



Announcement Workshop, June 2015 PERPIGNAN - France

The **L**aboratory of Mathematics and Physics (LAMPS) of the University of Perpignan Via Domitia (UPVD) organizes the international workshop

Perpignan's Days on Applied Mathematics

The workshop will take place on June 10-12, 2015, with the participation of researchers involved in the European Project Marie Curie FP 7 People No. 295118 Contact - *Nonlinear Inclusions and Hemivariational Inequalities with Applications to Contact*. The lectures will take place in room P114 of the «Institut Franco-Catalan Transfrontalier» building, situated on the main campus of UPVD.

ORGANIZING COMMITTEE

Mircea Sofonea (Chair)
Mikael Barboteu
Robert Brouzet
Sylvia Munoz
Joëlle Sulian

Program

Wednesday, June 10

15:00-17:00 **Chairman : Stanislaw Migorski**

Pannel Discussion on the European Projet Marie Curie FP 7 No. 295118
Contact - *Nonlinear Inclusions, Hemivariational Inequalities
with Applications to Contact Mechanics*:

- Scientific Report;
- Financial Report ;
- Conclusions and perspectives;
- Problems for further research.



Program

Thursday, June 11

09:30-10:00 Registration

10:00-10:30 Opening Ceremony

Chairman : Stanislaw Migorski

10:30-11:10 **Meir Shillor**, Oakland University, Rochester MI, USA,
Population Models for Wood Frogs, Chagas Disease and HIV.

11:10-11:50 **Zhenhai Liu**, Guangxi University of Nationalities, Nanning, China,
On a New Class of Semilinear Differential Mixed Variational Inequalities in Banach Spaces.

12:00-14:00 Lunch

Chairman: Mikaël Barboteu

14:00-14 :30 **Marius Cocou**, LMA, CNRS, Marseille, France,
A Class of Implicit Inequalities and Applications to Dynamic Problems with Coulomb Friction.

14:30-15:00 **Angel Aros**, Universidade de Coruna, Spain,
Derivation of Linearly Viscoelastic Shell Equations by Using Asymptotic Methods.

15:00-15:30 **Anna Ochal**, Jagiellonian University, Krakow, Poland,
Variational-hemivariational Inequalities and Their Applications to Contact Mechanics.

15:30-16:00 **Krzysztof Bartosz**, Jagiellonian University, Krakow, Poland,
Doubly Nonlinear Evolution Subdifferential Inclusions of Second Order.

16:00-16:30 Coffee break

Chairman : Meir Shillor

16:30-17:00 **Yves Dumont**, CIRADE, Montpellier, France,
Modelling Forest-Savanna Interactions Using Impulsive Differential Equations.

17:00-17:30 **Sebastien Gourbière**, Université de Perpignan Via Domitia, France
Mathematics Is Biology's Next Microscope, Only Better.

17:30-17:50 **Mircea T. Sofonea**, MIVEGEC, CNRS, Montpellier, France,
Nested Dynamics with Partial Cotransmission : a General Model for Multiple Infections.

17:50-18:20 **Jan Bulla**, University of Bergen, Norway
and **Christoph Grunau**, Université de Perpignan Via Domitia, France,
Statistical Modelling in Epigenetics: a Pan-species Study of DNA Methylation Patterns by Means of Distributions of CpG o/e.

18:20-18:50 **Emmanuel Amiot**, Lycée F. Arago, Perpignan, France
Tiling Problems in Music.

19:00 Cocktail



Chairman : Zhenhai Liu

- 08:50-09:30 **Dumitru Motreanu**, Université de Perpignan Via Domitia, France,
Comparison and Multiplicity of Solutions for Nonlinear Elliptic Systems and Associated Equations.
- 09:30-10:10 **Stanislaw Migorski**, Jagiellonian University, Krakow, Poland
Hemivariational Inequalities of Evolution Type and their Applications to Contact Mechanics.
- 10:10-10:30 *Coffee break*

Chairman : Dumitru Motreanu

- 10:30-11:00 **Charles Horvath**, Université de Perpignan Via Domitia, France,
Exotic Convexities and more Particularly Tropical Convexities.
- 11:00-11:30 **Walter Briec**, Université de Perpignan Via Domitia, France,
Duality and Separation in Some Idempotent Convex Structures.
- 11:30-12:00 **Oana Serea**, Université de Perpignan Via Domitia, France,
Control Problems via Occupational Measures.
- 12:00-14:00 *Lunch*

Chairman : Anna Ochal

- 14:00-14 :30 **Serge Dumont**, Université de Picardie, Amiens, France,
On Enhanced Descent Algorithms for Solving Frictional Multicontact Problems with a Bi-potential Approach and Application to the Element Method.
- 14:30-15 :00 **Piotr Kalita**, Jagiellonian University, Krakow, Poland,
Pullback Attractor for a Two-dimensional Incompressible Navier-Stokes Flow with Nonmonotone Friction.
- 15:00-15:30 **Mikael Barboteu**, Université de Perpignan Via Domitia, France,
Numerical Modelling of a Dynamic Contact Problem with Normal Compliance, Finite Penetration and Nonmonotone Slip Rate Dependent Friction.
- 15:30-15:50 **Flavius Patrulescu**, Institute of Numerical Analysis, Cluj-Napoca, Romania,
A Mixed Variational Formulation of a Contact Problem with Adhesion.
- 15:50-16:10 **David Danan**, Université de Perpignan Via Domitia, France,
Analysis of Two Active Set type Methods to Solve Unilateral Contact Problems.
- 16:10 *Closing ceremony*