

# BUILDING MATHEMATICS AND MUTUAL UNDERSTANDING

An international conference on occasion of  
**Alfonso Casal's**  
 70th birthday

Madrid, July 14<sup>th</sup> and 15<sup>th</sup> 2014

E.T.S. Arquitectura, UPM



## Lecturers on Mathematics

J. Arrieta (UCM, Spain), J.I. Díaz (UCM, Spain), P. Galan (UPM, Spain), G. Hetzer (Auburn Univ., USA), J. Hernández (UAM, Spain), A. Hidalgo (UPM, Spain), A. Liñán (UPM, Spain), R. de la Llave (Georgia Institute of Technology, USA), J. Martín (US, Spain), L. Pardo (Spain), J. Sabina (ULL, Spain), E. Sánchez-Palencia (Paris VI, France), M. Stich (Aston Univ., United Kingdom), P. Takáč (Rostock University, Germany), J.I. Tello (UPM, Spain), J.L. Vázquez (UAM, Spain), L. Vázquez (UCM, Spain), J.M. Vegas (CUNEF, Spain), ...

## Organizing Committee:

J.I. Díaz (UCM),  
 L. Maldonado (UPM), J.F. Padial (UPM),  
 and L. Tello (UPM)

## Lecturers on Architecture and other contexts

A. Campo Baeza (UPM, Spain), S. García (UPM, Spain), J. Hernández León (UPM, Spain),  
 A. Perea (UPM, Spain), J.E. Prieto (BID Group One, Spain), ...



## Monday 14<sup>th</sup> July

## Tuesday 15<sup>th</sup> July

# SCHEDULE

|               |   |   |
|---------------|---|---|
| Assembly Hall | 08:45-9:30  | Registration  |
|               | 09:00-10:00   | <b>OPENING</b><br>L. Maldonado (Director ETS Arquitectura),<br>C. Conde (Rector UPM) and J. Carrillo (Rector UCM) |
|               | 10:00-10:30   | A. Liñán<br><i>Las matemáticas en la ingeniería</i>   |
|               | 10:35-11:05   | A. Campo Baeza<br><i>La búsqueda de la belleza</i>  |
|               | 11:10-11:50   | COFFEE BREAK  |
|               | 11:50-12:20   | J.I. Díaz<br><i>The delay as a control tool</i>   |
|               | 12:25-12:55   | G. Hetzer<br><i>Two-Species Competition with Nonlocal Dispersal</i>   |
|               | 13:00-13:30   | M. Stich<br><i>Time-delay feedback control in oscillatory reaction-diffusion systems</i>                          |
|               | 13:30-15:00   | LUNCH   |
|               | 15:00-15:30   | S. García Cortés<br><i>Edible Architecture</i>  |
|               | 15:35-16:05   | A. Perea<br><i>El paradigma de la complejidad</i>   |
|               | 16:10-16:40   | J.E. Prieto<br><i>Quality Applied and Business Growth</i>   |
|               | 16:45-17:15   | COFFEE BREAK & POSTER SESSION   |
|               | 17:15-17:45   | J. Arrieta<br><i>The bi-Laplacian with intermediate boundary conditions and oscillations of the boundary</i>      |
| 17:50-18:20   | J.M. Vegas<br><i>Finite-time stabilization by using degenerate feedback delay</i> |   |
| Assembly Hall | 19:30-20:45   | PIANO RECITAL: Guillermo González   |
|               | 21:00-00:00   | CONFERENCE DINNER: Rest. Jardín de Somontes   |

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|-------------|---|
| 08:45-9:30  | Registration  |
| 09:00-09:30 | E. Sánchez-Palencia<br><i>Examples of emergence of a periodic complexity in biological evolution</i>                                    |
| 09:35-10:05 | J. Martín-Martín<br><i>El problema de dos cuerpos en Relatividad General y el púlsar 1913+16</i>  |
| 10:10-10:40 | J. Hernández<br><i>Weak Positive Solutions for Semilinear Singular Elliptic Problems</i>  |
| 10:45-11:15 | P. Takáč<br><i>Space-Time Analyticity of Solutions to Linear Parabolic Systems and Mathematical Finance</i>                             |
| 11:20-11:50 | COFFEE BREAK & POSTER SESSION   |
| 11:50-12:20 | J. Sabina<br><i>Multiplicity of solutions to a nonlinear diffusion problem</i>  |
| 12:25-12:55 | L. Vázquez<br><i>De la No Localidad al Calculo Fraccionario. Retos Computacionales y de Modelización</i>                                |
| 13:00-13:30 | J.L. Vázquez<br><i>The theory of fractional heat equations</i>  |
| 13:30-15:00 | LUNCH   |
| 15:00-15:30 | J.I. Tello<br><i>On a mathematical model of cancer stem cells</i>   |
| 15:35-16:05 | P. Galán<br><i>A numerical study of a non-hydrostatic ocean model: an application to the Mediterranean Sea</i>                          |
| 16:10-16:40 | A. Hidalgo<br><i>Numerical simulation of a climate model with latent heat of fusion</i>   |
| 16:45-17:15 | COFFEE BREAK  |
| 17:15-17:45 | J.M. Hernández León<br><i>Sobre la mathesis y lo impensable</i>   |
| 17:50-18:20 | R. de la Llave<br><i>State dependent delay differential equations: Periodic and quasi-periodic solutions and their stable manifolds</i> |
| 18:25-18:55 | <b>CLOSING</b><br>J.I. Díaz (President Organizing Committee)  |

Assembly Hall