

Updated Program

Nonlinear Models in Partial Differential Equations

An international congress on occasion of Jesús Ildefonso Díaz's 60th birthday
Toledo, June 14-17, 2011

	Tuesday	Wednesday	Thursday	Friday
9:00	Opening			
9:15-9:45	H. Brezis	H. Amann	S. Antontsev	
9:50-10:20	A. Liñán	R. Temam	Sanchez–Palencia	R. Glowinski
10:25-10:55	A. Friedman	A. Fowler	S. Shmarev	M.A. Pozio
	Coffee break	Coffee break	Coffee break	Coffee break
11:30-12:00	G. Hetzer	O. Pironneau	J.L. Vázquez	A. Bermúdez
12:05-12:35	T. Nagai	P. Takac	L. Boccardo	J.M. Rakotoson
12:40-13:10	C. Conca	C. Bandle	J. Flekinger	H. Matano
	Lunch break	Lunch break	Lunch break	Lunch
15:15-15:45	D. Hilhorst	V. Caselles	M.A. Herrero	
15:50-16:20	M. Chipot	F. Murat	H. Attouch	
16:25-16:55	M. Pierre	P. Pedregal	Giacomoni, Madaume-Tort	
17:00-18:00	Posters	Posters		

Tuesday, June 14th

9:15-9:45 **Haim BREZIS.**

Jacobian revisited.

9:50-10:20 **Amable LIÑÁN.**

A free boundary problem arising in the analysis of pressure swirl atomizers.

10:25-10:55 **Avner FRIEDMAN.**

Free boundary problems arising in cancer models.

11:00-11:30 Coffee break.

11:30-12:00 **Georg HETZER.**

Energy Balance Climate Models with Bio-Feedback.

12:05-12:35 **Toshitaka NAGAI.**

A parabolic-elliptic system of drift-diffusion type with subcritical mass in R^2 .

12:40-13:10 **Carlos CONCA.**

Effective Chemical Processes in Porous Media.

13:15-15:15 Lunch break

15:15-15:45 **Danielle HILHORST.**

A nonlinear parabolic-hyperbolic system for contact inhibition of cell-growth.

15:50-16:20 **Michel CHIPOT.**

Some asymptotic issues for variational inequalities.

16:25-16:55 **Michel PIERRE.**

Optimal shapes with convexity constraint.

17:00-18:00 **Posters and Coffee.**

20:30 **Reception at Real Fundación de Toledo.**

Wednesday, June 15th

9:15-9:45 **Herbert AMANN.**

On some singular parabolic equations.

9:50-10:20 **Roger TEMAM.**

Pattern formation: The oscillon equation.

10:25-10:55 **Andrew C. FOWLER.**

Apocalypse now: considerations of past and future climate using generalised energy balance models.

11:00-11:30 Coffee break.

11:30-12:00 **Olivier PIRONNEAU.**

The Partial Differential Equations of Finance.

12:05-12:35 **Peter TAKÁČ.**

Travelling waves in a convection-diffusion equation.

12:40-13:10 **Catherine BUNDLE.**

Asymptotic behavior of solutions of elliptic and parabolic problems blowing up at the boundary.

13:15-15:15 Lunch break.

15:15-15:45 **Vicent CASELLES.**

On the entropy conditions for some flux limited diffusion equations.

15:50-16:20 **François MURAT.**

An example of functional which is weakly lower semicontinuous on $W_0^{1,p}$ for every $p > 2$ but not on H_0^1 .

16:25-16:55 **Pablo PEDREGAL.**

A variational approach to Navier-Stokes.

17:00-18:00 **Posters and Coffee.**

19:00 or 20:00 Slow tourist train through the center of the city.

Thursday, June 16th.

9:15-9:45 **Stanislav N. ANTONTSEV.**

Wave Equation with $p(x,t)$ -Laplacian and Damping Term: Existence and Blow-up.

9:50-10:20 **Evariste SANCHEZ-PALENCIA.**

Competition of subspecies and structural stability. Survival of the best adapted or coexistence?

10:25-10:55 **Sergey SHMAREV.**

Localization properties of solutions of parabolic equations with variable anisotropic nonlinearity.

11:00-11:30 Coffee break.

11:30-12:00 **Juan Luis VÁZQUEZ.**

Nonlinear fractional diffusion equations of porous medium type.

12:05-12:35 **Lucio BOCCARDO.**

Dirichlet problems with singular convection terms and applications with and without Ildefonso.

12:40-13:10 **Jacqueline FLEKINGER.**

On nodal domains of u solution to $-\Delta u = \mu u + f$, $u \in H_0^1(\Omega)$ and μ close to an eigenvalue.

13:15-15:15 Lunch break.

15:15-15:45 **Miguel Angel HERRERO.**

New and old problems in Applied Mathematics.

15:50-16:20 **Hedy ATTOUCH.**

On some singular differential equations arising in the modeling of non-elastic shocks in unilateral mechanics and decision sciences.

16:25-16:55 **Jacques GIACOMONI and Monique MADAUNE-TORT.**

Some contributions about degenerate parabolic equations.

20:45 Social dinner in Parador Conde de Orgaz.

Friday, June 17th

9:50-10:20 **Roland GLOWINSKI.**

On a conjecture by C. Sundberg: A numerical investigation.

10:25-10:55 **M.A. POZIO.**

Fujita phenomenon in the hyperbolic space.

11:00-11:30 Coffee break.

11:30-12:00 **Alfredo BERMÚDEZ.**

Finite Element Solution of Potential Flows Past Sails.

12:05-12:35 **Jean-Michel RAKOTOSON.**

Stellarator model and some properties of the relative rearrangement.

12:40-13:10 **Hiroshi MATANO.**

Traveling waves in a sawtoothed cylinder and their homogenization limit.

14:00 Lunch.

Posters Session

Tuesday, June 14th.

17:00-18:00

- **A. Arjona, T. Chacón, M. Gómez Marmol.**
Numerical solutions of an elastic-gravitational model by the finite element method.
- **H. Chrayteh**
Eigenvalue Problems with fully discontinuous.
- **A. Derlet.**
Nodal and multiple solutions for a prescribed mean curvature problem.
- **A. Jiménez-Casas, M. Castro, J. Yasappan**
Numerical Analysis of a closed loop Thermosyphon model with a viscoelastic fluid.
- **P. Barral, M.C. Naya-Riveiro, P. Quintela.**
Mathematical analysis of a thermoelastic problem.
- **M.C. Navarro, H. Herrero.**
Vortices in a cylindrical annulus.

Wednesday, June 15th.

17:00-18:00

- **A. Hidalgo.**
Numerical Analysis of a climate model.
- **J.F. Padial.**
Nonlinear models in partial differential equations arising in nuclear fusion.
- **S. Peppin, A.M. Ramos, N. Smith.**
Modelling a High-Pressure Shift Freezing Process.
- **M.L. Seoane.**
On the Lipschitz Property of the Relative Rearrangement.
- **L. Tello.**
Mathematical treatment of a climatological model with deep ocean effect.

Proceedings

All participants are invited to submit a written communication for a special issue of the journal *Differential Equations and Applications* (ISSN: 1847-120X). The deadline for papers submission to *Differ. Equ. Appl.* is September 1st, 2011.

Useful Addresses

- The sessions of the Congress will take place at the **Palacio Lorenzana**, Cardenal Lorenzana street.
- The lunch will be at the Terrace of Cafeteria-Restaurante Alex, Plaza Amador de los Rios 9.
- The Reception will take place at Real Fundación Toledo, Plaza de Victorio Macho, 2 (June, 14th at 20:30).
- The Congress Dinner will take place in the Parador de Toledo, Conde De Orgaz (June, 16th at 20:45).

WIFI

SIDD: uclm-eventos

WEP Password: UCLM3v3nt0s09

Participants

S.J. Álvarez Contreras	U. Complutense de Madrid
L. Álvarez León	U. Las Palmas de Gran Canarias
H. Amann	U. Zurich
Ch. Amrouche	U. Pau
N.S. Antontsev	CMAF. U. Lisbon
A. Arjona	U. Sevilla
H. Attouch	U. Montpellier 2
C. Bandle	U. Basel
P. Begout	U. Toulouse
Y. Belaoud	U. Tours
R. Bermejo	U. Politécnica de Madrid
A. Bermúdez de Castro	U. Santiago de Compostela
L. Boccardo	U. Roma 1
F. Bombal	U. Complutense de Madrid
H. Brezis	U. Rutgers
A. Casal	U. Politécnica de Madrid
V. Caselles	U. Pompeu Fabra
J.M. Chipot	U. Zurich
H. Chrayteh	U. Poitiers
R. Cirmi	U. Catania
C. Conca	U. Chile
A. Derlet	U. Libre de Bruxelles
G. Díaz	U. Complutense de Madrid
J.I. Díaz	U. Complutense de Madrid
B. Doumbé Bangola	U. Poitiers
J. Fleckinger	U. Toulouse 1
A.C. Fowler	U. Limerick
A. Friedman	U. Ohio-State
P. Galán	U. Politécnica de Madrid
G. Galiano	U. Oviedo
J. García-Melián	U. La Laguna
J. Giacomoni	U. Pau
R. Glowinski	U. Houston
J. Henry	INRIA-Bordeaux
J. Hernández	U. Autónoma de Madrid
H. Herrero	U. Castilla-La Mancha
M.A. Herrero	U. Complutense de Madrid
G. Hetzer	U. Auburn
A. Hidalgo	U. Politécnica de Madrid

D. Hilhorst	U. Paris-Sud
B. Ivorra	U. Complutense de Madrid
J.A. Infante	U. Complutense de Madrid
H. Israel	U. Poitiers
A. Jiménez-Casas	U. Pontificia de Comillas
P.P Kyriazopoulos	UCM-European Project FIRST
A. Liñán	U. Politécnica de Madrid
M. Lobo	U. Cantabria
M. Madaune-Tort	U. Pau
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R. Martín	U. de Castilla-La Mancha
H. Matano	U. Tokyo
J.M. Martínez-Ansemil	U. Complutense
T. Mingazzini	UCM-European Project FIRST
A. Mojsic	UCM-European Project FIRST
I. Moyano	U. Complutense de Madrid
A. Muñoz	U. Rey Juan Carlos
F. Murat	U. Pierre et Marie Curie
T. Nagai	U. Hiroshima
M.C. Naya-Riveiro	U. Santiago de Compostela
F. Ortégón	U. Cadiz
J. Otero	U. Complutense de Madrid
J.F. Padial	U. Politécnica de Madrid
C. Parés	U. Málaga
P. Pedregal	U. Castilla-La Mancha
M.E. Pérez	U. Cantabria
V.M. Pérez	U. Castilla-La Mancha
M. Pierre	ENS Cachan Bretagne
O. Pironneau	U. Pierre et Marie Curie
M.A. Pozio	U. Roma 1
C. Quesada	U. Complutense de Madrid
R. Quintanilla	U. Politecnica de Catalunya
J.M. Rakotoson	U. Poitiers
A.M. Ramos	U. Complutense de Madrid
J.M. Rey	U. Complutense de Madrid
P. Romero	U. Complutense de Madrid
B. Rubio	U. Complutense de Madrid
J .C. Sabina de Lis	U. La Laguna
E. Sanchez-Palencia	U. Pierre et Marie Curie
M. Sanchez	U. Complutense
E. Schiavi	U. Rey Juan Carlos
M.L. Seoane	U. Santiago de Compostela

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Y. Seki	ICMAT
N. Smith	U. Complutense de Madrid
J. Solá-Morales	U. Politécnica de Catalunya
P. Takáč	U. Rostock
R. Temam	U. Indiana
A. Tellini	U. Complutense de Madrid
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L. Tello	U. Politécnica de Madrid
A. Tesei	U. Roma 1
C. Timofte	U. Bucharest
J. Tort	U. Paul Sabatier Toulouse III
G. Vallet	U. Pau
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J.M. Vegas	U. Complutense de Madrid
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