

Centre de recherches mathématiques
Université de Montréal

Mini-cours : Les algorithmes avancés et logiciels numériques pour l'analyse
de bifurcation des systèmes dynamiques
Du 30 juin au 1 juillet 2007

Minicourse: Advanced Numerical Techniques in Applied Dynamical Systems
June 30 - July 1, 2007

HORAIRE / PROGRAM

Conférences : salle 1360
Ordinateurs : salle 1340
Pauses-café : salle 1221

Lectures: Room 1360
Computers: Room 1340
Coffee Breaks: Room 1221

Le samedi 30 juin 2007 / *Saturday, June 30, 2007*

08:30 Inscription et Café (1221) / *Registration and Coffee (1221)*

Session 1 - “Introduction to numerical methods for continuation and bifurcation problem in differential equations”

Basic software : AUTO (version AUTO-07P)

09:15 - 10:00 Eusebius Doedel (Concordia University)
“Numerical methods for bifurcation problems I”

10:00 - 10:15 Pause / *Break*

10:15 - 11:15 Session de travail / *Work Session*

11:15 - 11:30 Pause / *Break*

11:30 - 12:15 Eusebius Doedel (Concordia University)
“Numerical methods for bifurcation problems II”

12:15 - 14:00 Pause déjeuner et discussions / *Lunch Break and Discussions*

Session 2 - “Continuation and bifurcation of periodic orbits in Hamiltonian and reversible systems”

Basic software : AUTO (version AUTO-07P)

14:00 - 14:45 André Vanderbauwhede (Universiteit Gent)
“Continuation of periodic orbits in reversible Hamiltonian systems I”

14:45 - 15:00 Pause / *Break*

15:00 - 16:00 Session de travail / *Work Session*

16:00 - 16:15 Pause / *Break*

16:15 - 17:00 André Vanderbauwhede (Universiteit Gent)
“Continuation of periodic orbits in reversible Hamiltonian systems II”

Le dimanche 1 juillet 2007 / *Sunday, July 1, 2007*

08:30 Café (1221) / *Coffee (1221)*

Session 3 - “Numerical analysis of local bifurcations”

Basic software : Content/MatCont

09:15 - 10:00 **Yuri A. Kuznetsov** (Utrecht University)
“Numerical analysis of local bifurcations I”

10:00 - 10:15 Pause / *Break*

10:15 - 11:15 Session de travail / *Work Session*

11:15 - 11:30 Pause / *Break*

11:30 - 12:15 **Yuri A. Kuznetsov** (Utrecht University)
“Numerical analysis of local bifurcations II”

12:15 - 14:00 Pause déjeuner et discussions / *Lunch Break and Discussions*

Session 4 - “Numerical bifurcation analysis of delay and functional differential equations”

Basic software : DDE-BifTool

14:00 - 14:45 **Dirk Roose** (Katholieke Universiteit Leuven)
“Numerical bifurcation analysis of delay differential equations basic software: DDE-BIFTOOL and PDDE-CONT I”

14:45 - 15:00 Pause / *Break*

15:00 - 16:00 Session de travail / *Work Session*

16:00 - 16:15 Pause / *Break*

16:15 - 17:00 **Dirk Roose** (Katholieke Universiteit Leuven)
“Numerical bifurcation analysis of delay differential equations basic software: DDE-BIFTOOL and PDDE-CONT II”