Ecole Normale Supérieure- Kouba, Algiers
and
Abdelhamid Ibn Badis University Mostaganem, Algeria

Organize two schools :

Abstract Differential Equations
Ordinary Differential Equations
May 13-18, 2006

I. PRESENTATION OF THE SCHOOLS

Both of Schools will be held in Algiers for the period 13-18 May 2006, in the same place, and in a parallel way in two distinct rooms. These Schools are mainly intended to Algerian students preparing their PhDs in (**Abstract Differential Equations**) or (**Ordinary Differential Equations**): 3-hour short courses will be given on mornings, specialized lectures, tutorials as well as communications presented by the students, on afternoons.

For practical reasons and organizational restrictions, only a limited number of places is granted: 20 for ADEs and 30 for ODEs. Therefore, the selection of applicants will take into consideration the following « priorities »:

1. *PhD and Second year Master Students working on the subject of the School.*
2. *PhD students working on topics closely related to the schools.*

Selected students are requested to attend all lectures, and will have an opportunity to work and discuss together all day long in reserved rooms.

Books relevant to the fields covered by the Schools will be available in a reading and lending library.

Starting January 2006, electronic access to lecture notes of some basic courses (see below some titles) will be available to the participants, who will be assumed to have studied these notes.

Details regarding the lectures as well as the programs will be communicated to all participants in due time.

Important Dates

31.12.2005: Deadline for application and registration.
14.01.2006: Notification of acceptance;
Free access to some basic courses.
13.05.2006: Beginning of the Schools.

Working languages: French, English

Contact (For registration and information):

ADEs School: B.-K. Sadallah: SADALLAH@ENS-KOUBA.DZ, SADALLAH@WISSAL.DZ
ODEs School: S. Djebali: DJEBALI@ENS-KOUBA.DZ, DJEBALI@HOTMAIL.COM

II. Abstract Differential Equations and Sums of Operators

Specific methods related to Abstract Differential Equations will be described and illustrated by means of many concrete applications.

MAIN TOPICS Of THE SCHOOL

1. Linear Operators Theory (4 sessions).
2. Semi-groups and Interpolation (2 sessions).
3. Sums of linear operators (3 sessions).
4. Abstrat Differential Equations (3 sessions).

LECTURERS

Aissa Aibeche (Sétif University), **Mohamed Denche** (Constantine University), **Mustapha Jazar** (Lebanese University, Beyrouth), **Rabah Labbas** (Le Havre University, France), **Stéphane Maingot** (Le Havre University, France), **Ahmed Medeghri** (Mostaganem University), **Mohand Moussaoui** (Ecole Centrale-Lyon, France), **Boubaker-Khaled Sadallah** (ENS-Kouba, Algiers).

III. Ordinary Differential Equations and Inclusions

This SCHOOL shall be devoted, mainly, to:

"Initial and Boundary Value Problems for Ordinary Differential Equations and Inclusions on bounded and unbounded intervals"

Topics and Lecturers

1. Asymptotic Integration Theory (Asymptotic Behavior of global solutions for IVPs): **Octavian G. Mustafa** (University of Craiova, Romania) and **Yuri V. Rogovchenko** (Eastern Mediteranean University, Famagusta, Turkey).
2. Topological Methods (Leray-Schauder degree, index, topological transversality and continuation methods) with Applications to two-point and multi-point problems: **Abdelkader Boucherif** (KFUPM, Saudi Arabia) and **Smail Djebali** (ENS-Kouba, Algiers).

3. Topological Fixed Point Theory of multivalued mappings with Applications to Differential Inclusions: **Lech H. Gorniewicz** (Schauder Center for Nonlinear Studies, Nicolaus Copernicus University, Torun, Poland).
4. Impulsive Differential Equations and inclusions: **Mouffok Benchohra** (Sidi-Bel-Abbès University) and **Sotiris K. Ntouyas** (University of Ioannina, Greece, to be confirmed).

N.B.: The lectures of Boucherif, Gorniewicz, Mustafa, Ntouyas and Rogovchenko will be delivered in English. A good knowledge of English by the participants is required.

Specialized Lectures or Surveys

Abdelkader Belarbi, Sidi-Bel-Abbès University (*Existence results for perturbed differential inclusions*) ; **Abdelhamid Benmezai**, USTHB, Algiers (On some classes of BVPs with opposite concavities); **Mustapha Jazar**, Lebanese University , Beyrouth (Asymptotic behavior of some ODEs with applications to PDEs) ; **Abdelghani Ouahab**, Sidi-Bel-Abbès University (*Boundary value problems on infinite intervals for functional differential inclusions with infinite delay*).

The following basic courses (ODEs) will be free access for participants (More courses may be added to this list)

1. The first two chapters of the book (to appear) by Mouffok Benchohra, Johnny Henderson and Sotiris Ntouyas: "Impulsive Differential Equations and Inclusions" (to be confirmed).
2. Upper and Lower-solutions methods with applications to ODEs (Survey paper by C. de Coster and P. Habets, 1996; notes written and updated by Ouiza Saifi and Samira Zahar, ENS-Kouba, March 2004).
3. The fixed point index theory with applications to the existence of multiple solutions to BVPs associated to ODEs (notes written and updated by Karima Mebarki, ENS-Kouba, October 2005).
4. BVPs for second order ODEs on bounded intervals (Master courses notes, S. Djebali, ENS-Kouba, Algiers).
5. Leray-Schauder Topological Degree Theory with applications to ODEs (Master courses notes, Smail Djebali, ENS-Kouba, Algiers).

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