

Curriculum vitae

Angel Manuel Ramos

July 21st, 2022

See <http://www.mat.ucm.es/~aramosol> for the latest version of this CV.

Contents

1	Personal and professional data	3
2	Education	3
3	Positions	3
4	Research visits	4
5	Research Lines	5
6	Publications	8
6.1	Books	8
6.2	Articles	8
6.3	Chapters in books	16
6.4	Miscellaneous	20
7	Principal investigator in research projects	24
8	Participation in other research projects	25
9	Research contracts	26
10	Registered Software	27
11	Experience organizing other research activities	27
12	Addresses in conferences and seminars	30
13	Reviewer for Research Agencies and Member of Editorial Boards in Scientific Journals	30
13.1	PhD Thesis	31
14	PhD Thesis Supervisions	31
15	Teaching Activities	33
15.1	Master or PhD programs	33
15.2	Undergraduate courses	33
16	Other merits and activities.	34

1 Personal and professional data

Angel Manuel Ramos

Professor of Applied Mathematics

Department of Applied Mathematics and Mathematical Analysis email: angel@mat.ucm.es
School of Mathematics & IMI web page: <http://www.mat.ucm.es/~aramosol>
Complutense University of Madrid (UCM) Phone: (00 34) 91 394 45 30
Plaza de Ciencias, 3
28040-Madrid (Spain)

Place and date of birth: Guadalajara (Spain), November 5th, 1968

Gender: Male

Nationality: Spanish

2 Education

-Ph.D. in Applied Mathematics, UCM, July 3rd, 1996.

-B.S. in Mathematics, Complutense University of Madrid, June 1991.

3 Positions

-Director of the *Institute of Interdisciplinary Mathematics* (IMI) of the Universidad Complutense de Madrid (UCM) since November 22nd, 2016. See <http://www.ucm.es/imi>

-Director of the UCM Research Group *Mathematical Models in Science and Engineering: Development, Analysis, Numerical Simulation and Control* (MOMAT) since 2005. See <http://www.mat.ucm.es/momat>

-Director of the IMI Research Program *Modeling, Analysis, Control and Simulation in Science and Engineering*. Since 2013.

-Professor (Catedrático de Universidad). Department of Applied Mathematics and Mathematical Analysis, UCM. Since December 10th, 2018.

-Associate Professor (Titular de Universidad). Department of Applied Mathematics, UCM. From 01/August/2005 to 09/December/2018.

-Academic Visitor. *Oxford Centre for Industrial and Applied Mathematics (OCIAM), Mathematical Institute, University of Oxford (United Kingdom)*. From 01-September-2012 to 10/July/2013.

-Member of the Senior Common Room at University College, *University of Oxford*. From 01/November/2012 to 30/June/2013.

-Head of Department of Applied Mathematics of the UCM since 01/October/2008 to 30/September/2012.

-External Collaborator of the *Cuerpo Académico de Ecuaciones Diferenciales y Modelación Matemática* of the *Facultad de Ciencias Físico Matemáticas* of the *Benemérita Universidad Autónoma de Puebla* (Mexico). From July 2006 to December 2008.

-Researcher of the "Ramon y Cajal excellence Program". Department of Applied Mathematics, UCM. From 1/2/2003 to 31/7/2005.

- Assistant Professor. Department of Applied Mathematics, UCM. From 15/06/1999 to 31/1/2003.
- Invited researcher. Institut National de Recherche en Informatique et en Automatique (INRIA), Rocquencourt (France). From 1/2/2001 to 31/7/2001.
- Assistant Professor. Department of Computer Systems and Programming, UCM. From 26/01/1996 to 14/6/1999.
- Invited researcher. Dassault Aviation (Paris). From 8/11/1998 to 8/2/1999.
- Postdoctoral Researcher. Department of Mathematics, University of Houston (USA). From 1/2/1998 to 31/10/1998.
- Predoctoral holder of a Spanish government scholarship. Department of Applied Mathematics, UCM. From 1/1/1992 to 31/12/1995.

4 Research visits

- Facultad de Ciencias Físico Matemáticas, *Benemérita Universidad Autónoma de Puebla (BUAP)*, Puebla (Mexico). From 18-11-2018 to 25-11-2018.
- Facultad de Ciencias Físico Matemáticas, *Benemérita Universidad Autónoma de Puebla (BUAP)*, Puebla (Mexico). From 15-10-2016 to 25-10-2016.
- Mathematical Institute*, University of Oxford (United Kingdom). From 17-06-2015 to 19-06-2015.
- Facultad de Ciencias Físico Matemáticas, *Benemérita Universidad Autónoma de Puebla (BUAP)*, Puebla (Mexico). From 05-03-2015 to 13-03-2015.
- Institut National de Recherche en Informatique et en Automatique (INRIA)*, Bordeaux (France). From 11-02-2015 to 13-02-2015.
- Facultad de Ciencias Físico Matemáticas, *Benemérita Universidad Autónoma de Puebla (BUAP)*, Puebla (Mexico). From 23-11-2013 to 30-11-2013.
- Oxford Centre for Industrial and Applied Mathematics (OCIAM)*, *Mathematical Institute, University of Oxford (United Kingdom)*. From 01-09-2012 to 10-07-2013.
- Institut National de Recherche en Informatique et en Automatique (INRIA)*, *Bordeaux (France)*. From 18-03-2012 to 23-03-2012.
- Facultad de Ciencias Físico Matemáticas*, *Benemérita Universidad Autónoma de Puebla (BUAP)*, *Puebla (Mexico)*. From 15-01-2012 to 22-01-2012.
- Oxford Centre for Collaborative Applied Mathematics (OCCAM)*, *Mathematical Institute, University of Oxford (United Kingdom)*. From 21-03-2011 to 25-03-2011.
- Institut National de Recherche en Informatique et en Automatique (INRIA)*, *Bordeaux (France)*. From 17-01-2011 to 21-01-2011.
- Facultad de Ciencias Físico Matemáticas*, *Benemérita Universidad Autónoma de Puebla (BUAP)*, *Puebla (Mexico)*. From 03-01-2010 to 17-01-2010.
- Facultad de Ciencias Físico Matemáticas*, *BUAP, Puebla (Mexico)*. From 09-01-2009 to 26-01-2009.
- Department of Mathematics, University of Houston, *Houston (USA)*. From 19-10-08 to 26-10-08.
- INRIA, Bordeaux (France)*. From 03-09-2007 to 14-09-2007.

- INRIA, Bordeaux (Francia). From 08-07-2007 to 22-07-2007.
- Facultad de Ciencias Físico Matemáticas, BUAP, Puebla (Mexico). From 11-01-2007 to 22-01-2007.
- Facultad de Ciencias Físico Matemáticas, BUAP, Puebla (Mexico). From 10-05-2006 to 25-05-2006.
- Departamento de Matemática, Universidade Nova de Lisboa (Portugal). From 18-07-2004 to 24-07-2004.
- Departamento de Matemática, Universidade Nova de Lisboa (Portugal). From 20-10-2003 to 24-10-2003.
- Departamento de Matemática, Universidade Nova de Lisboa (Portugal). From 16-06-2003 to 20-06-2003.
- Mathematical Institute, Charles University de Praga (Czech Republic). From 31-03-2003 to 11-04-2003.
- INRIA, Rocquencourt (France). From 10-03-2003 to 16-03-2003.
- Instituto de Matemática Pura e Aplicada (IMPA), Rio de Janeiro (Brazil). From 25-06-2002 to 26-07-2002.
- INRIA, Rocquencourt (France). From 01-05-2002 to 31-05-2002.
- INRIA, Rocquencourt (France). From 10-03-2002 to 17-03-2002.
- INRIA, Rocquencourt (France). From 01-02-2001 to 31-07-2001.
- Pôle Scientifique, Dassault Aviation-Université Pierre et Marie Curie, Paris (France). From 08-11-1998 to 08-02-1999.
- Department of Mathematics, University of Houston, Houston (USA). From 01-02-98 to 31-10-1998.
- Institut Henri Poincaré, Paris (France). From 12-01-98 to 16-01-1998.
- INRIA, Rocquencourt (France). From 04-12-95 to 22-12-1995.
- INRIA, Rocquencourt (France). From 01-02-1995 to 30-04-1995.

5 Research Lines

My research is focused on modeling, optimization and simulation in Science and Technology, mainly using Partial Differential Equations. Most problems I am interested in combine analytical and numerical techniques. My research lines are the following:

-Epidemic modeling. Spatial–stochastic individual based models. SIR models. Hybrid models. Risk analysis. Validation with real data. Control measures. Economic impact analysis. Impact of climate changes.

- Collaborators: J.M. Sánchez–Vizcaíno and other members of his research group (Veterinary School, UCM), D. Ngom (Université Assane Seck de Ziguinchor & Université Gaston Berger de Saint Louis, Senegal), T. Alexandrov (Bulgarian Food Safety Agency, Bulgaria) and other members of my research group (MOMAT).
- Partners involved in this research line: Instituto de Salud Carlos III International Fund for Agricultural Development (IFAD - specialized agency of the United Nations UN), Regional Government of Castilla and Leon, Spanish Ministry of the Environment and Rural and Marine Affairs, Spanish Agency for International Development Cooperation (AECID), Bulgarian food safety agency, Entidad Estatal de Seguros Agrarios (ENESA), Food and Agricultural Organization of the United Nations (FAO).
- Industry partners involved in this research line: Laboratorios Syva S.A..

- Software developed by our group:
 - θ -SIR-T model (or T-SIR-T model): See <https://github.com/momat-ucm/T-SIR-T>.
 - *Be-CoDiS* (Between-Countries Disease Spread). See <http://www.mat.ucm.es/momat/software.htm>.
 - *Be-FAST* (BEtween Farm Animal Spatial Transmission model). They will be soon ready to be used by other researchers, decision makers, insurance companies., etc.
- See publications [73], [74], [70], [69], [68], [67], [66], [59], [51], [49], [45], [39], [37], [32], [28], [24], [23] in Section 6.2; [27], [20], [21] in Section 6.3; [39], [38], [37], [32], [27], [26], [17], [12] in Section 6.4.

-Modeling and numerical simulation of oil spills.

- Collaborators: R. Glowinski (University of Houston), S. Gómez (Universidad Nacional Autónoma de México, Mexico), J. Carrera (Institute of Environmental Assessment and Water Research, CSIC) and other members of my research group (MOMAT).
- Industry partners involved in this research line: CSIPA, Holding Nautilus de Seguridad Industrial S.A. de C.V., Novetec, Ocean Cleaner Technology, Pemex, Sistemas CBT.
- Software developed by our group:
 - *SOSMAR*.
- See publications, [72], [57], [52], [50], [47], [25], [22], [20], in Section 6.2; [24], [19], in Section 6.3; [34], [33] [24], in Section 6.4.

-Modeling of Lithium batteries.

- Collaborators: C. Please (University of Oxford), G.W. Richardson (University of Southampton), J. Foster (University of Portsmouth) and other members of my research group (MOMAT).
- See publications, [71], [63], [46] in Section 6.2; [31] in Section 6.4.

-Modeling and numerical simulation of High Pressure Processes in Food Engineering. Heat and mass transfer. Freezing. Thermophysical properties. Associated Inverse problems.

- Collaborators: K. Knoerzer (CSIRO Food and Nutritional Sciences, Australia), S. Peppin (University of Oxford), A. Fraguera (Benemérita Universidad Autónoma de Puebla, Mexico), P. Sanz and other members of his research group (Centro Superior de Investigaciones Científicas, Spain), S. Mitchell (University of Limerick), J.S. Torrecilla (Chemistry School, UCM), P. Ortigosa (University of Almería), J.L. Redondo (University of Almería), M.R. Ferrández (University of Almería), S. Puertas-Martín (University of Almería) and other members of my research group (MOMAT).
- Industry partners involved in this research line: Esteban España S.A.; NC Hyperbaric: Cryovac SA
- See publications [61] [62], [38], [33], [30], [29], [17], [15], [11], [10], [7] in Section 6.2; [26], [25], [23], [22], [18], [17], [14], [13], [12], [11], [9] in Section 6.3; [25], [21], [15], [18], [16], [15], [14], [13], [7], [5] in Section 6.4.

-Other modeling and optimization problems in Science and Engineering. Global Optimization. Multi-Layers Semi Deterministic Methods. Some problems which I have studied are related to the following topics: Structural optimization; bioreactors; micro–fluidic mixer shape optimization; trajectory optimization for ships that are cleaning oil spills; liquid crystals, optical fiber design; thermoregulation in incubators; piezoelectric sensors; credit portfolio management.

- Collaborators: J.G. Santiago (Stanford University), A. Fraguela (Benemérita Universidad Autónoma de Puebla, Mexico), Bijan Mohammadi (Centre Européen de Recherche et de Formation Avancée en Calcul Scientifique CERFACS and Université de Montpellier II, France), J. Harmand (Institut National de la Recherche Agronomique - INRA, France), Alain Rapaport (INRA, France), M. Carrasco (Universidad de los Andes, Chile), I.M. Griffiths (University of Oxford and Princeton University), A. Majumdar (University of Bath), P. Martínez (Universidad de Almería) and other members of her research group, R. Lecaros (Universidad de Chile, Chile), H.A. Tinoco (Universidad Autónoma de Manizales, Colombia) and other members of my research group (MOMAT).
- Industry partners involved in this research line: Novetec, Advanced Dynamics, SA
- Software developed by our group:
 - *GOP*. See <http://www.mat.ucm.es/momat/software.htm>.
 - *Go Replicants!*. See <http://www.mat.ucm.es/momat/software.htm>
- See publications [64], [56], [55], [54], [53], [50], [47], [44], [42], [41], [40], [34], [31], [27], [26], [22], [21], [19], [18] in Section 6.2; [28], [19], [16] in Section 6.3; [36], [29], [28], [22], [21], [20], [19], [11], [10], [9], [6] in Section 6.4.

-Differential Games, Nash equilibria, multi-objective problems.

- Collaborators: R. Glowinski (University of Houston), J. Periaux (Dassault Aviation, France), R. Azencott (University of Houston) and T. Roubíček (Charles University and Academy of Sciences, Czech Republic) and other members of my research group (MOMAT).
- See publications [60], [16], [13], [6], [5] in Section 6.2; [10] in Section 6.3; [41], in Section 6.4.

-Factorization of Boundary Value Problems.

- Collaborator: J. Henry (Institut National de Recherche en Informatique et en Automatique, France).
- See publications [5], [4] and [1] in Section 6.1; [14], [8] in Section 6.2; [8] in Section 6.3; [4] in Section 6.4.

-Approximate controllability, control and stabilization of dynamical systems. Heat Equation, Burger equation, Cahn–Hilliard equation, thermoregulation processes in incubators, etc..

- Collaborators: R. Glowinski (University of Houston), J.I. Díaz (UCM), Bijan Mohammadi (Centre Européen de Recherche et de Formation Avancée en Calcul Scientifique CERFACS and Université de Montpellier II, France), A. Fraguela (Benemérita Universidad Autónoma de Puebla, Mexico) and other members of his research group, J. Henry (Institut National de Recherche en Informatique et en Automatique, France) and other members of my research group (MOMAT).
- See publications [1] in Section 6.1; [31], [9], [4], [3], [2], [1] in Section 6.2; [12], [8], [7], [6], [5], [4], [3], [2], [1] in Section 6.3; [23], [19], [3], [2], [1] in Section 6.4.

6 Publications

See <http://www.mat.ucm.es/~aramosol/research/publications/publications.html> for a full list of publications, including their links.

6.1 Books

- [7] A.M. RAMOS and J.M. REY, *Matemáticas Básicas para el acceso a la Universidad*. 3rd Edición. Ediciones Pirámide (Grupo ANAYA), 2018. ISBN (paper book): 978-84-368-3953-1. ISBN (e-book): 9978-84-368-3954-8.
- [6] A.M. RAMOS and J.M. REY, *Matemáticas Básicas para el acceso a la Universidad*. 2nd edition. Ediciones Pirámide (Grupo ANAYA), 2017. ISBN (paper book): 978-84-368-3710-0. ISBN (e-book): 978-84-368-3711-7.
- [5] J. HENRY and A.M. RAMOS, *Factorization of Boundary Value Problems Using the Invariant Embedding Method*. ISTE Press, Elsevier, 2016. ISBN (paper): 978-1-78548-143-7. ISBN (e-book): 9780081010907.
- [4] J. HENRY and A.M. RAMOS, *La méthode de factorisation des problèmes aux limites par plongement invariant*. ISTE Editions Ltd, 2016. ISBN (paper): 978-1-78405-141-9. ISBN (e-book): 978-1-78406-141-8.
- [3] A.M. RAMOS and J.M. REY, *Matemáticas Básicas para el acceso a la Universidad*. Ediciones Pirámide (Grupo ANAYA), 2015. ISBN (paper book): 978-84-368-3429-1. ISBN (e-book): 978-84-368-3430-7
- [2] A.M. RAMOS, *Introducción al análisis matemático del método de elementos finitos*. Editorial Complutense. 2012. ISBN (paper book): 9788499381282. ISBN (e-book): 9788499381299.
- [1] A.M. RAMOS, *Algunos problemas en ecuaciones en derivadas parciales relacionados con la teoría de Control*. PhD Thesis. Servicio de Publicaciones de la Universidad Complutense de Madrid, ISBN: 84-669-0715-7, 3 July 1996. 120 pages. <http://eprints.ucm.es/3438>

6.2 Articles

- [74] S. BARROSO-ARÉVALO, A. BARNETO, A.M. RAMOS, B. RIVERA, M. PÉREZ, R. SÁNCHEZ, L. SÁNCHEZ, A. BUENDÍA, C. GORTÁZAR, J.C. ORTIZ, M. DOMÍNGUEZ, C. SERRA, C. VELA, L. DOMÍNGUEZ and J.M. SÁNCHEZ-VIZCAÍNO, Large-scale study on virological and serological prevalence of SARS-CoV-2 in cats and dogs in Spain. *Transboundary and Emerging Diseases* (Impact factor: 5.005, 4/146 Q1 in "Veterinary Sciences", JCR 2020), 2022, 69:e759e774. DOI link: <https://doi.org/10.1111/tbed.14366>.
- [73] R. SECK, D. NGOM, B. IVORRA and A.M. RAMOS, An optimal control model to design strategies for reducing the spread of the Ebola Virus Disease. *Mathematical Biosciences and Engineering* (Impact factor: 2.080, 37/58 Q3 en "Mathematical & Computational Biology", JCR 2020), 19(2), 2022, pp. 1746–1774, DOI link: <https://doi.org/10.3934/mbe.2022082>.
- [72] B. IVORRA, S. GÓMEZ, J. CARRERA and A.M. RAMOS, A Compositional Eulerian Approach for Modelling Oil Spills in the Sea. *Ocean Engineering* (Impact factor: 3.795, 1/16 Q1 in "Engineering,

- Marine”, JCR 2020), Vol. 242 (2021) 110096. DOI link: <https://doi.org/10.1016/j.oceaneng.2021.110096>.
- [71] G.W. RICHARDSON, J.M. FOSTER, R. RANOM, C.P. PLEASE and A.M. RAMOS, Charge transport modelling of Lithium-ion batteries. *European Journal of Applied Mathematics* (Impact factor: 1.413, 127/265 Q2 in "Mathematics, Applied", JCR 2020), 2021. DOI link: <https://doi.org/10.1017/S0956792521000292>.
- [70] A.M. RAMOS, M. VELA-PÉREZ, M.R. FERRÁNDEZ, A.B. KUBIK and B. IVORRA, Modeling the impact of SARS-CoV-2 variants and vaccines on the spread of COVID-19. *Communications in Communications in Nonlinear Science and Numerical Simulation* (Impact factor: 4.260, 5/265 Q1 in "Mathematics, Applied", JCR 2020), Vol. 102, 2021, 105937. DOI link: <https://doi.org/10.1016/j.cnsns.2021.105937>. Preprint, first version 17 January 2021. DOI link: <http://www.doi.org/10.13140/RG.2.2.32580.24967/2>.
- [69] A.M. RAMOS, M.R. FERRÁNDEZ, M. VELA-PÉREZ, A.B. KUBIK and B. IVORRA, A simple but complex enough θ -SIR type model to be used with COVID-19 real data. Application to the case of Italy. *Physica D: Nonlinear Phenomena* (Impact factor: 2.300, 54/265 Q1 in "Mathematics, Applied", JCR 2020), Vol. 421 (2021) 132839. DOI link: <https://doi.org/10.1016/j.physd.2020.132839>. *Research Gate* Preprint, 2020. DOI link: <https://doi.org/10.13140/RG.2.2.32466.17601>
- [68] B. IVORRA, M.R. FERRÁNDEZ, M. VELA-PÉREZ and A.M. RAMOS, Mathematical modeling of the spread of the coronavirus disease 2019 (COVID-19) taking into account the undetected infections. The case of China. *Communications in Nonlinear Science and Numerical Simulation* (Impact factor: 4.260, 5/265 Q1 in "Mathematics, Applied", JCR 2020), Vol. 88, 2020, 105303. DOI link: <https://doi.org/10.1016/j.cnsns.2020.105303>. Preprint, 1 April 2020: <https://doi.org/10.13140/RG.2.2.21543.29604>
- [67] B. IVORRA, D. NGOM and A.M. RAMOS, Stability and sensitivity analysis of epidemiological model Be-CoDiS predicting the spread of human diseases between countries. *Electronic Journal of Differential Equations* (Impact factor: 1.282, 106/330 Q2 in "Mathematics", JCR 2020), ISSN: 1072-6691, Vol. 2020 (2020), No. 62, pp. 1–29. <https://ejde.math.txstate.edu/Volumes/2020/62/ivorra.pdf>
- [66] M.R. FERRÁNDEZ, B. IVORRA, J.L. REDONDO, A.M. RAMOS and P.M. ORTIGOSA, A multi-objective approach to estimate parameters of compartmental epidemiological models. Application to Ebola Virus Disease epidemics. Preprint: <https://doi.org/10.13140/RG.2.2.25778.56006>
- [65] M.R. FERRÁNDEZ, J.L. REDONDO, B. IVORRA, A.M. RAMOS, P.M. ORTIGOSA and B. PAECHTER, Improving the performance of a preference-based multi-objective algorithm to optimize food treatment processes. *Engineering Optimization* (Impact factor: 3.230, 26/91 Q2 in "Engineering, Multidisciplinary", JCR 2020), Volume 52, 2020, Issue 5, pp. 896-913. DOI link: <https://doi.org/10.1080/0305215X.2019.1618289>
- [64] M. CRESPO, B. IVORRA, A.M. RAMOS and A. RAPAPORT, Shape Optimization of spatial chemostat models. *Electronic Journal of Differential Equations* (Impact factor: 0.820, 157/325 Q2 in "Mathematics", JCR 2019), ISSN: 1072-6691, Vol. 2019 (2019), No. 84, pp. 1–26. <https://ejde.math.txstate.edu/Volumes/2019/84/crespo.pdf>

- [63] J.I. DÍAZ, D. GÓMEZ-CASTRO and A.M. RAMOS, On the well-posedness of a multiscale mathematical model for Lithium-ion batteries. *Advances in Nonlinear Analysis*, (Impact factor: 2.667, 11/325 Q1 in "Mathematics", JCR 2019), ISSN: 2191-9496, 2019; 8: 1132–1157. DOI link: <https://doi.org/10.1515/anona-2018-0041>. Preprint: <http://arxiv.org/abs/1802.06353>
- [62] M.R. FERRÁNDEZ, S. PUERTAS-MARTÍN, J.L. REDONDO, B. IVORRA, A.M. RAMOS and P.M. ORTIGOSA, High-Performance Computing for the Optimization of High-Pressure Thermal treatments in Food Industry. *Journal of Supercomputing*, (Impact factor: 2.469, 31/108 Q2 in "Computer Science, Theory & Methods", JCR 2019), ISSN: 0920-8542. Vol 75, Pages 1187–1202, 2019. DOI link: <https://doi.org/10.1007/s11227-018-2351-4>. Open link: <http://rdcu.be/KzRM>
- [61] M.R. FERRÁNDEZ, J.L. REDONDO, B. IVORRA, Á.M. RAMOS and P.M. ORTIGOSA. Preference-based multi-objectivization applied to decision support for High-Pressure Thermal processes in food treatment. *Applied Soft Computing* (Impact factor: 5.472, 9/109 Q1 in "Computer Science, Interdisciplinary applications", JCR 2019), Vol. 79, Pages 326–340, June 2019. DOI link: <https://doi.org/10.1016/j.asoc.2019.03.050>. Open link: <https://authors.elsevier.com/a/1YtJ05aecSdPU0>.
- [60] J. HERRERA, B. IVORRA and A.M. RAMOS, An Algorithm for Solving a Class of Multi-Players Feedback Nash Differential Games. *Mathematical Problems in Engineering* (Impact factor: 1.009, 77/106 Q3 in "Mathematics, Interdisciplinary applications", JCR 2019). ISSN: 1024-123X. Volume 2019, Article ID 1417275, 14 pages. DOI link: <https://doi.org/10.1155/2019/1417275>
- [59] E. FERNÁNDEZ-CARRIÓN, B. IVORRA, A.M. RAMOS, B. MARTÍNEZ-LÓPEZ, C. AGUILAR-VEGA and J.M. SÁNCHEZ-VIZCAÍNO, An advection-deposition-survival model to assess the risk of introduction of vector-borne diseases through the wind: application to bluetongue outbreaks in Spain. *PLoS ONE* (Impact factor: 2.776, 24/69 Q2 in "Multipdisciplinary sciences", JCR 2018), ISSN: 1072-6691, 13(3): e0194573 (2018). DOI link: <https://doi.org/10.1371/journal.pone.0194573>
- [58] E. FERNÁNDEZ-CARRIÓN, B. MARTÍNEZ-LÓPEZ, B. IVORRA, A.M. RAMOS and J.M. SÁNCHEZ-VIZCAÍNO, Evaluación del riesgo de propagación de epidemias ganaderas mediante simulación matemática, *Pensamiento Matemático*, ISSN-e 2174-0410, 2018, Vol VIII, N. 2. pp. 43–54. http://www2.caminos.upm.es/Departamentos/matematicas/revistapm/revista_impresa/vol_VIII_num_2/inv_eval_rie_epi.pdf
- [57] S. GÓMEZ, B. IVORRA and A.M. RAMOS, Designing Optimal Trajectories for a Skimmer Ship to Clean, Recover and Prevent the Oil Spilled on the Sea from Reaching the Coast. *Applied Mathematics and Nonlinear Sciences*, ISSN: 2444-8656, 3(2) (2018) 553570. DOI link: <https://doi.org/10.2478/AMNS.2018.2.00043>
- [56] B. IVORRA, M.R. FERRÁNDEZ, M. CRESPO, J.L. REDONDO, A.M. RAMOS, P.M. ORTIGOSA and J.G. SANTIAGO, Modeling and Optimization Applied to the Design of Fast Hydrodynamic Focusing Microfluidic Mixer for Protein Folding. *Journal of Mathematics in Industry*, 2018, 8: 4, pp: 1–17. DOI link: <https://doi.org/10.1186/s13362-018-0046-3>
- [55] M. CRESPO, B. IVORRA and A.M. RAMOS, Asymptotic stability of a coupled advection-diffusion-reaction system arising in bioreactor processes. *Electronic Journal of Differential Equations* (Impact factor: 0.944, 83/310 Q2 in "Mathematics", JCR 2017), ISSN: 1072-6691, Vol. 2017 (2017), No. 194, pp. 1–26. <https://ejde.math.txstate.edu/Volumes/2017/194/crespo.pdf>

- [54] M. CRESPO, A. MAJUMDAR, A.M. RAMOS and I.M. GRIFFITHS, Solution landscapes in nematic microfluidics. *Physica D: Nonlinear Phenomena* (Impact factor: 1.960, 30/252 Q1 in "Mathematics, Applied", JCR 2017). Volumes 351352 (2017), 1–13. DOI link: <http://dx.doi.org/10.1016/j.physd.2017.04.004>. Preprint: <http://arxiv.org/abs/1607.05054>
- [53] M. CRESPO, B. IVORRA, A.M. RAMOS and A. RAPAPORT, Modeling and optimization of activated sludge bioreactors for wastewater treatment taking into account spatial inhomogeneities. *Journal of Process Control* (Impact factor: 2.787, 18/61 Q2 in "Automation & Control Systems", JCR 2017), ISSN: 0959-1524, 54 (2017) 118-128. DOI link: <http://dx.doi.org/10.1016/j.jprocont.2017.03.009>. Preprint: <http://eprints.ucm.es/42835/>
- [52] B. IVORRA, S. GÓMEZ, R. GLOWINSKI and A.M. RAMOS, Nonlinear Advection-Diffusion-Reaction Phenomena Involved in the Evolution and Pumping of Oil in Open Sea: Modeling, Numerical Simulation and Validation Considering the Prestige and Oleg Naydenov Oil Spill Cases. *Journal of Scientific Computing* (Impact factor: 1.814, 39/252 Q1 in "Mathematics, Applied", JCR 2017), ISSN: 0885-7474 (Print) 1573-7691 (Online), 2017, 70:1078–1104. DOI link: <http://dx.doi.org/10.1007/s10915-016-0274-x>. Preprint: <http://eprints.ucm.es/35477/>
- [51] E. FERNÁNDEZ-CARRIÓN, M. MARTÍNEZ-AVILÉS, B. IVORRA, B. MARTÍNEZ-LÓPEZ, A.M. RAMOS and J.M. SÁNCHEZ-VIZCAÍNO, Motion-based video monitoring for early detection of livestock diseases. The example of African swine fever. *PLoS ONE* (Impact factor: 2.806, 15/64 Q1 in "Multipdisciplinary sciences", JCR 2017), 12(9): e0183793 (2017). DOI link: <https://doi.org/10.1371/journal.pone.0183793>
- [50] M. CRESPO, B. IVORRA and A.M. RAMOS, Existence and Uniqueness of Solution of a Continuous Flow Bioreactor Model with Two Species. *Revista de la Real Academia de Ciencias Exactas, Físicas y Naturales. Serie A. Matemáticas* (Impact factor: 0.689, 140/310 in "Mathematics", JCR 2016). 2016, 110:357–377. DOI link: <http://dx.doi.org/10.1007/s13398-015-0237-3>. Full-text view-only version: <https://rdcu.be/4s3u>. Preprint: <http://arxiv.org/abs/1410.4681>
- [49] E. FERNÁNDEZ-CARRIÓN, B. IVORRA, B. MARTÍNEZ-LÓPEZ, A.M. RAMOS and J.M. SÁNCHEZ-VIZCAÍNO, Implementation and validation of an economic module in the Be-FAST model to predict costs generated by livestock disease epidemics: Application to classical swine fever epidemics in Spain. *Preventive Veterinary Medicine* (Impact factor: 1.987, 14/136 in "Veterinary Sciences", JCR 2016). ISSN: 0167-5877, Vol. 126 (2016), 66-73. DOI link: <http://dx.doi.org/doi:10.1016/j.prevetmed.2016.01.015>.
- [48] E. HERRERA, R. LEMUZ, C. GUILLÉN and Á.M. RAMOS, Introducción al problema inverso electrocardiográfico. *Research in Computing Science*, ISSN: 1870-4069, 128 (2016), 38–48.
- [47] B. IVORRA, J. LÓPEZ REDONDO, A.M. RAMOS and J.G. SANTIAGO, Design sensitivity and mixing uniformity of a micro-fluidic mixer. *Physics of Fluids* (Impact factor: 2.232, 37/133 in "Mechanics", JCR 2016), ISSN: 1070-6631. 28, 012005 (2016); DOI link: <http://dx.doi.org/10.1063/1.4939006>. Preprint: <http://arxiv.org/abs/1501.07391>
- [46] A.M. RAMOS, On the well-posedness of a mathematical model for lithium-ion batteries. *Applied Mathematical Modelling* (Impact factor: 2.350, 19/100 (Q1) in "Mathematics, Interdisciplinary Applications", JCR 2015). Vol. 40, 115–125, 2016. DOI link: <http://dx.doi.org/10.1016/j.apm.2015.05.006>. Preprint: <http://arxiv.org/abs/1506.00605>

- [45] B. IVORRA, D. NGOM and A.M. RAMOS, Be-CoDiS: A Mathematical Model to Predict the Risk of Human Diseases Spread Between Countries - Validation and Application to the 2014–2015 Ebola Virus Disease Epidemic. *Bulletin of Mathematical Biology* (Impact factor: 1.326, 32/56 (Q3) in "Mathematical and Computational Biology", JCR 2015), ISSN: 0092-8240. Vol. 77, Issue 9, 1668–1704, 2015. DOI link: <http://dx.doi.org/10.1007/s11538-015-0100-x>. Preprint: <http://arxiv.org/abs/1410.6153>
- [44] B. IVORRA, B. MOHAMMADI and A.M. RAMOS, A Multi-Layer Line Search Method to Improve the Initialization of Optimization Algorithms. *European Journal of Operational Research* (Impact factor: 2.679, 9/82 (Q1) in "Operations Research & Management Science", JCR 2015). Volume 247, Issue 3, 2015, 711–720. DOI link: <http://dx.doi.org/10.1016/j.ejor.2015.06.044>. Preprint: http://www.optimization-online.org/DB_HTML/2015/03/4840.html
- [43] J.A. INFANTE, M. MOLINA-RODRÍGUEZ and A.M. RAMOS, On the identification of a thermal expansion coefficient. *Inverse Problems in Science & Engineering* (Impact factor: 0.911, 63/101 en "Engineering, Multidisciplinary", JCR 2015), 2015, Vol. 23, No. 8, 1405–1424. DOI link: <http://dx.doi.org/10.1080/17415977.2015.1032274>
- [42] M. CARRASCO, B. IVORRA and A.M. RAMOS, Stochastic Topology Design Optimization for Continuous Elastic Materials. *Computer Methods in Applied Mechanics and Engineering* (Impact factor: 3.467, 6/101 (Q1) in "Mathematics, Interdisciplinary Applications", JCR 2015), 289 (2015), 131–154. DOI link: <http://dx.doi.org/10.1016/j.cma.2015.02.003>. Preprint: http://www.optimization-online.org/DB_HTML/2014/07/4431.html
- [41] A. FRAGUELA, F.D. MATLALCUATZI and A.M. RAMOS, Mathematical modelling of thermoregulation processes for premature infants in closed convectively heated incubators. *Computers in Biology and Medicine* (Impact factor: 1.521, 27/56 in "Mathematical and Computational Biology", JCR 2015), 2015, 57, 159–172. DOI link: <http://dx.doi.org/10.1016/j.combiomed.2014.11.021>
- [40] B. IVORRA, B. MOHAMMADI and A.M. RAMOS, Design of Code Division Multiple Access Filters Based on Sampled Fiber Bragg Grating by Using Global Optimization Algorithms. *Optimization and Engineering* (Impact factor: 1.233, 30/83 en "Engineering, Multidisciplinary", JCR 2014), 2014, Volume 15, Issue 3, pp 677–695. DOI link: <http://dx.doi.org/10.1007/s11081-013-9212-z>
- [39] B. IVORRA, B. MARTÍNEZ-LÓPEZ, J.M. SÁNCHEZ-VIZCAÍNO and A.M. RAMOS, Mathematical formulation and validation of the Be-FAST model for Classical Swine Fever Virus spread between and within farms. *Annals of Operations Research* (Impact factor: 1.217, 38/81 in "Operations Research & Management Science", JCR 2014), ISSN: 0254-5330. 2014, Volume 219, Issue 1, pp 25–47. DOI link: <http://dx.doi.org/10.1007/s10479-012-1257-4>
- [38] N.A.S. SMITH, K. KNOERZER and A.M. RAMOS, Evaluation of the differences of process variables in vertical and horizontal configurations of High Pressure Thermal (HPT) processing systems through numerical modelling. *Innovative Food Science & Emerging Technologies* (Impact factor: 3.273, 10/123 (Q1) en "Food Science & Technology", JCR 2014), ISSN: 1466-8564. 22 (2014) 51–62. DOI link: <http://dx.doi.org/10.1016/j.ifset.2013.12.021>
- [37] B. MARTÍNEZ-LÓPEZ, B. IVORRA, E. FERNÁNDEZ-CARRIÓN, A.M. PEREZ, A. MEDEL-HERRERO, F. SÁNCHEZ-VIZCAÍNO, C. GORTÁZAR, A.M. RAMOS and J.M. SÁNCHEZ-VIZCAÍNO, A multi-analysis approach for space-time and economic evaluation of risks related with livestock diseases: The example of FMD in Peru. *Preventive Veterinary Medicine* (Impact factor:

- 2.167, 12/133 (Q1) en "Veterinary Sciences", JCR 2014), ISSN: 0167-5877. 114 (2014) 47–63. DOI link: <http://dx.doi.org/10.1016/j.prevetmed.2014.01.013>
- [36] N.A.S. SMITH, S.L. MITCHELL and A.M. RAMOS, Analysis and Simplification of a Mathematical Model for High-Pressure Food Processes. *Applied Mathematics and Computation* (Impact factor: 1.551, 35/255 (Q1) en "Mathematics, Applied", JCR 2014), ISSN: 0096-3003. 226C (2014), 20–37 DOI link: <http://dx.doi.org/10.1016/j.amc.2013.10.030>
- [35] A. FRAGUELA, J.A. INFANTE, A.M. RAMOS and J.M. REY, A uniqueness result for the identification of a time-dependent diffusion coefficient. *Inverse Problems* (Impact factor: 1.802, 23/251 in "Mathematics, Applied", JCR 2013), ISSN: 0266-5611. Vol. 29 (2013), 125009. DOI link: <http://dx.doi.org/10.1088/0266-5611/29/12/125009>
- [34] B. IVORRA, J.L. REDONDO, J.G. SANTIAGO, P-M. ORTIGOSA and A.M. RAMOS, Two- and three-dimensional modeling and optimization applied to the design of a fast hydrodynamic focusing microfluidic mixer for protein folding. *Physics of Fluids* (Impact factor: 2.040, 21/139 in "Mechanics", JCR 2013), ISSN: 1070-6631. 25, 032001 (2013); DOI link: <http://dx.doi.org/10.1063/1.4793612>
- [33] N.A.S. SMITH, V. BURLAKOV and A.M. RAMOS, Mathematical modelling of the growth and coarsening of ice particles in the context of high pressure shift freezing processes. *The Journal of Physical Chemistry B* (Impact factor: 3.377, 39/136 en "Chemistry, Physical", JCR 2013), ISSN: 1520-6106. 2013, 117 (29), pp 8887-8895, DOI link: <http://dx.doi.org/10.1021/jp403366a>
- [32] B. MARTÍNEZ-LÓPEZ, B. IVORRA, A.M. RAMOS, E. FERNÁNDEZ, T. ALEXANDROV and J.M. SÁNCHEZ-VIZCAÍNO, Evaluation of the risk of Classical Swine Fever (CSF) spread from backyard pigs to other domestic pigs by using the spatial stochastic disease spread model Be-FAST: the example of Bulgaria. *Veterinary Microbiology* (Impact factor: 2.726, 4/132 in "Veterinary Sciences", JCR 2013), ISSN: 0378-1135. Vol. 165 (2013), 79-85, DOI link: <http://dx.doi.org/10.1016/j.vetmic.2013.01.045>
- [31] J.I. DÍAZ, T. MINGAZZINI and A. M. RAMOS, On the optimal control for a semilinear equation with cost depending on the free boundary. *Networks and Heterogeneous Media* (Impact factor: 0.658, 65/92 in "Mathematics, Interdisciplinary Applications", JCR 2012), ISSN: 1556-1801. 2012, Volume 7, Number 4, 605–615. DOI link: <http://dx.doi.org/10.3934/nhm.2012.7.605>
- [30] N.A.S. SMITH, S.S.L PEPPIN and A.M. RAMOS, Generalized Enthalpy Model of a High Pressure Shift Freezing process. *Proceedings of the Royal Society A: Mathematical, Physical & Engineering Sciences* (Impact factor: 1.971, 11/56 in "Multidisciplinary Sciences", JCR 2012), ISSN: 1364-5021. 2012, vol. 468, no. 2145, 2744–2766. DOI link: <http://dx.doi.org/10.1098/rspa.2011.0622>
- [29] A. FRAGUELA, J.A. INFANTE, A.M. RAMOS and J.M. REY, Identification of a Heat Transfer Coefficient Depending on Pressure and Temperature. *Inverse Problems in Science and Engineering* (Impact factor: 0.622, 51/90 in "Engineering, Multidisciplinary", JCR 2011). ISSN: 1741-5977 (Print), 1741-5985 (Online). Volume 20, Issue 2, pp. 137–172, 2012. DOI link: <http://dx.doi.org/10.1080/17415977.2011.587516>
- [28] B. MARTÍNEZ-LÓPEZ, B. IVORRA, D. NGOM, A.M. RAMOS and J.M. SÁNCHEZ-VIZCAÍNO, A novel spatial and stochastic model to evaluate the within and between farm transmission of classical swine fever virus: II Validation of the model. *Veterinary Microbiology* (Impact factor: 3.127, 2/143

- in "Veterinary Sciences", JCR 2012), ISSN: 0378-1135. Vol. 155, 2012, 21-32. DOI link: <http://dx.doi.org/10.1016/j.vetmic.2011.08.008>
- [27] M. CARRASCO, B. IVORRA and A.M. RAMOS, A variance-expected compliance model for structural optimization. *Journal of Optimization, Theory and Applications* (Impact factor: 1.062, 65/245 in "Mathematics, Applied", JCR 2011), ISSN: 0022-3239, Vol. 152, 2012, 136-151. DOI link: <http://dx.doi.org/10.1007/s10957-011-9874-7>
- [26] M. CARRASCO, B. IVORRA, R. LECAROS and A.M. RAMOS, An expected compliance model based on topology optimization for designing structures submitted to random loads. *Differential Equations & Applications*, ISSN: 1847-120X. 4, No. 1, 2012, 111-120. <http://files.ele-math.com/articles/dea-04-07.pdf>
- [25] S. GÓMEZ, B. IVORRA and A.M. RAMOS, Optimization of a pumping ship trajectory to clean oil contamination in the open sea. *Mathematical and Computer Modelling*. (Impact factor: 1.346, 40/245 in "Mathematics, Applied", JCR 2011), ISSN: 0895-7177. Volume 54, Issues 1-2, 2011, 477-489. DOI link: <http://dx.doi.org/10.1016/j.mcm.2011.02.037>
- [24] C. CIANCI, R. GRANERO, R. PICADO, F.J. PINO, N. RODRIGO, E. TAMAYO, M. VÁZQUEZ, B. IVORRA, B. MARTÍNEZ-LÓPEZ, A.M. RAMOS and J.M. SÁNCHEZ-VIZCAÍNO, Impact of the climatic changes on animal diseases spread: The example of the bluetongue in Spain. *Revista Complutense de Ciencias Veterinarias*, ISSN: 1988-2688, 5(1), 2011, 120-131. <https://revistas.ucm.es/index.php/RCCV/article/view/RCCV111120120A>
- [23] B. MARTÍNEZ-LÓPEZ, B. IVORRA, A.M. RAMOS and J.M. SÁNCHEZ-VIZCAÍNO, A novel spatial and stochastic model to evaluate the within and between herds transmission of classical swine fever virus: I. General concepts and description of the model. *Veterinary Microbiology* (Impact factor: 3.327, 2/143 in "Veterinary Sciences", JCR 2011), ISSN: 0378-1135, Vol. 147, Issues 3-4 (2011) 300-309. DOI link: <http://dx.doi.org/10.1016/j.vetmic.2010.07.009>
- [22] H.A. TINOCO, A.L. SERPA and A.M. RAMOS, Numerical study of the effects of bonding layer properties on electrical signatures of piezoelectric sensors. *Mecánica Computacional*, ISSN: 1666-6070, Vol 29, No. 86, 2010, pp. 8391-8409. <http://www.cimec.org.ar/ojs/index.php/mc/issue/view/600>
- [21] A.M. RAMOS, Maths and Industry at the Universidad Complutense de Madrid. *ECMI Newsletter Mathematics & Industry*, ISSN 1013-9338. Number 48, October 2010, 28-30. <http://www.mafy.lut.fi/EcmiNL/issues.php?action=viewiss&ID=48>
- [20] C. ALAVANI, R. GLOWINSKI, S. GOMEZ, B. IVORRA, P. JOSHI and A.M. RAMOS, Modelling and Simulation of a Polluted Water Pumping Process. *Mathematical and Computer Modelling* (Impact factor: 1.103, 69/236 in "Mathematics, Applied", JCR 2010), ISSN: 0895-7177. Volume 51, 2010, pp. 461-472. DOI link: <http://dx.doi.org/10.1016/j.mcm.2009.11.023>
- [19] J.A. INFANTE, B. IVORRA, A.M. RAMOS and J.M. REY, On the Modelling and Simulation of High Pressure Processes and Inactivation of Enzymes in Food Engineering. *Mathematical Models & Methods in Applied Sciences (M3AS)* (Impact factor: 2.095, 9/204 in "Mathematics, Applied", JCR 2009), ISSN: 0218-2025 (paper), ISSN: 1793-6314 (online). Vol. 19, No. 12, 2009, pp. 2203-2229. DOI link: <http://dx.doi.org/10.1142/S0218202509004091>

- [18] B. IVORRA, B. MOHAMMADI and A.M. RAMOS, Optimization strategies in credit portfolio management. *Journal of Global Optimization* (Impact factor: 1.454, 39/204 in "Mathematics, Applied", JCR 2009), ISSN: 0925-5001 (paper), ISSN: 1573-2916 (online). Volume 43, Numbers 2-3 / March 2009, pp. 415–427. DOI link: <http://dx.doi.org/10.1007/s10898-007-9221-6>
- [17] A. FRAGUELA, J.A. INFANTE, A.M. RAMOS and J.M. REY, Identification of a Heat Transfer Coefficient when it is a Function Depending on Temperature. *WSEAS Transactions on Mathematics*, ISSN: 1109-2769, Issue 4, Volume 7, April 2008, pp. 160–172. <http://www.wseas.us/e-library/transactions/mathematics/2008/25-698.pdf>
- [16] R. AZENCOTT, R. GLOWINSKI and A.M. RAMOS, A Controllability Approach to Shape Identification. *Applied Mathematics Letters* (Impact factor: 0.948, 64/175 in "Mathematics, Applied", JCR 2008), ISSN: 0893-9659. Vol. 21, Issue 8, 2008, pp. 861-865. DOI link: <http://dx.doi.org/10.1016/j.aml.2007.08.013>
- [15] B. GUIGNON, J.S. TORRECILLA, L. OTERO, A.M. RAMOS, A.D. MOLINA-GARCÍA and P.D. SANZ, The Initial Freezing Temperature of Foods at High Pressure. *Critical Reviews in Food Science and Nutrition* (Impact factor: 4.154, 1/107 in "Food Science & Technology", JCR 2008), ISSN: 1040-8398. Vol. 48, Issue 4, 2008, pp. 328–340. DOI link: <http://dx.doi.org/10.1080/10408390701347736>
- [14] J. HENRY and A.M. RAMOS, Study of the Initial Value Problems Appearing in a Factorization Method of Second Order Elliptic Boundary Value Problems. *Nonlinear Analysis. Theory, Methods & Applications* (Impact factor: 1.295, 15/215 in "Mathematics", JCR 2008). ISSN: 0362-546X. Vol. 68, 2008, pp. 2984–3008. DOI link: <http://dx.doi.org/10.1016/j.na.2007.02.040>
- [13] A.M. RAMOS and T. ROUBÍČEK, Nash Equilibria in Noncooperative Predator-Prey Games. *Applied Mathematics and Optimization* (Impact factor: 0.873, 55/165 in "Mathematics, Applied", JCR 2007), ISSN: 0095-4616 (Paper) 1432-0606 (electronic version). Volume 56, Number 2, 2007, 211–241, DOI link: <http://dx.doi.org/10.1007/s00245-007-0894-5>
- [12] B. IVORRA, A.M. RAMOS and B. MOHAMMADI, Semideterministic Global Optimization Method: Application to a Control Problem of the Burgers Equation. *Journal of Optimization, Theory and Applications* (Impact factor: 0.688, 84/165 in "Mathematics, Applied", JCR 2007), ISSN: 0022-3239, Vol. 135, 2007, 549–561. DOI link: <http://dx.doi.org/10.1007/s10957-007-9251-8>
- [11] L. OTERO, A.M. RAMOS, C. DE ELVIRA and P.D. SANZ, A Model to Design High-Pressure Processes Towards an Uniform Temperature Distribution. *Journal of Food Engineering* (Impact factor: 1.848, 15/114 in "Engineering, Chemical", JCR 2007), ISSN: 0260-8774, Vol 78, 2007, 1463–1470. DOI link: <http://dx.doi.org/10.1016/j.jfoodeng.2006.01.020>
- [10] B. GUIGNON, A.M. RAMOS, J.A. INFANTE, J.M. DÍAZ and P.D. SANZ, Determining thermal parameters in the cooling of a small-scale high pressure freezing vessel. *International Journal of Refrigeration - Revue Internationale du Froid* (Impact factor: 0.936, 26/106 in "Engineering, Mechanical", JCR 2006), ISSN: 0140-7007, Vol. 29, 2006, 1152–1159. DOI link: <http://dx.doi.org/10.1016/j.ijrefrig.2006.01.007>
- [9] J.I. DÍAZ and A.M. RAMOS, Numerical Experiments Regarding the Distributed Control of Semilinear Parabolic Problems. *Computers & Mathematics with Applications*, ISSN: 0898-1221, Vol. 48, 2004, pp. 1575–1586. DOI link: <http://dx.doi.org/10.1016/j.camwa.2004.04.033>

- [8] J. HENRY and A.M. RAMOS, Factorization of Second Order Elliptic Boundary Value Problems by Dynamic Programming. *Nonlinear Analysis. Theory, Methods & Applications*, ISSN: 0362-546X, Vol. 59, 2004, pp. 629–647. DOI link: <http://dx.doi.org/10.1016/j.na.2004.05.022>
- [7] L. OTERO, A. MOLINA, A.M. RAMOS and P.D. SANZ, A model for the real thermal control in high-pressure treatment of foods. *Biotechnology Progress*, ISSN: 8756-7938, Vol. 18, 2002, pp. 904–908. DOI link: <http://dx.doi.org/10.1021/bp010157a>
- [6] A.M. RAMOS, R. GLOWINSKI and J. PERIAUX, Pointwise Control of the Burgers Equation and related Nash Equilibrium Problems: A Computational Approach. *Journal of Optimization, Theory and Applications*, ISSN: 0022-3239, Vol. 112, N. 3, 2002, pp. 499–516. DOI link: <http://dx.doi.org/10.1023/A:1017907930931>
- [5] A.M. RAMOS, R. GLOWINSKI and J. PERIAUX, Nash Equilibria for the Multi-Objective Control of Linear Partial Differential Equations. *Journal of Optimization, Theory and Applications*, ISSN: 0022-3239, Vol. 112, N. 3, 2002, pp. 457–498. DOI link: <http://dx.doi.org/10.1023/A:1017981514093>
- [4] J.I. DÍAZ, J. HENRY and A.M. RAMOS, On the approximate controllability of some semilinear parabolic boundary value problems. *Applied Mathematics and Optimization*, ISSN: 0095-4616 (Paper) 1432-0606 (Online), Vol. 37, N. 1, 1998, pp. 71–97. DOI link: <http://dx.doi.org/10.1007/s002459900069>
- [3] J.I. DÍAZ and A.M. RAMOS, Some Results About the Approximate Controllability Property for Quasilinear Diffusion Equations. *Comptes Rendus de l'Académie des Sciences Serie I-Mathematique*. Now (since 2002): *Comptes Rendus Mathematique*, ISSN: 1631-073X, t. 324, Série I, 1997, pp. 1243–1248. DOI link: [http://dx.doi.org/10.1016/S0764-4442\(99\)80407-8](http://dx.doi.org/10.1016/S0764-4442(99)80407-8)
- [2] J.I. DÍAZ, J. HENRY and A.M. RAMOS, On the Approximate Controllability for Second Order Nonlinear Parabolic Boundary Value problems. *Journal of Applied Mathematics and Mechanics / Zeitschrift für Angewandte Mathematik und Mechanik*, ISSN: 0044-2267 (Paper) 1521-4001 (Online). Vol. 76, suppl. 3, 1996, pp. 403–404. DOI link: <http://dx.doi.org/10.1002/zamm.19960761312>
- [1] J.I. DÍAZ and A.M. RAMOS, Positive and negative approximate controllability results for semilinear parabolic equations. *Revista de la Real Academia de Ciencias Exactas, Físicas y Naturales de Madrid*, ISSN: 0034-0596. Tomo LXXXIX, Cuaderno I-II, 1995, pp. 11–30. Available online: http://dmle.cindoc.csic.es/pdf/RRACEFN_1995_89_01-02_02.pdf

6.3 Chapters in books

- [28] B. IVORRA, M. CRESPO, J.L. REDONDO, A.M. RAMOS, P. MARTÍNEZ and J.G. SANTIAGO, Modeling and Optimization Applied to the Design of Fast Hydrodynamic Focusing Microfluidic Mixer for Protein Folding. In *Progress in Industrial Mathematics at ECMI 2016*, Springer International Publishing AG 2017 P. Quintela et al. (eds.), Book series: Mathematics in Industry 26, Print ISBN: 978-3-319-63081-6, Electronic ISBN: 978-3-319-63082-3, 2018, pp. 640–655. DOI link: https://doi.org/10.1007/978-3-319-63082-3_98
- [27] D. NGOM, B. IVORRA and A.M. RAMOS, Stability analysis of a compartmental SEIHRD model for the Ebola Virus Disease. In *Mathematical Methods and Models in Biosciences*, Series: Texts in Biomathematics. ISBN 978-619-7451-00-9 (print), 978-619-7451-01-6 (online), ISSN: 2603-3046,

- 2018, pp. 44–56. Book DOI link: <http://dx.doi.org/10.11145/texts.2018.017>, Paper DOI link: <http://dx.doi.org/10.11145/texts.2017.12.165>.
- [26] M.R. FERRÁNDEZ, S. PUERTAS-MARTÍN, J.L. REDONDO, B. IVORRA, A.M. RAMOS and P.M. ORTIGOSA, Computación de alto rendimiento para optimizar tratamientos térmicos de alta presión en la industria alimenticia. In *Avances en arquitectura y tecnología de computadores. Actas de las Jornadas SARTECO 2017*. ISBN-13: 978-84-697-4835-0, 2017, pp. 119–122. Málaga: Zenodo. DOI link: <http://doi.org/10.5281/zenodo.1000755>
- [25] M.R. FERRÁNDEZ, J.L. REDONDO, B. IVORRA, A.M. RAMOS and P.M. ORTIGOSA, A Multi-Objective Methodology to Optimize High-Pressure/Thermal Treatment in Food Industry. In *Libro de comunicaciones definitivas presentadas en CEDYA + CMA 2017*. ISBN: 978-84-944402-1-2, páginas 710–717. Available at <http://cedya2017.org/archivos/libroComunicacionesDefinitivasCEDYA+CMA2017.pdf>
- [24] B. IVORRA, S. GOMEZ, R. GLOWINSKI and A.M. RAMOS, Nonlinear Advection-Diffusion-Reaction Phenomena Involved in the Evolution and Pumping of Oil in Open Sea: Modeling, Numerical Simulation and Validation Considering the Prestige and Oleg Naydenov Oil Spill Cases. In *Libro de comunicaciones definitivas presentadas en CEDYA + CMA 2017*. ISBN: 978-84-944402-1-2, páginas 361–368. Available at <http://cedya2017.org/archivos/libroComunicacionesDefinitivasCEDYA+CMA2017.pdf>
- [23] M.R. FERRÁNDEZ, S. PUERTAS-MARTÍN, J.L. REDONDO, B. IVORRA, A.M. RAMOS and P.M. ORTIGOSA, High-Performance Computing for Optimizing High-Pressure Thermal Treatments in Food Processing. In *Proceedings of the 17th International Conference on Computational and Mathematical Methods in Science and Engineering, CMMSE 2017*, Vol. III, pp. 862–869, Costa Ballena, Rota, Cádiz (Spain), July 4th–8th, 2017. Editors: J. Vigo-Aguiar. Associate Editors: J. Medina, M. E. Cornejo, W. Sprößig, T. Sheng, P. Gill, E. Venturino, I. P. Hamilton, J.A. Álvarez-Bermejo, H. Ramos. ISBN: 978-84-617-8694-7.
- [22] M.R. FERRÁNDEZ, J.L. REDONDO, B. IVORRA, A.M. RAMOS and P.M. ORTIGOSA, [Optimization of Enzymes Inactivation in High Pressure Processes](#). In *Proceedings of the XIII GLOBAL OPTIMIZATION WORKSHOP GOW16*. Editors: A.M.A.C. Rocha, E.M.G.P. Fernandes. 4–8 September 2016. University of Minho, Braga, ISBN-13: 978-979-20-6764-3, pages 69–72.
- [21] A.M. RAMOS, B. IVORRA, E. FERNÁNDEZ-CARRIÓN, B. MARTINEZ-LOPEZ, D. NGOM and J.M. SANCHEZ-VIZCAINO, Be-CoDiS and Be-FAST: Mathematical models to predict the spread of human and livestock diseases with real data. Application to the 2014-15 Ebola Virus Disease epidemic and livestock diseases. In *Microbes in the spotlight: recent progress in the understanding of beneficial and harmful microorganisms*. Editor: A. Méndez-Vilas, 2016, ISBN-10: 1-62734-612-0, ISBN-13: 978-1-62734-612-2, pages 422–426, BrownWalker Press.
- [20] B. IVORRA, D. NGOM and A.M. RAMOS, Be-CoDiS: A deterministic mathematical model to predict the risk of human diseases spread between countries. Application to the 2014-15 Ebola Virus Disease epidemic. In *Proceedings of the XXIV Congress on Differential Equations and Applications / XIV Congress on Applied Mathematics Cádiz, June 8-12, 2015*. (Editors: J.M. Díaz Moreno, J.C. Díaz Moreno, C. García Vázquez, J. Medina Moreno, F. Ortegón Gallego, C. Pérez Martínez, M.V. Redondo Neble and J.R. Rodríguez Galván), pp. 114–120, 2015. Available online: <http://cedya2015.uca.es/cedya2015proceedings>

- [19] S. GÓMEZ, B. IVORRA, R. GLOWINSKI and A.M. RAMOS, Modeling the Optimal Trajectory of a Skimmer Ship to clean Oil Spills in the Open Sea. In *SPE Latin American and Caribbean Health, Safety, Environment and Sustainability Conference, 7-8 July, Bogotá, Colombia*. SPE-174150-MS . Society of Petroleum Engineers. ISBN 978-1-61399-394-1. 2015. DOI link: <http://dx.doi.org/10.2118/174150-MS>
- [18] A. FRAGUELA, J.A. INFANTE, B. IVORRA, A.M. RAMOS, J.M. REY and N. SMITH, Inverse problems in High Pressure Processes and Food Engineering. In *First Symposium on Inverse Problems and its applications (Ixtapa 2010)*. ISBN 978-607-477-505-1 (Editors. Joaquin Delgado, L. Hector Juarez, Patricia Saavedra, M. Luisa Sandoval), pp. 39–56, 2011.
- [17] A. FRAGUELA, J.A. INFANTE, A.M. RAMOS and J.M. REY, Identificación de conductividad cuando depende de la presión. In *First Symposium on Inverse Problems and its applications (Ixtapa 2010)*. ISBN 978-607-477-505-1 (Editors. Joaquin Delgado, L. Hector Juarez, Patricia Saavedra, M. Luisa Sandoval), pp. 25–37, 2011.
- [16] J.M. BELLO, J. HARMAND, B. IVORRA, A.M. RAMOS and A. RAPAPORT, Bio reactor shape optimization Modeling, simulation, and shape optimization of a simple bioreactor for water treatment. In *Colloque sciences et techniques de l'information et de la communication pour l'environnement 2011*, ISBN: 978-2-911256-46-2, 125–131, 2011, Lavoisier.
- [15] A. FRAGUELA, J.A. INFANTE, A.M. RAMOS and J.M. REY, Identification of a Pressure Dependent Heat Transfer Coefficient. In *Proceedings of the Inverse problems, design and optimization symposium (IPDO2010)*. 2010.
- [14] A. FRAGUELA, J.A. INFANTE, B. IVORRA, A.M. RAMOS, J.M. REY and N. SMITH, Mathematical Modelling in Food Engineering. In *Numerical Simulation in Physics and Engineering. Proceedings of the XIV Spanish–French Jacques–Louis Lions School, 2010*. Eds.: I. Arregui, J.A. García and C. Vázquez. Universidade da Coruña, Servizo de Publicacións, ISBN: 978-84-9749-420-5, pp. 283–301.
- [13] A. FRAGUELA, J.A. INFANTE, A.M. RAMOS and J.M. REY, Inverse Problems in Heat Exchange Processes. In *Modern Topics in Computer Science. Proceedings of the 2nd WSEAS International Conference on Computer Engineering and Applications (CEA'08)*, Acapulco, Mexico, January 2008. Electrical and Computer Engineering Series, Eds.: A. Grebennikov, A. Zemliak. WSEAS Press, ISSN: 1790-2760, ISBN: 978-960-6766-32-9, pp. 250-255.
- [12] L. OTERO, A.M. RAMOS, C. DE ELVIRA and P.D. SANZ, Modelling heat and mass transfer in high-pressure food processing. In *Proceedings of the 13th World Congress of Food Science & Technology: Food is Life. IUFOST 2006*, pp. 793–794, Nantes (Francia), 17–21 September 2006. DOI link: <http://dx.doi.org/10.1051/IUFoST:20060227>
- [11] A.M. RAMOS, J.A. INFANTE, B. GUIGNON and P.D. SANZ, Pressure supported freezing processes. Modelling and numerical simulation. In *Information Technologies and Computing Techniques for the Agro-Food Sector*. Eds.: E. Balsa-Canto, J. Mora, J.R. Banga and E. Oñate. International Center for Numerical Methods in Engineering (CIMNE), Barcelona, ISBN: 84-95999-46-3, Monografía CIMNE, N. 86, 2003, pp. 33–36.
- [10] A.M. RAMOS, Numerical Methods for Nash Equilibria in Multiobjective Control of Partial Differential Equations. In *Analysis and Optimization of Differential Systems*. Eds.: V. Barbu, I. Lasiecka, D. Tiba and C. Varsan. Kluwer Academic Publishers, Boston-Dordrecht-London, ISBN: 1-4020-7439-5, 2003, pp. 333–344.

- [9] J.I. DÍAZ, A.M. RAMOS, L. OTERO, A. MOLINA and P.D. SANZ, On the Mathematical Modeling and Control of High Hydrostatic Pressure Food Processing. In *Computational Techniques in Food Engineering*. Eds.: E. Balsa-Canto, J. Mora, J.R. Banga and E. Oñate. International Center for Numerical Methods in Engineering (CIMNE), Barcelona, ISBN: 84-95999-13-7, 2002, pp. 170–175.
- [8] R. GLOWINSKI and A.M. RAMOS, A Numerical Approach to the Neumann Control of the Cahn-Hilliard Equation. In *Computational Methods for Control and Applications*. Eds.: R. Glowinski, H. Kawarada and J. Periaux, Gakuto International Series: Mathematical Sciences and Applications, Vol. 16, Gakkotosho Co., Tokyo, ISBN: 4-7625-0425-4, 2002, pp. 111–155.
- [7] R. GLOWINSKI and A.M. RAMOS, Control and Stabilization of the Cahn-Hilliard Equation. A Numerical Approach. In *Actas XVI CEDYA Congreso de Ecuaciones Diferenciales y Aplicaciones / VI CMA Congreso de Matemática Aplicada*, Vol. III (Anexe), Servicio de Publicaciones y Producción Documental de la Universidad de Las Palmas de Gran Canaria. Eds.: R. Montenegro, G. Montero and G. Winter, ISBN: 84-95286-17-3, 1999.
- [6] J.I. DÍAZ and A.M. RAMOS, On the Approximate Controllability for Higher Order Parabolic Non-linear Equations of Cahn-Hilliard Type. In *Control and Estimation of Distributed Parameter Systems*. International Series of Numerical Mathematics, Vol. 126, Birkhäuser Verlag, Basel, Editores: W. Desch, F. Kappel and K. Kunisch, ISBN: 3-7643-5835-1, 1998, pp. 111–127.
- [5] A.M. RAMOS, Results on approximate controllability for quasilinear diffusion equations. In *Actas del XV C.E.D.Y.A./ V Congreso de Matemática Aplicada*, Vol. II. Servicio de Publicacións da Universidade de Vigo, Colección *Congresos*, N. 9, ISBN: 84-8158-097-X, 1998, pp. 1129–1134.
- [4] J.I. DÍAZ and A.M. RAMOS, Un método de viscosidad para la controlabilidad aproximada de ciertas ecuaciones parabólicas cuasilineales. In *Actas de la Jornada Científica en homenaje al Prof. Antonio Valle Sánchez*. Universidad de Sevilla, Colección *Ciencias*, N. 51, ISBN: 84-472-0407-3, 1997, pp. 133–151.
- [3] J.I. DÍAZ and A.M. RAMOS, Approximate Controllability and Obstruction Phenomena for Quasilinear Diffusion Equation. In *Computational Science for the 21st Century*. Eds.: M.O. Bristeau, G. Etgen, W. Fitzgibbon, J.L. Lions, J. Periaux and M.F. Wheeler. John Wiley & Sons, Ltd., Chichester (England), ISBN: 0-471-97298-3, 1997, pp. 698–707.
- [2] J.I. DÍAZ, J. HENRY and A.M. RAMOS, On the Cancellation Method for the Approximate Controllability of some Nonlinear Diffusion Processes. In *Modelado de Sistemas en Oceanografía, Climatología y Ciencias Medioambientales: aspectos matemáticos y numéricos*. Colección *Grupo de Análisis Matemático Aplicado de la Universidad de Málaga (Ecuaciones Diferenciales. Simulación Numérica. Desarrollo de Software)*, N. 6, Eds.: A. Valle and C. Parés. Univ. de Málaga, ISBN: 84-7496-269-2, 1994, pp. 211–216.
- [1] J.I. DÍAZ and A.M. RAMOS, Resultados positivos y negativos sobre la controlabilidad aproximada de problemas parabólicos semilineales. In *Actas del XIII C.E.D.Y.A./ III Congreso de Matemática Aplicada*. Eds.: A.C. Casal, L. Gavete, C. Conde and J. Herranz. Univ. Politécnica de Madrid, ISBN: 84-605-3273-9, 1993, pp. 640–645.

6.4 Miscellaneous

- [43] A.M. RAMOS, El Concurso de Modelización Matemática del IMI. *Boletín electrónico de la SEMA*, Número 29, febrero 2022, pp. 9–15. <https://www.sema.org.es/Boletines/boletin29/sec1.html>
- [42] A.M. RAMOS, En memoria de Roland Glowinski. *Boletín de la RSME*, Número 745, 4 febrero 2022, pp. 6–7. <https://www.rsme.es/wp-content/uploads/2022/02/Boletin745.pdf>
- [41] J. HERRERA, B. IVORRA and A.M. RAMOS, RaBVIt-SG, an algorithm for solving Feedback Nash equilibria in Multiplayers Stochastic Differential Games. *ResearchGate Preprint*, 2020. DOI link: <https://doi.org/10.13140/RG.2.2.19217.79208>
- [40] M.R. FERRÁNDEZ, M. VELA-PÉREZ, A.B. KUBIK, A.M. RAMOS and B. IVORRA, *La delgada línea entre la 2 y la posible 3 ola de COVID- 19 en España*. Technical Report. Research Gate, (12 December 2020); <https://doi.org/10.13140/RG.2.2.22467.22560>.
- [39] M.R. FERRÁNDEZ, B. IVORRA and A.M. RAMOS, *Final validation of the forecast for the spread of the Ebola virus disease 2018- 20 (EVD 2018-20) done with the Be-CoDiS mathematical model*. Technical Report. Research Gate, (17 July 2020); <https://doi.org/10.13140/RG.2.2.28275.14881>.
- [38] M.R. FERRÁNDEZ, B. IVORRA and A.M. RAMOS, *Validation of the forecasts for the spread of the Ebola virus disease 2018-20 (EVD 2018-20) done with the Be-CoDiS mathematical model*. Technical Report. Research Gate, (23 February 2020); <https://doi.org/10.13140/RG.2.2.34877.00485>.
- [37] M.R. FERRÁNDEZ, B. IVORRA, P.M. ORTIGOSA, A.M. RAMOS and J.L. REDONDO, *Application of the Be-CoDiS model to the 2018-19 Ebola Virus Disease outbreak in the Democratic Republic of Congo*. Technical Report. Research Gate, (23 July 2019); <https://doi.org/10.13140/RG.2.2.13267.63521/2>.
- [36] A.M. RAMOS, Modelling weeks in Spain. The case of Complutense University of Madrid. *ICIAM 2019 Valencia Intelligencer*. Springer, 2019, pp. 83–84.
- [35] M.R. FERRÁNDEZ, B. IVORRA, J.L. REDONDO, A.M. RAMOS and P.M. ORTIGOSA, *Predicting The Spread Of Epidemiological Diseases By Using A Multi-Objective Algorithm*. AIP Conference Proceedings 2070, 020016 (2019). DOI link: <https://doi.org/10.1063/1.5089983>.
- [34] S. GÓMEZ, B. IVORRA and A.M. RAMOS, *Modelación de la Dispersión de Hidrocarburos en el Mar para la Explotación del Campo POKOCH en el Golfo de México*. Technical Report for CSIPA (empresa Mexicana), 81 pages, October, 2018.
- [33] S. GÓMEZ, B. IVORRA and A.M. RAMOS, *Modelación de la Dispersión de Hidrocarburos en el Mar para la Explotación del Campo Lakach y del Campo Yoka en el Golfo de México*. Technical Report for CSIPA (Mexican company), 85 pages, 2017.
- [32] A. GARRIDO, J.M. SUMPSI, I. BARDAJÍ, M. MARTÍNEZ, M.I. MÍNGUEZ, C. HERNÁNDEZ, L. RODRIGUEZ, A.M. TARQUIS, R.M. BENITO, E. LUQUE, J.M. SÁNCHEZ-VIZCAÍNO, J. GOYACHE, M. MARTÍNEZ, A.M. RAMOS, J.L. SIERRA, J.M. LÓPEZ, E. FERNÁNDEZ-CARRIÓN, B. VILLA, L. RICO and R. VARGAS. *Information Systems for Agricultural Risk Management. Assessment in 7 Africa Countries. Cabo Verde, Cameroon, Ethiopia, Mozambique, Niger, Senegal and Uganda. Executive Summary Report* October 2016. Report for IFAD

- (United Nations - UN). Available at http://p4arm.org/app/uploads/2017/01/PARM_IS-ARM_Executive-Summary-Report_web.pdf
- [31] A.M. RAMOS and C.P. PLEASE Some comments on the Butler-Volmer equation for modeling Lithium-ion batteries. 2015. <http://arxiv.org/abs/1503.05912>
- [30] B. IVORRA, S. GÓMEZ and A.M. RAMOS, Modeling and Forecasting the 2015 Oleg Naydenov Oil Spill near the Canary Islands. 2015. <https://eprints.ucm.es/29958/>
- [29] C.J. CAWTHORN, L. BRIANT, J. BRIMLOW, S. COOK, M. DAVIES WYKES, I. HEWITT, N. LETCHFORD, J. OCKENDON, A. PEACE, C. PLEASE, A.M. RAMOS and M. ZAGOROWSKA, *Thin casting of silicon*. Report for the ESGI 91, University of Bristol, 15–19 April 2013. <http://www.bris.ac.uk/engineering/departments/engineering-mathematics/meetings/esgi91/problems>
- [28] L.M. MANUS, M. BROWN, A. LEWIS, A. MELNIK, A. RAMOS, C. BRETT, D. WOOD, I. VON GLEHN, J. DEWYNNE, K. KATTERBAUER, L. BERGER, M. BULKOWSKI, P. ROBERTS, R. WHITTAKER, S. GRANDISON and S. O’KEEFFE, *Inertial navigation for Divers*. Report for the ESGI 85, University of East Anglia, April 2012. <http://www.cimr.uea.ac.uk/workshops/esgi85/>; also in *Mathematics in industry reports (miir)*, 2021, <https://doi.org/10.33774/miir-2021-9mdvj>
- [27] E. FERNÁNDEZ, B. IVORRA, A.M. RAMOS, B. MARTÍNEZ-LÓPEZ and J.M. SÁNCHEZ-VIZCAÍNO, Diseño de un modelo económico y de planes de control para una epidemia de peste porcina clásica. *Prepublicaciones del Departamento de Matemática Aplicada, Universidad Complutense de Madrid*, MA-UCM 2011-15, 2011. <http://www.ucm.es/centros/cont/descargas/documento28250.pdf>
- [26] A.M. RAMOS, B. IVORRA, B. MARTÍNEZ-LÓPEZ and J.M. SÁNCHEZ-VIZCAÍNO, Mathematical modeling for real epidemics situations. The case of classical swine fever virus. In *Actas del XXII CEDYA / XII Congreso de Matemática Aplicada*. Universidad de Les Illes Balears, Palma de Mallorca. ISBN13: 978-84-694-4935-6. 2011. http://www.uibcongres.org/imgdb/archivo_dpo10402.pdf
- [25] N. SMITH, A.M. RAMOS and S. MITCHELL, Dimensional Analysis and simplifications of a Mathematical Model describing High-Pressure Food Processes. In *Actas del XXII CEDYA / XII Congreso de Matemática Aplicada*. Universidad de Les Illes Balears, Palma de Mallorca. ISBN13: 978-84-694-4935-6. 2011. http://www.uibcongres.org/imgdb/archivo_dpo10685.pdf
- [24] B. IVORRA, A.M. RAMOS, S. GÓMEZ and R. GLOWINSKI, Modeling, Simulation and Optimization of a Polluted Water Pumping Process in Open Sea. In *Actas del XXII CEDYA / XII Congreso de Matemática Aplicada*. Universidad de Les Illes Balears, Palma de Mallorca. ISBN13: 978-84-694-4935-6. 2011. http://www.uibcongres.org/imgdb/archivo_dpo10398.pdf
- [23] J.I. DÍAZ, T. MINGAZZINI and A.M. RAMOS, On an optimal control problem involving the location of a free boundary. In *Actas del XXII CEDYA / XII Congreso de Matemática Aplicada*. Universidad de Les Illes Balears, Palma de Mallorca. ISBN13: 978-84-694-4935-6. 2011. http://www.uibcongres.org/imgdb/archivo_dpo10762.pdf
- [22] R. ABELLA, I. ARMERO, B. IVORRA and A.M. RAMOS, Sensitivity Analysis of a Default Time Model for Credit Risk Portfolio Management. *Prepublicaciones del Departamento de Matemática Aplicada, Universidad Complutense de Madrid*, MA-UCM 2010-16, 2010. <http://www.ucm.es/centros/cont/descargas/documento22680.pdf>

- [21] J. BELLO, J.A. INFANTE, B. IVORRA, J. LÓPEZ, P. MARTINEZ, A.M. RAMOS, J.M. REY and N. SMITH, Mathematical modeling for protein folding devices. Applications to high pressure processing and microfluidic mixers. In CD *Proceedings of the Congress EngOpt 2010*. APMTA - Associação Portuguesa de Mecánica Teórica, Aplicada e Computacional. ISBN: 978-989-9626430. 2010.
- [20] M. CARRASCO, B. IVORRA, R. LECAROS and A.M. RAMOS, A variance-expected compliance approach for topology optimization. In CD *Proceedings of the Congress EngOpt 2010*. APMTA - Associação Portuguesa de Mecánica Teórica, Aplicada e Computacional. ISBN: 978-989-9626430. 2010.
- [19] F.D. MATLALCUATZI, A. FRAGUELA and A.M. RAMOS, Modelo matemático de la termorregulación en recién nacidos prematuros sometidos a tratamiento en incubadora. In *Memorias del XI Congreso Nacional de Matemática y Computación*, Boletín especial de la Sociedad Cubana de Matemática y Computación, 2009. CD-ROM, ISSN: 1728-6042.
- [18] A.M. RAMOS and N. SMITH, Mathematical Models in Food Engineering. In CD *Actas del XXI CEDYA / XI Congreso de Matemática Aplicada*. Universidad de Castilla-La Mancha. ISBN: 978-84-692-6473-7. 2009. http://matematicas.uclm.es/cedya09/archive/textos/52_Smith-N.pdf
- [17] B. IVORRA, B. MARTÍNEZ-LÓPEZ, A.M. RAMOS and J.M. SÁNCHEZ-VIZCAÍNO, Modeling classical swine fever spread using a spatial hybrid model. In CD con *Actas del XXI CEDYA / XI Congreso de Matemática Aplicada*. Universidad de Castilla-La Mancha. ISBN: 978-84-692-6473-7. 2009. http://matematicas.uclm.es/cedya09/archive/textos/55_Ivorra-B.pdf
- [16] A. FRAGUELA, J.A. INFANTE, A.M. RAMOS and J. M. REY, Identificación del coeficiente de transferencia de calor en una ecuación diferencial ordinaria. In CD *Actas del XXI CEDYA / XI Congreso de Matemática Aplicada*. Universidad de Castilla-La Mancha. ISBN: 978-84-692-6473-7. 2009. http://matematicas.uclm.es/cedya09/archive/textos/102_Rey-Cabezas-J.pdf
- [15] A. FRAGUELA, J.A. INFANTE, A.M. RAMOS and J. M. REY, Identificación de un coeficiente de conductividad térmica transitoria. In CD *Actas del XXI CEDYA / XI Congreso de Matemática Aplicada*. Universidad de Castilla-La Mancha. ISBN: 978-84-692-6473-7. 2009. http://matematicas.uclm.es/cedya09/archive/textos/100_Infante-del-Rio-J.pdf
- [14] A.M. RAMOS and N. SMITH, *Efecto de las altas presiones sobre los microorganismos en relación con la conservación de alimentos. Caso de la Listeria monocytogenes en jamón crudo picado*. Technical report for Esteban Espuña, S.A. 20 May, 2009.
- [13] J.A. INFANTE, B. IVORRA, A.M. RAMOS and J.M. REY, Modelling and Simulation of Heat and Mass Transfer for Liquid Type Foods under High Pressure Processes. In *COMSOL Conference - Worldwide*. CD-ROM. 2008. ISBN: 978-0-9766792-8-8.
- [12] B. MARTÍNEZ-LÓPEZ, B. IVORRA, A.M. RAMOS and J.M. SÁNCHEZ-VIZCAÍNO, Modelling the spread of classical swine fever into Spain using a spatial and stochastic model. In *Proceedings of the 20th International Pig Veterinary Society Congress*, page 87. Durban, (South Africa), 22–26 June, 2008.
- [11] M. CARRASCO, B. IVORRA, A.M. RAMOS and F. ÁLVAREZ, Validation of a new variance-expected compliance model for structural optimization. In DVD *Proceedings of EngOpt 2008 - International Conference on Engineering Optimization*, ISBN: 978-85-7650-152-7, Rio de Janeiro, Brazil,

- 1–5 June, 2008. http://www.engopt.org/kongreso/artigos/artigos_aprovados71a5.html?autor=1435&idioma=en
- [10] B. IVORRA, A.M. RAMOS, B. MOHAMMADI and Y. MOREAU, Design of Code Division Multiple Access Filters Using Global Optimization Techniques. In DVD con *Proceedings of EngOpt 2008 - International Conference on Engineering Optimization*, ISBN: 978-85-7650-152-7, Rio de Janeiro, Brazil, 1–5 June, 2008. http://www.engopt.org/kongreso/artigos/artigos_aprovados223f.html?autor=1458&idioma=en
- [9] G. BARCELÓ, J.I. DÍAZ and A.M. RAMOS, Un problema inverso emergente en el estudio de los movimientos con rotaciones intrínsecas no coaxiales de un disco. *Actas de XX CEDYA (X Congreso de Matemáticas Aplicada)*, ISBN 978-84-690-7182-3. Seville, 24–28 September 2007. <http://congreso.us.es/cedya2007/actas/index.html>
- [8] J. HENRY, B. LOURO and A.M. RAMOS, A Factorization Method for a Singular Perturbation Problem. *23rd IFIP TC 7 Conference on System Modelling and Optimization Cracow, Poland, July 23-27, 2007. Book of Abstracts*, Published by Wydawnictwa Wydziału Elektrotechniki, Automatyki, Informatyki i Elektroniki Akademia Górniczo-Hutnicza, Poland. ISBN 978-83-88309-0. Kraków, 2007. pp. 315–316. http://ifip2007.agh.edu.pl/IFIP2007_Book_of_Abstracts.pdf
- [7] S.J. ÁLVAREZ, J.A. INFANTE, B. IVORRA, A.M. RAMOS and J.M. REY, Modelling and Simulation of High Pressure Processes in Food Engineering. In CD-ROM con las Actas del *Congress on Numerical Methods in Engineering (CMNE 2007)* and *Iberian Latin American Congress on Computational Methods in Engineering (XXVIII CILAMCE)*. Eds: A. Rodriguez-Ferran, J. Oliver, P.R.M. Lyra, J. L.D. Alves, Porto, Portugal, 13–15 June, 2007.
- [6] J.I. DÍAZ and A.M. RAMOS, Sobre la compatibilidad de una descripción de velocidades y las ecuaciones del movimiento de un sólido rígido. Technical report for Advanced Dynamics, S.A., 30 December 2006.
- [5] J.S. TORRECILLA, L. OTERO, B. GUIGNON, P.D. SANZ and A.M. RAMOS, Modelling of high-pressure treatments of foods by an Artificial Neural Network Authors. In CD-ROM *17th International Congress of Chemical and Process Engineering (CHISA 2006)*, Prague, Czech Republic, 27–31 August, 2006.
- [4] J. HENRY and A.M. RAMOS, A Direct Study in a Hilbert-Schmidt Framework of the Riccati Equation Appearing in a Factorization Method of Second Order Elliptic Boundary Value Problems. Rapport de Recherche N. 4451 INRIA, Paris, 2002, ISSN: 0249-6399, 46 pages. <http://hal.inria.fr/docs/00/07/21/37/PDF/RR-4451.pdf>
- [3] J.I. DÍAZ and A.M. RAMOS, Numerical Experiments Regarding the Localized Control of Semilinear Parabolic Problems. In CD-ROM *European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2000)*, Barcelona, 11–14 September 2000. ISBN: 84-89925-70-4.
- [2] J.I. DÍAZ and A.M. RAMOS, Approximate controllability and obstruction for higher order semilinear parabolic problems. *Actas electrónicas del XIV C.E.D.Y.A./ IV Congreso de Matemática Aplicada*. Vic (Barcelona), 18-22 September 1995. Comunicación N. 36 at <http://www.mat.ub.edu/EMIS/proceedings/XIVCEDYA/>
- [1] A.M. RAMOS, *Controlabilidad aproximada de problemas de tipo parabólico*. Ms Thesis, Department of Applied Mathematics, Universidad Complutense de Madrid. June 1993, 55 pages.

7 Principal investigator in research projects

-*Modelización, simulación numérica y optimización para varios problemas de interés general*. Ministry of Science and Innovation. Ref. PID2019-106337GB-I00. From 1/June/2020 al 31/May/2024.

-*Modelos Matemáticos en Ciencia y Tecnología: desarrollo, análisis, simulación numérica y control*. Universidad Complutense de Madrid. Ref. 910480 From 02/June/2021 to 31/December/2021.

-*Estudio del potencial impacto del COVID19 en mascotas y lince*s. Instituto de Salud Carlos III. FONDO - COVID19. Ref. COV20/01385. From 16/June/2020 to 16/November/2021. Participantes: UCM, IS CARLOS III, IREC UCIM, UCO, CENTROS AVEM, INGENASA. Principal investigator (general coordinator): José Manuel Sánchez-Vizcaíno. Principal investigator (MOMAT node): A.M. Ramos.

-*Modelos Matemáticos en Ciencia y Tecnología: desarrollo, análisis, simulación numérica y control*. Universidad Complutense de Madrid. Ref. 910480 From 19/February/2020 to 31/December/2020.

-*Modelización matemática en varios temas de interés para la sociedad*. Ministry of Economy and Competitiveness. Ref. MTM2015-64865-P. From 1/January/2016 to 31/December/2020.

-*Modelos Matemáticos en Ciencia y Tecnología: desarrollo, análisis, simulación numérica y control*. Universidad Complutense de Madrid. Ref. 910480 From 13/December/2018 to 30/September/2019.

-*Matemáticas para el avance interdisciplinar en altas presiones, sanidad animal y otros temas de interés científico y tecnológico*. Ministry of Economy and Competitiveness. Ref. MTM2011-22658. From 1/January/2012 to 30/June/2016.

-*Modelos Matemáticos en Ciencia y Tecnología: desarrollo, análisis, simulación numérica y control*. Banco Santander and Universidad Complutense de Madrid. Ref. 910480 From 21/November/2014 to 20/November/2015.

-*Química a alta presión (QUIMAPRES)*. Comunidad de Madrid. Ref. S2009/PPQ-1551. From 1/January/2010 to 31/May/2014

-*Modelos Matemáticos en Ciencia y Tecnología: desarrollo, análisis, simulación numérica y control*. Banco Santander and Universidad Complutense de Madrid. Ref. 910480 From 1/January/2011 to 28/February/2012.

-*Modelos matemáticos en tecnología agroalimentaria y sanidad animal*. Ministry of Science and Innovation. Ref. MTM2008-04621/MTM. From 1/January/2009 to 30/April/2012

-*Modelos Matemáticos en Ciencia y Tecnología: desarrollo, análisis, simulación numérica y control*. Banco Santander and Universidad Complutense de Madrid. Ref. 910480. From 1/January/2009 to 31/December/2010

-*Modelización y simulación en Ciencia y Tecnología con Ecuaciones en Derivadas Parciales*. Comunidad de Madrid and Universidad Complutense de Madrid. Ref. CCG07-UCM/ESP-2787. From 1/January/2008 to 31/December/2008.

-*Estudio matemático de problemas planteados en Ingeniería de alimentos*. Ministry of Education and Science. Ref. MTM2007-64540. From 1/October/2007 to 30/September/2008.

-*Modelización y simulación de procesos de inactivación microbiológica en tratamientos de alimentos por altas presiones*. Ministry of Education and Science, through the CONSOLIDER INGENIO MATEMÁTICA project (Ref. CSD2006-00032). Ref. FUT-C2-0044. From 1/October/2007 to 30/September/2008.

-*Avances para la Modelización y Simulación en Algunas Líneas Estratégicas de Ciencia y Tecnología*. Comunidad de Madrid and Universidad Complutense de Madrid. Ref. CCG06-UCM/ESP-1110. From 1/January/2007 to 31/December/2007.

-*Modelización matemática de procesos de congelación a altas presiones en la criocentración de zumos y la producción de helados*. Ministry of Education and Science. Ref. AGL2006-12112-C03-02/ALI. From 1/October/2006 to 30/September/2007.

-*Modelos Matemáticos en Ciencia y Tecnología: Desarrollo, Análisis, Simulación Numérica y Control*. Comunidad de Madrid. Ref: UCM2005-910480. From 30/December/2005 to 29/December/2006.

-*Elaboración de modelos matemáticos de procesos de congelación/descongelación asistidos por altas presiones en alimentos*. Ministry of Science and Technology. Ref. AGL2003-06862-C02-02. From 1/December/2003 to 30/November/2006.

-*Método de factorización de problemas con valores en la frontera y sus aplicaciones*. Bilateral project Spain-Portugal. Ref. HP02-90. From 1/January/2003 to 31/March/2005.

-*Modelización, diseño y optimización de un proceso de congelación asistido por altas presiones en alimentos*. Ministry of Education and Science. Ref. AGL2000-1440-C02-01. From 1/January/2001 to 31/December/2003.

8 Participation in other research projects

-*Una vacuna contra la peste porcina africana*. Europea Union. H2020-SFS-2019-1. From 1/November/2019 to 31/October/2023. Principal investigator: José Manuel SÁNCHEZ-VIZCAÍNO. Funding: 10,000,000 euros

-*Escenarios multimedia en formación de futuros profesores universitarios de Matemáticas (ESCMMAT-Univ)*. Innovation in Education. Universidad Complutense de Madrid. Ref. PIMCD-214. From 1/October/2018 to 30/September/2019. Principal investigator: Inés María GÓMEZ CHACÓN.

-*Modelado y Optimización de Problemas de la Industria Alimentaria basados en Computación de Altas Prestaciones. MOPIA-HPC*. Andalusia Government. Ref. P12-TIC301. From 30/January/2014 to 29/January/2018. Principal investigator: Pilar MARTÍNEZ ORTIGOSA.

-*Modelación matemática de la actividad eléctrica del ventrículo derecho en el síndrome de brugada y su correlación con el electrocardiograma y la generación de arritmias ventriculares*. Consejo Nacional de Ciencia y Tecnología (CONACYT), México. Ref. 176987. From 1/January/2013 to 31/December/2016. Principal investigator: Andrés FRAGUELA COLLAR.

-*Problemas directos e inversos en Biología e Ingeniería*. Dirección General de Educación Superior Universitaria (México). Ref. PROMEP/103.5/09/1265 (Research network between Benemérita Universidad Autónoma de Puebla (Mexico), Universidad Autónoma Metropolitana (México), Universidad Complutense and Universidad de Alicante). From 1/January/2009 to 31/July/2014. Principal investigator: José Jacobo OLIVEROS OLIVEROS.

-*Fronts and Interfaces in Science and Technology (FIRST)*. Training Networks of the European Commission (Grant Agreement Number 238702). European Union. SEVENTH FRAMEWORK PROGRAMME, PEOPLE Work Programme 2008. Ref. PITN-GA-2009-238702. From 1/January/2010 to 31/December/2013. Principal investigator: Jesús Ildefonso DÍAZ DÍAZ

-*Un modelo matemático híbrido para la difusión de enfermedades animales y su impacto económico.* Ministry of Science and Education, through project CONSOLIDER INGENIO MATHEMATICA (Ref. CSD2006-00032). Ref. CONS-C6-0356. From 2/October/2010 to 1/October/2011. Principal investigator: Benjamin IVORRA.

-*Mejora de las competencias profesionales del Máster en Ingeniería Matemática.* Innovation in Education. Universidad Complutense de Madrid. Ref. 318. From 1/October/2009 to 30/September/2010. Principal investigator: Juan Antonio TEJADA CAZORLA.

-*Nonlinear partial differential equations describing front propagation and other singular phenomena.* Research Training Networks of the European Commission. Ref. HPRN-CT-2002-00274. From 1/April/2002 to 1/April/2006. Principal investigator: M. BERTSCH.

-*Estudio de las soluciones numéricas a largo plazo de los modelos de ecuaciones primitivas de circulación general del océano.* Ministry of Science and Technology. Ref. REN2002-03726. From 1/November/2002 to 1/November/2005. Principal investigator: Rodolfo BERMEJO BERMEJO.

-*Programación dinámica y factorización de problemas de contorno.* Ministry of Science and Technology. Spanish-French projects. Ref. REN2002-03726. From 1/January/2001 to 31/December/2002. Principal investigators: Jesús Ildefonso DÍAZ DÍAZ and Jacques HENRY.

-*Modelos no lineales en Hidrodinámica.* Ministry of Science and Technology. Spanish-German projects. Ref. HA96-83. From 1/January/1998 to 31/December/1999. Principal investigators: Jesús Ildefonso DÍAZ DÍAZ and Peter TAKAC.

-*Problemas no lineales elípticos y parabólicos en ecuaciones en derivadas parciales.* Ministry of Education and Science. Ref. PB96-0583. From 1/December/1997 to 1/December/2000. Principal investigator: Jesús Ildefonso DÍAZ DÍAZ.

-*Modelo de circulación oceánica.* Comisión Interministerial de Ciencia y Tecnología (CICYT) (in English Inter-ministerial board of Science and Technology). Ref. AMB93-0199. From 3/June/1993 to 3/June/1996. Principal investigator: Rodolfo BERMEJO BERMEJO.

9 Research contracts

-*Estudio del análisis de riesgo de derrames de petróleo.* Company: CSIPA S.A. de C.V. (México). Participants: Universidad Complutense de Madrid (UCM). From 3/December/2019 to 3/December/2022. Principal Investigator: Ángel Manuel Ramos del Olmo.

-*Diseño y desarrollo de un proyecto de investigación destinado al desarrollo de herramientas in vitro e in vivo para la evaluación de vacunas clostridiales.* Company: Laboratorios Syva S.A.. Participants: Universidad Complutense de Madrid (UCM). From 20/February/2021 to 30/September/2021. Principal Investigator: Lucas Domínguez Rodríguez

-*Predicción del recorrido de derrames de petróleo.* Company: Holding Nautilus de seguridad industrial (Mexico). Participants: Universidad Complutense de Madrid (UCM) From 8/January/2018 to 27/October/2019 Principal Investigator: Ángel Manuel Ramos del Olmo

-*Assessment of Agricultural Risk Management Information Systems (ARM-IS) in the following Africa Countries: Cape Verde, Cameroon, Ethiopia, Mozambique, Niger, Senegal and Uganda.* International Fund for Agricultural Development (IFAD - specialized agency of the United Nations UN). Partici-

pants: Universidad Politécnica de Madrid (UPM) and Universidad Complutense de Madrid (UCM). From September/2015 to September/2016 Principal investigator: Alberto Garrido (UPM). Report available at http://p4arm.org/app/uploads/2017/01/PARM_IS-ARM_Executive-Summary-Report_web.pdf

-*Contract between UCM (Research Group MOMAT) and Advanced Dynamics, S.A.*. Advanced Dynamics, S.A. (Spain). Agreement 5901, UCM. From 4/May/2007 to 3/May/2008.

-*Proyecto de Investigación para el desarrollo de un dictamen matemático sobre movimientos de un sólido rígido.* Advanced Dynamics, S.A. (Spain). From 1/March/2006 to 1/May/2006.

10 Registered Software

-Be-FAST. Registration number (January 11th, 2016): M-2614-15.

Program for the simulation of the spread of livestock diseases with real data.

Authors and right owners: E. Fernández Carrión, A.M. Ramos del Olmo, J.M. Sánchez-Vizcaíno Rodríguez, B. Martínez López and B. Ivorra.

11 Experience organizing other research activities

TITLE: Permanent seminar *Las Matemáticas en lucha contra las epidemias*.

TYPE OF ACTIVITY: Director

PLACE AND DATE: University Complutense of Madrid, October 25–29, 2021.

<https://www.ucm.es/imi/semiepi2021>

TITLE: IV IMI Contest of Mathematica Modeling (CMM-IMI 2021).

TYPE OF ACTIVITY: Coordinator of the Organizing Committee

DATES: From September 30th to October 3rd, 2021.

<http://blogs.mat.ucm.es/cmm/edicion-2021>

TITLE: Permanent seminar *Las Matemáticas en lucha contra las epidemias*.

TYPE OF ACTIVITY: Director

PLACE AND DATE: University Complutense of Madrid, December 9–15, 2020.

<https://www.ucm.es/imi/semiepi2020>

TITLE: III IMI Contest of Mathematica Modeling (CMM-IMI 2020).

TYPE OF ACTIVITY: Coordinator of the Organizing Committee

DATES: 15–19/October/2020.

<http://blogs.mat.ucm.es/cmm/edicion-2020>

TITLE: Permanent seminar *Las Matemáticas en lucha contra las epidemias*.

TYPE OF ACTIVITY: Director

PLACE AND DATE: University Complutense of Madrid, October 14–18, 2019.

TITLE: II IMI Contest of Mathematica Modeling (CMM-IMI 2019).

TYPE OF ACTIVITY: Coordinator of the Organizing Committee

DATES: 19–23/September/2019.
<http://blogs.mat.ucm.es/cmm/edicion-2019>

TITLE: Las Matemáticas, vector estratégico de progreso.
TYPE OF ACTIVITY: Main organizer
PLACE AND DATE: University Complutense of Madrid, May 23, 2019.
WEB PAGE:
<https://www.ucm.es/imi/matematicas-vector-de-progreso>

TITLE: Permanent seminar *Las Matemáticas en lucha contra las epidemias*.
TYPE OF ACTIVITY: Director
PLACE AND DATE: University Complutense of Madrid, October 22–24, 2018.
WEB PAGE:
http://www.mat.ucm.es/imi/carteles/2018/2018-10-22a24Cartel_Seminario-CESEDEN-IMI-MOMAT.pdf

TITLE: I IMI Contest of Mathematica Modeling (CMM-IMI 2018).
TYPE OF ACTIVITY: Coordinator of the Organizing Committee
DATES: 20–24/September/2019.
<http://blogs.mat.ucm.es/cmm/edicion-2018/>

TITLE: Permanent seminar *Las Matemáticas en lucha contra las epidemias*.
TYPE OF ACTIVITY: Director
PLACE AND DATE: University Complutense of Madrid, November 6–8, 2017.
WEB PAGE: http://www.mat.ucm.es/imi/carteles/2017/Cartel_SeminarioEpidemias_06112017.pdf

TITLE: Summer course *Matemáticas ¿para qué?*.
TYPE OF ACTIVITY: Director
PLACE AND DATE: University Complutense of Madrid, July 3–7, 2017.
WEB PAGE: <https://www.ucm.es/data/cont/media/www/pag-13630/72114.pdf>

TITLE: *Primera Jornada en "Modelización y Optimización con COMSOL MULTIPHYSICS"*.
TYPE OF ACTIVITY: Member of the Organizing Committee
PLACE AND DATE: Madrid, February 5th, 2016.
WEB PAGE: <http://www.mat.ucm.es/~ivorra/wsc>

TITLE: *Joint AIRAPT-25th & EHPRG-53rd International Conference on High Pressure Science and Technology*.
TYPE OF ACTIVITY: Member of the Programme Committee and scientific responsible of the topic "Industrial Applications and Metrology (Biomedical Applications, Pharmaceuticals)"
PLACE AND DATE: Madrid, from August 30th to September 4th, 2015.
WEB PAGE: <http://www.airapt-ehprg-madrid2015.com>

TITLE: *II Workshop on "Modelling and Simulation of Epidemics"*.
TYPE OF ACTIVITY: President of the Organizing Committee
PLACE AND DATE: Madrid, May 26th, 2015.

WEB PAGE: <http://www.mat.ucm.es/momat/2WEpidemics>

TITLE: *Modelización matemática para profesores de bachillerato*. Escuela Complutense Latinoamericana.

TYPE OF ACTIVITY: Co-director of the course.

PLACE AND DATE: Puebla (Méjico), 18–29 November, 2013.

WEB PAGE: <http://www.ucm.es/fundacion/presentacion-1>

TITLE: *XV Jacques–Louis Lions Spanish–French School on Numerical Simulation in Physics and Engineering*

TYPE OF ACTIVITY: Member of the Scientific Committee

PLACE AND DATE: Torremolinos (Málaga), 24–28 September, 2012.

TITLE: *Seminar of the Applied Mathematics Department, UCM*.

TYPE OF ACTIVITY: Organizer of the seminar

PLACE AND DATE: Madrid, since 31-01-2008.

WEB PAGE: <http://www.ucm.es/centros/webs/d253/index.php?tp=Investigación&a=invest&d=16240.php>

TITLE: *XXII CEDYA / XII CMA*

TYPE OF ACTIVITY: Member of the Scientific Committee

PLACE AND DATE: Palma de Mallorca, 5–9 September, 2011.

WEB PAGE: <http://www.uibcongres.org/congresos/ficha.es.html?cc=194>

TITLE: *Nonlinear Models in Partial Differential Equations. An International Congress on occasion of Jesús Ildefonso Díaz's 60th birthday*.

TYPE OF ACTIVITY: Member of the Organizing Committee

PLACE AND DATE: Toledo, 14-17, June, 2011.

WEB PAGE: <http://www.mat.ucm.es/~homenajeJIDiaz60>

TITLE: *Workshop on Modelling and Simulation of Epidemics*

TYPE OF ACTIVITY: President of the Organizing Committee

PLACE AND DATE: Madrid, 06/05/2011.

WEB PAGE: http://www.mat.ucm.es/imi/worshop_Epidemics

TITLE: *Workshop on Modelling and simulation of High Pressure Processes*.

TYPE OF ACTIVITY: President of the Organizing Committee

PLACE AND DATE: Madrid, 22/11/2010.

WEB PAGE: <http://www.mat.ucm.es/imi/HighPressures>

TITLE: *IV Modelling Week del Máster en Ingeniería Matemática de la UCM*.

TYPE OF ACTIVITY: Main Organizer

PLACE AND DATE: Madrid, 14–22 June, 2010.

WEB PAGE: <http://www.mat.ucm.es/momat/2010mw/2010mw.htm>

TITLE: *III Modelling Week del Máster en Ingeniería Matemática de la UCM*.

TYPE OF ACTIVITY: Main Organizer

PLACE AND DATE: Madrid, 22–30 June, 2009.

WEB PAGE: <http://www.mat.ucm.es/momat/2009mw/2009mw-e.htm>

TITLE: *II Modelling Week del Máster en Ingeniería Matemática de la UCM.*

TYPE OF ACTIVITY: Main Organizer

PLACE AND DATE: Madrid, 16–24 June, 2008.

WEB PAGE: <http://www.mat.ucm.es/momat/2008mw/2008mw-e.htm>

TITLE: *XX CEDYA / X CMA*

TYPE OF ACTIVITY: Chairman of session EDPAN (Numerical Analysis of Partial Differential Equations)

FECHA: Seville, 24–28 September, 2007.

WEB PAGE: <http://congreso.us.es/cedya2007>

TITLE: *I Semana de Modelización del Máster en Ingeniería Matemática de la UCM.*

TYPE OF ACTIVITY: Main Organizer

PLACE AND DATE: Madrid, 18–25 June 2007.

WEB PAGE: <http://www.mat.ucm.es/momat/2007mw.htm>

TITLE: *Modelization and Simulation in Agro Food Technologies.*

TYPE OF ACTIVITY: President of the Organizing Committee

PLACE AND DATE: Madrid, 24/11/2006.

WEB PAGE: <http://www.mat.ucm.es/momat/msaf06.htm>

TITLE: *Third International Congress on Industrial and Applied Mathematics (ICIAM 95).*

TYPE OF ACTIVITY: Chairman of session *C88 Control of Distributed Parameter Systems*

PLACE AND DATE: Hamburg, 3–7 July, 1995.

12 Addresses in conferences and seminars

83 addresses in conferences and seminars.

13 Reviewer for Research Agencies and Member of Editorial Boards in Scientific Journals

Research Project Reviewer for the following agencies:

- [National Science Centre of Poland](#). 1 evaluation in 2018
- [European Quality Assurance \(EQA\)](#). Spain. Many projects since 2009.
- [DNV GL Business Assurance España, S.L.](#). Spain. Many projects since 2015
- [ACADEMIA](#) program of the [National Agency for Quality Assessment and Accreditation of Spain \(ANECA\)](#). 1 evaluation in 2015.
- [State Research Agency \(Agencia Estatal de Investigación \(AEI\), in Spanish\)](#); previously [National Evaluation and Foresight Agency \(Agencia Nacional de Evaluación y Prospectiva \(ANEP\), in Spanish\)](#). Spain. Many projects since 2007,
- [Andalusian Agency of Knowledge \(AAC\)](#). 1 evaluation in 2015.

- University System Quality Agency of the Castilla y León Region (ACSUCYL), Spain.
- Galician Plan of Research, Development and Tecnological Innovation (INCITE) of Xunta de Galicia, Spain.
- Access to Finis Terrae Supercomputer in the Centre of Supercomputing of Galicia (CESGA), Spain.
- Fondo para la Investigación Científica y Tecnológica (FONCYT) and Agencia Nacional de Promoción Científica y Tecnológica, Argentina. Since September, 2011.
- National Council of Science and Technology (CONACYT), Mexico. Since September, 2010.

Reviewer for the following Scientific Journals:

- SEMA Journal.
- Mathematical Problems in Engineering.

13.1 PhD Thesis

14 PhD Thesis Supervisions

- 8 AUTHOR: Alicja Bárbara Kubik
 TITLE: To be decided
 DATE: Work in progress
 PHD PROGRAM: [Mathematical Engineering, Statistics and Operations Research](#)
 UNIVERSITY: Universidad Complutense de Madrid.
 SUPERVISORS: Benjamin Ivorra and Angel Manuel Ramos
- 8 AUTHOR: Jorge Herrera de la Cruz
 TITLE: Resolución Numérica de Juegos Diferenciales Deterministas y Estocásticos en Equilibrios de Nash.
 DATE: 05/November/2020
 PHD PROGRAM: [Mathematical Engineering, Statistics and Operations Research](#)
 UNIVERSITY: Universidad Complutense de Madrid.
 SUPERVISORS: Benjamin Ivorra and Angel Manuel Ramos
- 7 AUTHOR: Eduardo Fernández Carrión
 TITLE: Mathematical models for introduction, spread and early detection of infectious diseases in veterinary epidemiology
 DATE: 11/July/2017
 PHD PROGRAM: [Programa de doctorado en Métodos Estadístico Matemáticos y Computacionales para el tratamiento de la Información](#)
 UNIVERSITY: Universidad Complutense de Madrid
 SUPERVISORS: Benjamin Ivorra, Beatriz Martínez-López and Angel Manuel Ramos

- 6 AUTHOR: María Crespo Moya
TITLE: Mathematical Modeling and Optimization of Bioreactors and Liquid Crystals
DATE: 30/November/2016
PHD PROGRAM: [Mathematical Research](#)
UNIVERSITY: Universidad Complutense de Madrid
SUPERVISORS: Benjamin Ivorra and Angel Manuel Ramos
- 5 AUTHOR: Tommaso Mingazzini
TITLE: Free Boundary Problems: qualitative behaviour and control results
DATE: 25/April/2014
PHD PROGRAM: [Mathematical Research](#)
UNIVERSITY: Universidad Complutense de Madrid
SUPERVISORS: Jesús Ildefonso Díaz and Angel Manuel Ramos
- 4 AUTHOR: Nadia Smith
TITLE: Mathematical Models in Food Engineering
DATE: 03/06/2013
PHD PROGRAM: [Mathematical Research](#)
UNIVERSITY: Universidad Complutense de Madrid
SUPERVISOR: Angel Manuel Ramos
- 3 AUTHOR: Francisca Dolores Matlalcuatzi Rugerio
TITLE: Modelo matemático de termorregulación en recién nacidos prematuros sometidos a tratamiento en incubadora
DATE: 04/February/2011
PHD PROGRAM: Facultad de Ciencias Físico Matemáticas
UNIVERSITY: Benemérita Universidad Autónoma de Puebla (México)
SUPERVISORS: Andrés Fraguela and Angel Manuel Ramos
- 2 AUTHOR: Juan-Antonio Infante del Río.
TITLE: Análisis Numérico de Modelos Matemáticos y problemas Inversos en tecnología de Alimentos.
DATE: 24/November/2009.
PHD PROGRAM: [Mathematical Research](#)
UNIVERSITY: Universidad Complutense de Madrid
SUPERVISORS: Angel Manuel Ramos and José María Rey
- 1 AUTHOR: Elisa Dorado Granger
TITLE: Estudio de las soluciones numéricas de largo plazo de los modelos de las ecuaciones primitivas de la circulación general del océano
DATE: 13/July/2009
PHD PROGRAM: [Mathematical Research](#)
UNIVERSITY: Universidad Complutense de Madrid
SUPERVISORS: Rodolfo Bermejo and Angel Manuel Ramos

15 Teaching Activities

15.1 Master or PhD programs

Mathematical foundations of the numerical simulation in Science and Engineering. Master in Numerical Simulation in Science and Engineering. University of Malaga. Academic years 2019-2020, 2021-21 and 2021-22.

Finite Element Method: Introduction to the mathematical analysis. PhD course (UCM). Academic years: 2013-14 (2–16 December 2013), 2013-14 (19 November – 3 December 2014).

Real Analysis and Calculus of Variations. Master in Advanced Mathematics (UCM). Academic years: 2013-14, 2014-15.

Numerical Analysis. Master in Mathematical Research, Universidad Complutense de Madrid (UCM). Academic years: 2005-2006, 2006-07, 2007-08, 2008-09, 2009-10, 2010-11 and 2011-12.

Numerical Methods, Modeling and Dynamical Systems. Master in Mathematical Engineering, UCM. Academic years: 2003-2004, 2004-2005, 2005-2006, 2006-07, 2007-08, 2008-09, 2009-10 and 2010-11.

Mathematical Models in Food Engineering. Master in Mathematical Engineering, UCM. Academic years: 2006-07 and 2007-08.

Modeling, Dynamical Systems and Control. Master in Mathematical Engineering, UCM. Academic years: 2002-2003, 2003-2004, 2004-2005 and 2005-2006.

Numerical Methods. PhD. Program of the Applied Mathematics Department, UCM. Academic year: 2003-2004.

Finite Element Methods: Theory and Implementation. PhD. Program of the Applied Mathematics Department, UCM. Academic year: 2002-2003.

Finite Difference Method: Theory and applications. PhD. Program of the Applied Mathematics Department, UCM. Academic years: 2001-2002 and 2002-2003.

Implementation of the Finite Element and Finite Difference Methods. PhD. Program of the Applied Mathematics Department, UCM. Academic year: 2000-2001.

Numerical solution of Boundary value and initial value problems. PhD. Program of the Applied Mathematics Department, UCM. Academic year: 2000-2001.

Control and Stabilization of Some Unstable Nonlinear Partial Differential Equations. 10 hours course as a part of the PhD. course *Computational Methods of Partial Differential Equations.* University of Houston (Texas-USA). Academic year: 1998-1999.

15.2 Undergraduate courses

Supervisor of many BS Thesis.

Teaching activities in many Mathematics and Computer Science subjects

16 Other merits and activities.

31/May/2021: Premio Investigación Complutense COVID-19 (COVID19 Complutense Research Prize).
Awarded by Complutense University of Madrid

Member of *IFIP TC 7 - Working Group 7.2*. The *Working Group 7.2* is part of *IFIP TC 7 - System Modeling and Optimization* (<https://ifip-tc7.impan.pl/>) and has historically been, and continues to be, of great importance to the development and dissemination of knowledge in the areas of control theory and partial differential equations (<https://ifip-tc7.impan.pl/wg.html>).

Coordinator of the Network of Spanish Mathematical Research Institutes (RedIUM) from 11/June/2018 to 01/July/2019.

Representative of the School of Mathematics (Universidad Complutense de Madrid) at the [European Consortium for Mathematics in Industry \(ECMI\)](#). Years 2009 and 2010.

Languages: English (fluent), French (fluent), Spanish (mother tongue).