MATHEMATICAL MODELLING IN ENGINEERING & HUMAN BEHAVIOUR 2011

September 6th-9th, 2011

Instituto de Matemática Multidisciplinar, Universidad Politécnica de Valencia, 46022 Valencia, Spain

Edificio 8G, piso 2, acceso A y C

Webpage: http://jornadas.imm.upv.es

Invited Speakers:

1.) **A non-standard numerical scheme for a nonlinear option pricing model in illiquid markets,** *A. J. Arenas*, G. González-Parra and B. Caraballo (University of Córdoba, Montería , Colombia)

2.) **Virus Propagation with Randomness,** D. Stanescu and *B. Chen-Charpentier* (University of Texas at Arlington, Arlington, Texas, U.S.A.)

3.) **Modeling boundary conditions for solving stationary Schrödinger equations,** X. Antoine, C. Besse, *M. Ehrhardt* and P. Klein (Bergische Universität Wuppertal, Germany)

4.) **The benefits of hybrid methodologies in Data Mining and Knowledge Discovery. Applications to Human Behaviour,** *K. Gibert* (Universitat Politècnica de Catalunya, Barcelona, Spain)

5.) **Identification of the diffusion coefficient in a one and two dimensional parabolic equation by regularization techniques using two parameters,** *D. Hinestroza* (University of El Valle, Cali, Colombia)

6.) **Delay discrete dynamical models for an aggresive heterogeneous tumor,** *F. J. Solis* (Centro de Investigación en Matemática, Guanajuato, Mexico)

7.) Optimal control of long-term sentimental dynamics, *J. M. Rey* (University Complutense de Madrid, Madrid, Spain)

8.) Modeling adaptive social behavior on epidemics with dynamical networks, *G. González-Parra* (Universidad de los Andes, Mérida, Venezuela)

List of Accepted Communications (Organized by sessions):

Mathematical Modelling for Human Behaviour (September 9th , morning session)

1) **_J. C. R. Alcantud_**, R. de Andrés and J. M. Cascón, *A unifying model to measure consensus solutions in a society.*
2) **_R. Duato_** and L. Jódar, *Mathematical modelling of the spread of divorces in Spain.*
3) J. Camacho, J. C. Cortés, R. Micle and **_A. Sánchez_**, *Predicting the next few year academic underachievement in high school in Spain: A dynamical modeling approach.*
4) **_J. Mora_**, H. Mora, M. T. Signes and P. Soler, *Artificial neural model for classification of volunteers.*
5) **_F. Pedroche_**, F. Moreno, A. González and A. Valencia, *Leadership groups on social network sites based on personalized pagerank.*
6) **_F. Moreno_** and E. Ospina, *On estimating the position and direction of a leader of a group of entities.*
7) M. Peco, F. J. Santonja, A. C. Tarazona, **_R. J. Villanueva_** and J. Villanueva-Oller, *Effect of the Spanish Law of Parties on the attitude of the Basque Country population towards ETA: A dynamic modeling approach.*
8) **_J. David Cabedo_**, A. Esteve and J. M. Tirado, *Differences between adults' health and late adolescents' health: an empirical analysis.*

Mathematical Models in Medicine (September 7^{th,} morning session)

9) L. Acedo and **_J. A. Moraño_**, *Modelling the brain with complex networks.*
10) J. M. Bru-Juanes, J. M. Bru-Lázaro, **_M. Herrera_** and J. Izquierdo, *Normal goniometric values to guide decision-making in lower-extremity rotational problems using Support Vector Machine techniques.*
11) **_F. Reyes_** and A. Martín, *Applying a simulation model to manage waiting lists for hospital inpatient activity in EU region.*
12) **_G. Rubio_**, C. Santamaría, B. García-Mora and S. Lujan, *A flowgraph model for bladder carcinoma.*
13) **_M. V. Sebastián_** and M. A. Navascués, *Electroencephalographic índices of interpolatory type.*
14) M. J. Rodríguez, F. Sánchez, A. Soriano and **_A. Iborra_**, *Stability and convergence analysis of several approaches for a mathematical description of a small animal computed tomographic system.*

15) **_L. A. Flores_**, V. Vidal, P. Mayo, F. Rodenas, G. Verdú, *Contrast of two methods of reconstruction of CT images using high performance computing.*

Telecommunication Engineering (September 6th, afternoon session)

16) **_D. Ayala_**, J. Izquierdo, I. Montalvo and R. Pérez, *Water supply system component evaluation from GPR radargrams using a multi-agent approach.*
17) **_C. Ordóñez_**, J. R. Rodríguez, S. García and E. Covián, *Analysis of the influence of forestry environments on the accuracy of GPS measurements by means of recurrent neural networks.*
18) **_G. Galati_** and G. Pavan, *Design and analysis of a new class of signals for radar applications.*
19) **_C. Bachiller_**, H. Esteban, J. V. Morro and V. Boria, *Hybrid mode matching method for the efficient analysis of rods in waveguided structures.*

Internal Combustion Engines (September 6th, afternoon session)

20) J. Galindo, **_A. Tiseira_**, P. Fajardo and R. Navarro, *Analysis of the Influence of Different Real Flow Effects on a CFD Anechoic Boundary Condition Based on the MoC.*
21) S. Hoyas, **_A. Gil_**, X. Margot and Dung Khuong Anh, *ELSA model of Diesel sprays.*
22) C. Guardiola, **_B. Pla_**, D. Blanco-Rodríguez and P. Cabrera, *Adaptive modeling for automotive applications.*
23) J. J. López, R. Novella, A. García and **_J. F. Winklinger_**, *A computational investigation on mixing, ignition and combustion in the frame of Diesel-like dual-fuel sprays.*
24) **_P. Olmeda_**, V. Dolz, F. J. Arnau and M. A. Reyes, *A one-dimensional lumped model for calculation of heat fluxes inside turbochargers.*
25) R. Payri, **_J. Gimeno_**, G. Bracho and P. Marti, *Study of the influence of the inlet boundary conditions in a LES simulation of internal flow in a diesel injector.*
26) J. R. Serrano, H. Climent, **_P. Piqueras_** and O. García, *A chemical species transport model with variable gas properties for gas dynamic calculation of internal combustion engines.*
27) F. Piscaglia and **_A. Montorfano_**, *Development of a Non-Reflective NSCBC for the Multi-Dimensional non-linear acoustic simulation of silencers for internal combustion engines.*
28) F. J. Salvador, J. Martínez, J. V. Romero and **_M. D. Roselló_**, *Study of the turbulence induced by cavitation phenomenon in diesel injector nozzles by large eddy simulation (LES).*
29) V. Macián, **_A. J. Torregrosa_**, A. Broatch, P. C. Niven and S. A. Amphlett, *Linear source identification for I.C. engine exhaust noise prediction.*

Optimization Models in Engineering (September 8th, afternoon session)

30) L. Bayón, J. M. Grau, M. M. Ruiz and **_P. M. Suárez_**, *Mathematical modeling of the combined optimization of a pumped-storage hydro-plant and a wind park.*

31) **_J. Martínez_**, M. López, J. M. Matías, J. A. Vilán and J. Taboada, *Classifying slate tile quality using automated learning techniques.*

32) **_S. Martorell_**, M. Villamizar, J. F. Villanueva, V. Serradell, F. Pelayo, R. Mendizábal and I. Sol, *PLS and RNA applied to the prediction of critical variables for a LBLOCA using R modelling.*

33) **_J. Oliver_** and A. Albiol, *A new likelihood function for inferring human pose.*

34) J. A. Vilán, F. Sánchez, F. J. de Cos and **_P. J. García_**, *Evolutionary support vector machines for regression applied to the prediction of the thickness of the chromium layer in a hard chromium plating process.*

Mathematical Models in Energy (September 8th, morning session)

35) **_A. G. Antebas_**, F. D. Denia, A. M. Pedrosa and F. J. Fuenmayor, *A finite element approach for the acoustic modeling of perforated dissipative mufflers with non-homogeneous properties.*

36) A. Sánchez, **_I. Martón_**, S. Carlos and S. Martorell, *Onshore wind farms maintenance optimization using a stochastic model.*

37) V. **_Ŝtumbauer_**, K. Petera and D. Štys, *Lattice Boltzmann method in bioreactor design and simulation.*

38) **_S. Papáček_**, R. Kaňa and C. Matonoha, *Estimation of Diffusivity of Phycobilins in Thylakoid Lumen by FRAP Imaging Technique.*

39) S. González, D. Ginestar and **_G. Verdú_**, *Using the proper generalized decomposition to compute the dominant mode of a nuclear reactor.*

40) **_J. A. Gutiérrez_**, M. Herrera, R. Pérez and E. Ramos, *Application of the graph-spectral methods in the vulnerability assessment of water supply networks.*

Numerical Methods I, II and III (September 6th, September 7th and September 8th afternoon sessions)

41) R. Cantó, **_B. Ricarte_** and A. M. Urbano, *Modelling of Big Game populations when hunting is age and sex selective.*

42) A. Cordero, **_J. L. Hueso_**, E. Martínez and J. R. Torregrosa, *Generating optimal iterative methods for non-linear equations by using polynomial interpolation.*

43) L. Bergamaschi, R. Bru, A. Martínez, **_J. Más_** and M. Putti, *Low Rank acceleration of symmetric/nonsymmetric preconditioners for the nonlinear Richards equation.*

44) **_D. de Pereda_**, S. Romero and J. Bondia, *On the computation of output bounds of parallel inputs pharmacokinetic models with parametric uncertainty.*

45) **F. Chicharro**, A. Cordero and J. R. Torregrosa, *Derivative-free high-order methods applied to preliminary orbit determination.*
46) **C. García**, A. Martínez and M. M. Tung, *The Variational Principle in transformation optics engineering and some applications.*
47) **R. Berenguer**, R. Verdú and J. Morales, *Convergence analysis of B-spline multidimensional deformable models defined in the frequency domain.*
48) **E. Defez**, J. Sastre, J. Ibáñez and P. A. Ruiz, *Solving engineering models using matrix functions.*
49) **J. M. Herrerías** and R. Herrerías, *On a three-parameter family of beta distribution.*
50) **J. J. López**, D. Carnicero, N. Ferrando and J. Cerdá, *Parallelization of the Finite-Difference Time-Domain Method for acoustic room simulation.*
51) **I. A. Mantilla**, G. Galati, M. Leonardi, J. V. Balbastre and E. de los Reyes, *On the Application of singular value decomposition and Tikhonov regularization to some ill-posed problems in hyperbolic passive location.*
52) J. Cabrera, **M. A. Castro**, F. Rodríguez and J. A. Martín, *Difference schemes for numerical solutions of lagging models of heat conduction.*
53) **E. Ponsoda** and S. Blanes, *Geometric integrators for solving optimal control problems appearing in engineering models.*
54) **M. G. Sánchez**, V. Vidal and J. Baller, *Comparison of metrics and filters to reduce impulsive noise in medical images on GPU.*
55) **A. Falcó**, L. Hilario, N. Montés and M. C. Mora, *Numerical strategies for the Garlekin-Proper generalized decomposition method.*
56) **O. Angulo**, J. C. López-Marcos and M. A. López-Marcos, *A semi-lagrangian method for a cell population model in a dynamical environment.*
57) **J. L. Sánchez**, A. Jimeno, R. Molina and J. Pérez, *An approach to the application of shift-and-add algorithms on Engineering and Industrial processes.*

Mathematical Models in Business (September 7th, afternoon session)

58) **A. Blasco** and J. Ribal, *Application of the continuing value to Spanish small and medium enterprises.*
59) M. Caballer, **L. Buigues**, I. Sauri, R. Usó and J. L. Trillo, *A standardization model by equivalent patient to control outpatient pharmaceutical expenditure.*
60) R. Usó, **M. Caballer**, I. Barrachina, J. L. Trillo and D. Vivas, *Analysis and assessment of two models of pharmaceutical expenditure prediction.*
61) J. Cerdá, N. Ferrando, **C. Montoliu** and R. J. Colom, *LGEM: A lattice Boltzmann economic model for income distribution and tax regulation.*
62) C. Bartual, **R. Cervelló** and I. Moya, *Measuring performance of social and non-profit microfinance institutions (MFIs) by a multicriteria approach.*
63) **E. de la Poza**, N. Guadalajara, L. Jódar and P. Merello, *Modeling Spanish anxiolytic consumption: Economic, demographic and Behavioral Influences.*

64) **_F. García_**, V. Giménez and F. Guijarro, *Credit risk management: A new multicriteria approach to assess creditworthiness.*

65) **_L. Gómez_** and J. Martínez, *Advances in pricing commodity futures: Multifactor models.*

Schedule

- Communications: 15 min + 5 min (for questions).
- Plenary sessions: 30 min + 5 min (for questions).

Tuesday 6th

10:00-13:00	**REGISTRATION** *Instituto Universitario de Matemática Multidisciplinar*	
	Parallel session: **Numerical Methods I** **(Venue: RED CUBE)** *Chairman: J. R. Torregrosa*	**Parallel session:** **Internal Combustion Engines** **(VENUE: YELLOW CUBE)** *Chairman: S. Hoyas*
15:30-15:50	**B. Ricarte (IMM, UPV)**, *Modelling of Big Game populations when hunting is age and sex selective.*	A. Tiseira (CMT, UPV), *Analysis of the Influence of Different Real Flow Effects on a CFD Anechoic Boundary Condition Based on the MoC.*
15:50 - 16:10	**J. L. Hueso (IMM, UPV)**, *Generating optimal iterative methods for non-linear equations by using polynomial interpolation.*	A. Gil (CMT, UPV), *Large eddy simulation of a Diesel like particle-laden flows.*
16:10 - 16:30	**L. Bergamaschi (Univ. di Padova),** *Low rank acceleration of symmetric /nonsymmetric preconditioners for the nolinear Richards equation.*	B. Pla (CMT, UPV), *Adaptive modeling for automotive applications.*
16:30 -	**D. de Pereda (IMM, UPV)** *On the computation of output*	J. F. Winklinger (CMT, UPV*), A computational investigation on*

16:50	*bounds of parallel inputs pharmacokinetc models with parametric uncertainty.*	*mixing, ignition and combustion in the frame of Diesel-like dual-fuel sprays.*
16:50-17:10	**F. Chicharro (IMM, UPV)**, *Derivative-free high-order methods applied to preliminary orbit determination.*	**P. Olmeda (CMT, UPV)**, *A one-dimensional lumped model for calculation of heat fluxes inside turbochargers.*
17:10-17:30	**C. García (Nanophotonics Technology Center, UPV)** *The variational principle in transformation optics engineering and some applications.*	**J. Gimeno (CMT, UPV)**, *Study of the influence of the inlet boundary conditions in a LES simulation of internal flow in a diesel injector.*
17:30 - 18:00	COFFEE BREAK	
	Parallel session: Telecommunication Engineering (Venue: RED CUBE) *Chairman: J. Sastre*	**Parallel session: Internal Combustion Engines (Venue: YELLOW CUBE)** *Chairman: S. Hoyas*
18:00 - 18:20	**D. Ayala (IMM, UPV)**, *Water suppy system component evaluation from GPR radargrams using a multi-agent approach.*	**P. Piqueras (CMT, UPV)**, *A chemical species transport model with variable gas properties for gas dynamic calculation of internal combustion engines.*
18:20-18:40	**C. Ordoñez (University of Oviedo, Spain)**, *Analysis of the influence of forestry environments on the accuracy of GPS measurements by means of recurrent neural networks.*	**A. Montorfano (Politecnico di Milano, Italy)**, *Development of a Non-Reflective NSCBC for the Multi-Dimensional non-linear acoustic simulation of silencers for internal combustion engines.*
18:40-19:00	**G. Galati (Tor Vergata University, Italy)**, *Design and analysis of a new class of signals for radar applications.*	**M. D. Roselló (IMM, UPV)**, *Study of the turbulence induced by cavitation phenomenon in diesel injector nozzles by large eddy simulation (LES).*
19:20-19:40	**C. Bachiller (Dept. de Comunicaciones, UPV)** *Hybrid mode matching method for the efficient analysis of rods in waveguided structures.*	**A. J. Torregrosa (CMT,UPV)**, *Linear source identification for I.C. engine exhaust noise prediction.*

Wednesday 7th

	Plenary Session (Venue: RED CUBE) *Chairman: F. J. Solis*
9:00-9:35	**D. Hinestroza (Univ. of El Valle, Colombia)**, *Identification of the diffusion coefficient in a one and two dimensional parabolic equation by regularization techniques using two parameters*
9:35-10:10	**A. J. Arenas (Univ. of Córdoba, Colombia)**, *A non-standard numerical scheme for a nonlinear option pricing model in illiquid markets*
	Session: Mathematical Models in Medicine (Venue: RED CUBE) *Chairman: A. J. Arenas*
10:10 - 10:30	**J. A. Moraño (IMM, UPV)**, *Modelling the brain with complex networks.*
10:30-10:50	**M. Herrera (IMM, UPV)**, *Normal goniometric values to guide decision-making in lower-extremity rotational problems using Support Vector Machine techniques.*
11:00-11:30	COFFEE BREAK
	Session: Mathematical Models in Medicine **(Venue: RED CUBE)** *Chairman: A. J. Arenas*
11:30-11:50	**F. Reyes (University of Vigo, Spain)**, *Applying a simulation model to manage waiting lists for hospital inpatient activity in EU region.*
11:50-12:10	**G. Rubio (IMM, UPV)**, *A Flowgraph model for bladder carcinoma.*
12:10-12:30	**M. V. Sebastián (Centro Universitario de la Defensa, Spain)**, *Electroencephalographic indices of interpolatory type.*
12:30-12:50	**A. Iborra (IMM, UPV)**, *Stability and convergence analysis of several approaches for a mathematical description of a small animal computed tomographic system.*

12:50-13:10	**L. A. Flores (DSIC, UPV)**, *Contrast of two methods of reconstruction of CT images using high performance computing.*

	Parallel Session: Mathematical Models in Business **(Venue: RED CUBE)** *Chairman: F. Polo*	**Parallel Session: Numerical Methods II** **(Venue: YELLOW CUBE)** *Chairman: F. J. Solis*
15:30 - 16:00	**A. Blasco (UPV, Spain)**, *Application of the continuing value to Spanish small and medium enterprises.*	**A. Falcó (Univ. CEU Cardenal Herrera, Spain)**, *Numerical strategies for the Garlerkin-Proper generalized decom-position method.*
16:00 - 16:20	**L. Buigues (Dirección General de Farmacia, Valencia, Spain)**, *A standardization model by equivalent patient to control outpatient pharmaceutical expenditure.*	**E. Defez (IMM,UPV)**, *Solvin engineering models using matrix functions.*
16:40-17:00	**M. Caballer (Dirección General de Farmacia, Valencia, Spain)**, *Analysis and assessment of two models of pharmaceutical expenditure prediction.*	**J. M. Herrerías (University of Granada, Spain)**, *On a three-parameter family of beta distribution.*
17:00-17:20	**C. Montoliu (UPV, Valencia, Spain)**, *LGEM: A Lattice Boltzmann economic model for income distribution and tax regulation.*	**J. J. López (ITEAM,UPV)**, *Parallelization of the finite-difference time-domain method for acoustic room simulation.*
17:30 - 18:00	COFFEE BREAK	
	Parallel Session: Mathematical Models in Business **(Venue: RED CUBE)** *Chairman: M. Ehrhardt*	**Parallel Session: Numerical Methods II** **(Venue: YELLOW CUBE)** *Chairman: J. L. Hueso*
18:00 - 18:20	**R. Cervelló (Dpt. of Economics and Social Sciences, UPV)**, *Measuring performance of social and non-profit microfinance institutions (MFIs) by a multicriteria approach.*	**I. A. Mantilla (ITACA, UPV)**, *On the application of singular value decomposition and Tikhonov regularization to some ill-posed problems in hyperbolic passive location.*

18:20-18:40	**E. de la Poza (Dpt. of Economics and Social Sciences, UPV)**, *Modeling Spanish anxiolytic consumption: Economic, demographic and behavioral influences.*	**E. Ponsoda (IMM, UPV)**, *Geometric integrators for solving optimal control problems appearing in engineering models.*
18:40-19:00	**F. García (ADE Faculty, UPV)** *Credit risk management: A new multicriteria approach to assess creditworthiness.*	**M. G. Sánchez (Instituto Tecnológico de Cd. Guzmán, Mexico)**, *Comparison of metrics and filters to reduce impulsive noise in medical images on GPU.*
19:00-19:20	**L. Gómez (University of Valladolid, Spain)**, *Advances in pricing commodity futures: multifactor models.*	**J. L. Sánchez (Univ. of Alicante, Spain)**, *An approach to the application of Shift-and-add algorithms on Engineering and Industrial processes.*

Thursday 8th

	Plenary Session (Venue: RED CUBE) *Chairman: J. C. Cortés*
9:00-9:35	**K. Gibert (Univ. Politècnica de Catalunya, Spain)**, *The benefits of hybrid methodologies in Data Mining and Knowledge Discovery. Applications to Human Behaviour.*
9:35-10:10	**F. J. Solis (CIMAT, Guanajuato, Mexico)**, *A non-standard numerical scheme for a nonlinear option pricing model in illiquid markets*
	Session: Mathematical Models in Energy (Venue: RED CUBE) *Chairman: K. Gibert*
10:10 - 10:30	**A. G. Antebas (Centro de Tecnología de Vehículos, UPV)**, *A finite element approach for the acoustic modeling of perforated dissipative mufflers with non-homogeneous properties.*
10:30-10:50	**I. Martón (Dpt. D'Enginyeria Qímica I Nuclear, UPV)**, *Onshore wind farms maintenance optimization using a stochastic model.*
11:00-11:30	COFFEE BREAK

	Session: Mathematical Models in Energy **(Venue: RED CUBE)** *Chairman: D. Hinestroza*
11:30-11:50	**V. Ŝtumbauer (University of South Bohemia, Czech Republic)**, *Lattice Boltzmann method in bioreactor design and simulation.*
11:50-12:10	**S. Papáček (University of South Bohemia, Czech Republic)**, *Estimation of Diffusivity of Phycobilins in Thylakoid Lumen by FRAP Imaging Technique.*
12:10-12:30	**G. Verdú (Dpt. D'Eninyeria Qímica I Nuclear, UPV)**, *Using the proper generalized decompositions to compute the dominant mode of a nuclear reactor.*
12:30-12:50	**J. A. Gutiérrez (IMM, UPV)**, *Application of graph-spectral methods in the vulnerability assessment of water supply networks.*
	Plenary Session **(Venue: RED CUBE)** *Chairman: J. Sastre*
15:20-15:55	**M. Ehrhardt (Bergische Universität Wuppertal)**, *Modeling boundary conditions for solving stationary Schrödinger equations.*
15:55-16:30	**G. González-Parra (Universidad de los Andes)**, *Modeling adaptive social behaviour on epidemics with dynamical networks.*
	Session: Optimization Models in Engineering **(Venue: RED CUBE)** *Chairman: M. Ehrhardt*
16:30-16:50	**P. J. García (Univ. of Oviedo, Spain)**, *Evolutionary support vector machines for regression applied to the prediction of the thickness of the chromium layer in a hard chromium plating process.*
16:50-17:10	**P. M. Suárez (Univ. of Oviedo, Spain)**, *Mathematical modeling of the combined optimization of a pumped-storage hydro-plant and a wind park.*
17:10-17:30	**J. Martínez (Centro Universitario de la Defensa, Zaragoza)**, *Classifying slate tile quality using automated learning techniques.*
17:30 - 18:00	COFFEE BREAK
	Parallel Session: Optimization **Parallel Session: Numerical**

	Models in Engineering (Venue: RED CUBE) Chairman: M. Ehrhardt	Methods III (Venue: YELLOW CUBE) Chairman: J. Sastre
18:00 - 18:20	**S. Martorell (Dpt. de Ingeniería Química y Nuclear, UPV)**, *PLS and RNA applied to the prediction of critical variables for a LBLOCA using R modeling.*	**O. Angulo (Univ. de Valladolid, Spain)**, *A semi-lagrangian method for a cell population model in a dynamical environment.*
18:20 - 18:40	**R. Berenguer (Univ. Politécnica de Cartagena, Spain)**, *Convergence analysis of B-spline multidimensional deformable models defined in the frequency domain.*	**M. A. Castro (University of Alicante, Spain)**, *Difference schemes for numerical solutions of lagging models of heat conduction.*

Friday 9th

	Plenary Session (Venue: RED CUBE) Chairman: A. J. Arenas
9:00- 9:35	**B. M. Chen-Charpentier (University of Texas at Arlington)**, *Virus propagation with randomness.*
9:35- 10:10	**J. M. Rey (Universidad Complutense de Madrid)**, *Optimal control of long-term sentimental dynamics.*
	Session: Mathematical Modelling for Human Behaviour (Venue: RED CUBE) Chairman: B. M. Chen-Charpentier
10:10 - 10:30	**J. C. Alcantud (Univ. de Salamanca, Spain)**, *A unifying model to measure consensus solutions in a society.*
10:30 - 10:50	**R. Duato (IMM, UPV)**, *Mathematical modeling of the spread of divorces in Spain.*
10:50- 11:10	**A. Sánchez (IMM, UPV)**, *Predicting the next few year academic underachievement in high school in Spain: A dynamical modeling approach.*
11:00- 11:30	COFFEE BREAK

	Session: Mathematical Modelling for Human Behaviour **(Venue: RED CUBE)** *Chairman: M. Ehrhardt*
11:30-11:50	**J. Mora (University of Alicante, Spain)**, *Artificial neural models for classification of volunteers.*
11:50-12:10	**F. Pedroche (IMM, UPV)**, *Leadership groups on Social Network sites based on personalized PageRank.*
12:10-12:30	**F. Moreno (Univ. Nacional de Colombia, Sede Medellín)**, *On estimating the position and direction of a leader of a group of entities.*
12:30-12:50	**R. J. Villanueva (IMM, UPV)**, *Effect of the Spanish Law of Parties on the attitude of the Basque Country population towards ETA: A dynamic modeling approach.*
12:50-13:10	**J. David Cabedo (Universitat Jaume I de Castellón)**, *Differences between adults' health and late adolescent' health: an empirical analysis.*
	LUNCH OF THE CONFERENCE