

6-7 April, 2017
Guimarães,
Portugal



SYMCOMP 2017

SYMCOMP2017

International Conference on Numerical and Symbolic Computation:
Developments and Applications

CMAT, Universidade do Minho, GUIMARÃES, April, 06 – 07, 2017



PROGRAMME

	Thursday: 06/04/2017	Friday: 07/04/2017
09:15 – 09:30	OPENING CEREMONY	
09:30 – 10:15	PLENARY SESSION I <i>STRUCTURAL AND MATERIAL OPTIMIZATION – A TOPOLOGY OPTIMIZATION PERSPECTIVE</i> Prof. José Miranda Guedes – Professor – Instituto Superior Técnico, University of Lisbon, Portugal	PLENARY SESSION II <i>DUALSPHYSICS: A LAGRANGIAN NUMERICAL TOOL FOR COASTAL ENGINEERING PURPOSES</i> Prof. Moncho Gomez Gesteira - Professor—Environmental Physics Laboratory, University of Vigo, España
10:20 – 10:50	Session I Intelligent Computation in Data Mining	Session VI Computing and Image Processing in Clinical and Medical Applications
10:50 – 11:10	Coffee-Break	
11:10 – 12:30	Session II Numerical methods for tuned applied mathematical problems	Session VII Numerical Computation for Scientific and Industrial Applications
12:30 – 14:00	Lunch	
14:00 – 15:20	Session III Experimental and Computational Mechanics	Session VIII Numerical Computation for Scientific and Industrial Applications
15:20 – 16:40	Session IV Computing and Image Processing in Clinical and Medical Applications	Session IX Experimental and Computational Mechanics
16:40 – 17:00	Coffee-Break	
17:00 – 18:20	Session V Numerical and Symbolic Computation in Mathematics: research and education	Session X Systems Control: Models and Applications
		[18:30 H] Closure
20:00 – 23:00	Conference Dinner – Young Researcher Awards	



THURSDAY, APRIL, 06, 2017

LOCAL: CyberCentro de Guimarães – Auditório da Associação Fraternal

Opening Ceremony: 09:15 – 09:30

SP I	PLENARY SESSION I – CHAIR: Prof. Amélia Loja STRUCTURAL AND MATERIAL OPTIMIZATION – A TOPOLOGY OPTIMIZATION PERSPECTIVE Prof. José Miranda Guedes – LAETA – IDMEC, IST, University of Lisbon	09:30 10:15
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SESSION I : Intelligent Computation in Data Mining, 10:20 – 10:50		
CHAIR: Prof. Amélia Loja		
ID	COMMUNICATION TITLE	AUTHORS
A06	Neural networks based on radial basis function in high dimension domains	A. J. Tallón-Ballesteros, María Rodríguez-Romero and Luís Correia
A38	Exploring acyclic neural networks in classification problems. Which activation function could we choose?	A. J. Tallón-Ballesteros and María Rodríguez-Romero

SESSION II : Numerical methods for tuned applied mathematical problems, 11:10 – 12:30		
CHAIR: Prof. Paulo Vasconcelos		
ID	COMMUNICATION TITLE	AUTHORS
A02	Dealing with functional coefficients within tau method	Marcelo Trindade, Paulo Vasconcelos and José Matos
A09	PageRank computation with MAAOR and lumping methods	Isabel Pinto and Paulo Vasconcelos
A27	Solving integro-differential equations with spectral methods	João C. Matos, José Matos and Maria J. Rodrigues
A49	How Non-Integer Order Derivatives Can be Useful to Rheology	L. Ferrás, Neville J. Ford, M. Morgado, Magda Rebelo, G. H. McKinley and J. Nóbrega
A47	Conduct Risk: Distribution Models with Very Thin Tails	Peter Mitic



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SESSION III : Experimental and Computational Mechanics, 14:00 – 15:20		
CHAIR: <i>Prof. Miguel Neves and Prof. Raul Campilho</i>		
ID	COMMUNICATION TITLE	AUTHORS
A31	On an application of symbolic computation to derive a double scale asymptotic technique for linear-buckling of periodic microstructures	Miguel Matos Neves
A45	Symbolic Computation of ideal column critical loads for the limit values of elastic end restraints	Miguel Matos Neves and Hugo Policarpo
A26	Joining of sheets by sheet-bulk forming: a numerical and experimental study	Ivo Bragança, Amélia Loja, Carlos Silva, Luís Alves and Paulo Martins
A04	Strength Prediction of Adhesively-Bonded Joints with CZM Laws Estimated by Digital Image Correlation	Ulisses Carvalho and Raul Campilho
A05	Evaluation of the Extended Finite Element Method to Predict the Mechanical Behaviour of Adhesively-Bonded Joints	João Xará and Raul Campilho

SESSION IV : Computing and Image Processing in Clinical and Medical Applications, 15:20 – 16:40		
CHAIR: <i>Prof. Joaquim Infante Barbosa and Prof. José Alberto Rodrigues</i>		
ID	COMMUNICATION TITLE	AUTHORS
A32	Influence of Semiquantification in DaTScan(TM) Studies for Diagnosis of Parkinsonian Syndromes	M. Queiroga, M. Elias, D. Silva, J. Serrano, J.I. Rayo, E. Carolino, L. Vieira and E. Sousa
A33	Influence of Computed Tomography Attenuation Correction in Myocardial Perfusion Imaging, in Obese Patients: Classification by Sex and Body Mass Index	O. Stakhiv, I. Melo, M. Clarke, M. Aplin, N. Singh, K. Day, S. Dizdarevic, M. Jessop, P. Begley, E. Carolino, L. Vieira and E. Sousa
A50	Inquiring about pediatric hypertension	M. Filomena Teodoro, Carla Simão and Andreia Romana
A39	Numerical study of the blood flow in the renal arteries	Daniela Martins, Pedro Lobarinhas and Senhorinha Teixeira
A15	Comparison between 3d laser scanning and computed tomography on the modelling of head surface	Eva Sousa, Lina Vieira, Diogo Costa, Durval Costa, Rui Parafita and Amélia Loja

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SESSION V: Numerical and Symbolic Computation in Mathematics: research and education, 17:00 – 18:20		
CHAIR: <i>Prof. Ana Conceição and Prof. Paula Ventura</i>		
ID	COMMUNICATION TITLE	AUTHORS
A25	MUSCL vs MOOD Techniques to Solve SWE. The Tohoku-Oki, 2011 Tsunami.	Cláudia Reis, J. Figueiredo, Stéphane Clain, R. Omira, M. Baptista and J. Miranda
A01	A new one-parameter invariant function for algebras	José M. Escobar, Juan Núñez and Pedro Pérez-Fernández
A07	Implementing Mathematical Models for Singular Integrals	Paula Ventura Martins
A08	Symbolic approach to the general quadratic polynomial decomposition: orthogonal and symmetric cases	Ângela Macedo, Teresa A. Mesquita and Zélia Da Rocha
A23	Investigation of nanoelectronic and nano-optoelectronic circuits using MATLAB and SIMULINK	João F. M. Rei, James A. M. Foot, Gil C. Rodrigues and José M. L. Figueiredo

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SP II	PLENARY SESSION II – CHAIR: <i>Prof. Stéphane Clain</i> <i>DUALSPHYSICS: A LAGRANGIAN NUMERICAL TOOL FOR COASTAL ENGINEERING PURPOSES</i> <i>Prof. Moncho Gomez Gesteira</i> - Professor—Environmental Physics Laboratory, University of Vigo, España	09:30 10:15
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SESSION VI : Computing and Image Processing in Clinical and Medical Applications, 10:20 – 10:50		
CHAIR: <i>Prof. M. Filomena Teodoro</i>		
ID	COMMUNICATION TITLE	AUTHORS
A28	Interpretation of medical images: End of subjectivity?	Ana Almeida, Lina Vieira and Sérgio Figueiredo
A30	Finite element techniques for medical image processing	J. Barbosa, A. Carvalho, A. Loja, R. Portal and J. Rodrigues

SESSION VII : Numerical Computation for Scientific and Industrial Applications, 11:10 – 12:30		
CHAIR: <i>Prof. Stéphane Clain and Prof. Gaspar Machado</i>		
ID	COMMUNICATION TITLE	AUTHORS
A22	On the convergence of Newton's method for eigenvalues of symmetric tridiagonal matrices	Rui Ralha and Carlos Campos
A41	Numerical approach of some delayed-advanced differential equations	M. Filomena Teodoro
A48	Stabilization of a steady state viscoelastic computational code using the finite volume method	Célio Fernandes, S. Araujo, L. Ferrás and J. Nóbrega
A40	Models on Variational Methods for image processing	José Alberto Rodrigues



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SESSION VIII : Numerical Computation for Scientific and Industrial Applications, 14:00 – 15:20 CHAIR: <i>Prof. Jorge Figueiredo and Prof. José Alberto Rodrigues</i>		
ID	COMMUNICATION TITLE	AUTHORS
A18	A high-accurate SPH-MOOD method	X. Nogueira, L. Ramirez, S. Clain, R. Loubère, I.Colominas and L. Cueto-Felgueroso
A42	A finite volume method in the framework of proper generalized decomposition for the convection-diffusion-reaction equation	Ricardo Costa and João Nóbrega
A37	Very high order finite volume approximation for the 1D Biharmonic operator	Hélder C. Barbosa, Ricardo Costa and Gaspar Machado
A36	Very high order finite volume approximation for the 1D Steady-State Euler System	Gaspar J. Machado, Stéphane Clain and Rapahel Loubère
A29	A two-stage algorithm for solving quasi-brittle fracture problems	Pedro Areias and Joaquim Barbosa

SESSION IX : Experimental and Computational Mechanics, 15:20 – 16:40 CHAIR: <i>Prof. Joaquim Infante Barbosa and Prof. Ivo Bragança</i>		
ID	COMMUNICATION TITLE	AUTHORS
A12	A Novel Finite Element Formulation for the Buckling Analysis of Layered Composite Beam Structures	Hugo Santos
A17	Sounding Rockets Modelling and Simulation With Mathematica	Paulo Gil and Tiago Pinto
A11	Selection of modelling parameters for stochastic model updating	Tiago Silva
A16	Assessing parametric uncertainty on fibre reinforced composite laminates	Alda Carvalho, Tiago Silva and Amélia Loja
A24	Towards damage quantification caused by drilling in fibre composite laminates	M.S. Alves, I.C.J. Barbosa, I.F. Bragança and M.A.R. Loja

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SESSION X: Systems Control: Models and Applications, 17:00 – 18:20		
CHAIR: Prof. António J. Tallón-Ballesteros and Prof. Tiago Silva		
ID	COMMUNICATION TITLE	AUTHORS
A34	Data selection to improve samples quality and to overcome the current predictions	Antonio J. Tallón-Ballesteros and António E. Ruano
A10	User-friendly Matlab tool for simplified life cycle assessment method for domestic buildings	Carlos Campos, Fiona Bradley and Graeme Hannah
A43	Mathematical models of control systems	João Lima
A14	Automation inspection dimensional and parts of recognition and industrial materials	Almir Junior, Charles Melo and Moises Bastos

[18:30 H] Closure

Information about Submissions to Special Issues

**International Journal for Computational Methods in Engineering Science and Mechanics (IJMESM)
Mathematics in Computer Science (MCS) (in connection with SYMCOMP2017)**