (Università degli Studi di L'Aquila)  
*"Numerics of delay differential equations"*

**Session - *Invited Talks***

**10:00 - 10:40 Alfredo Bellen** (Università di Trieste)  
*"Solving neutral delay differential equations with state-dependent delays"*

**10:40 - 11:00** *Coffee break*

**11:00 - 11:40 Stefano Maset** (Università di Trieste)  
*"Time transformation for Delay Differential Equations"*

**11:40 - 12:20 Dimitri Breda** (University of Udine)  
*"Stability analysis of the Gurtin-MacCamy model"*

**12:20 - 14:00** *Lunch break*

**Session A - *Contributed Talks***

**14:00 - 14:40 Wayne H. Enright** (University of Toronto)  
*"The reliability/efficiency trade-off for a class of interpolation schemes for ODE solvers"*

**14:40 - 15:20 Rossana Vermiglio** (University of Udine)  
*"Computation of characteristic values for partial retarded functional differential equations"*

**15:20 - 15:40** *Coffee break*

**15:40 - 16:20 Jean-Philippe Lessard** (Rutgers University)  
*"Local uniqueness of the slowly oscillating periodic solutions of the Wright's equation"*

**16:20 - 17:00 Chunhua Ou** (Memorial University of Newfoundland)  
*"Analysis of blood cancer model: periodic chronic myelocytic Leukemia"*

**Session B - Contributed Talks**

**14:00 - 14:40 Gergely Röst** (University of Szeged)

*“Global attractors for non-monotone delayed feedback”*

**14:40 - 15:20 Mohit Adhikari** (University of New Mexico)

*“Transition layers in a singularly perturbed differential-delay equation”*

**15:20 - 15:40** *Coffee break*

**15:40 - 16:20 Guillaume Lajoie** (McGill University)

*“Wave blocking phenomenon, a dynamical systems approach”*

Le dimanche 4 novembre 2007 / *Sunday, November 4, 2007*

**Session - Plenary Talk**

**09:00 - 10:00 Tibor Krisztin** (University of Szeged)  
*“Differential equations with state-dependent delay”*

**Session - Invited Talks**

**10:00 - 10:40 Hans-Otto Walther** (Universitaet Giessen)  
*“State-dependent delay, smoothness, and periodic solutions”*

**10:40 - 11:00** *Coffee break*

**11:00 - 11:40 Istvan Gyori** (University of Pannonia)  
*“Stability and asymptotic representation of the solutions of state-dependent delay equations”*

**11:40 - 12:20 Ferenc Hartung** (University of Pannonia)  
*“Neutral differential equations with state-dependent delays”*

**12:20 - 14:00** *Lunch break*

**Session - Invited Talks**

**14:00 - 14:40 John Mallet-Paret** (Brown University)  
*“Singularly perturbed state-dependent delay-differential equations”*

**14:40 - 15:20 Jayme De Luca** (Universidade Federal de São Carlos)  
*“Variational integrator for a mixed-type delay equation of electrodynamics”*

**15:20 - 15:40** *Coffee break*

**15:40 - 16:20 David J.N. Wall** (University of Canterbury)  
*“Mathematical modelling cell population growth with applications to cancer therapy in human”*

**16:20 - 17:00 Xiaoqiang Zhao** (Memorial University of Newfoundland)  
*“Spatial dynamics of a reaction-diffusion population model with age-structure”*

Le lundi 5 novembre 2007 / *Monday, November 5, 2007*

---

**Session - Plenary Talk**

**09:00 - 09:00 Jianhong Wu** (York University)  
*“Neural computation with periodic attractors: memory and time lags”*

**Session - Invited Talks**

**10:00 - 10:40 Sue Ann Campbell** (University of Waterloo)  
*“Phase models with time delay”*

**10:40 - 11:00** *Coffee break*

**11:00 - 11:40 Jianfu Ma** (York University)  
*“Transition and coexistence of periodic patterns in spiking neuron models of delayed recurrent inhibitory loops”*

**11:40 - 12:20 Jacques Bélair** (Université de Montréal)  
*“Modelling with stage-structure AND variable lifespan”*