

IWINAC2011

INTERNATIONAL WORK-CONFERENCE ON THE INTERPLAY BETWEEN NATURAL AND ARTIFICIAL COMPUTATION

FINAL PROGRAM

La Palma, Canary Islands, Spain.

May 30 – June 3, 2011

Organized by

Universidad Nacional de Educación a Distancia (UNED)

Universidad Politécnica de Cartagena

Contact URL <http://www.iwinac.org/iwinac2011/>

Contents

Acknowledgements	3
Scope	4
Conference Organization	5
Program Outline	8
Detailed Sessions Program	10
Other Technical Sessions	20
Social Program	20
Registration Fees	21
Technical Secretariat	21
General Information and Congress Venue	22

Acknowledgments

IWINAC2011 still owes too much to our friend Prof. Mira. As a pioneer in the field of Cybernetics, he enthusiastically promoted and organized these interdisciplinary meetings in the past. We still miss him and we want to dedicate IWINAC2011 in memoriam to Prof. Mira.

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- Universidad Nacional de Educación a Distancia.
- Universidad Politécnica de Cartagena.
- UNED Associated Center in La Palma.
- APLIQEM, s.l.
- Instituto de Astrofísica de Canarias.

Scope

This interdisciplinary meeting, with focus on the interplay between Nature and Computation, expands the scope of neural computation at the physical level to cope with symbols and knowledge level models of cognitive and social processes. The global purpose is to offer a forum for discussion and exchange of ideas between scientists and engineers from fields such as Electronic Engineering, Artificial Intelligence, Knowledge Engineering, Physics, Mathematics, Computation, Artificial Vision, Situated Robotics, Neurophysiology, Cognitive Science, Linguistics and Philosophy, trying to contribute to the answer of two basic questions:

I: From Computation to Sciences of Natural.

II: From Sciences of Natural to Computation.

What can Physics, Mathematics, Engineering, Computation, Artificial Intelligence (AI) and Knowledge Engineering (KE) contribute to the understanding of Nervous System, Cognitive Processes and Social Behavior? This is the scope of Computational Neuroscience and Cognition, which uses computation to model and improve our understanding of natural phenomena.

How can Engineering, Mathematics, Computation, AI and KE find inspiration in the behavior and internal functioning of physical, biological and social systems to conceive, develop and build-up new concepts, materials, mechanisms and algorithms of potential value in real world applications? This is the scope of the new Bionics, known as Bioinspired Engineering and Computation, as well as of Natural Computing.

Conference Organization

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JUAN ANTONIO GONZÁLEZ ARNAEZ

UNED Associated Center in La Palma (Spain)

Invited Speakers

Paul Cull *Oregon State University (USA)*

Rüdiger Dillmann *Karlsruhe Institute of Technology (KIT) (Germany)*

Jon Hall *Open University (UK)*

Changjiu Zhou *Singapore Polytechnic (Singapore)*

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[continued] **Scientific Committee (Referees)**

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Javier Toledo Moreo, Spain
Rafael Toledo Moreo, Spain
Jan Treur, Netherlands
Enric Trillas Ruiz, Spain
Ramiro Varela Arias, Spain
Marley Vellasco, Brazil
Lipo Wang, Singapore
Stefan Wermter, UK
Hujun Yin, UK
Changjiu Zhou, Singapore

PROGRAM OUTLINE

Monday May 30	
morning	<i>Free time</i>
17:00–20:00	<i>Registration at Technical Secretariat desk</i>

Tuesday May 31			
08:45–09:00	<i>Opening Ceremony</i>		
09:00–10:00	<i>Plenary Session I: Prof. Changjiu Zhou</i>		
10:00–11:00	<i>Plenary Session II: Prof. Rüdiger Dillmann</i>		
11:00–11:30	<i>Coffee break</i>		
11:30–13:30	Room A:	Room B:	Room C:
	Bioinspired Applications I	Biological ANN	Social Robots
14:00–	<i>Lunch</i>		
afternoon	<i>Free time</i>		
20:00–	<i>Welcome reception and cocktail at Congress Venue</i>		

Wednesday June 1				
09:00–10:00	<i>Plenary Session III: Prof. Paul Cull</i>			
10:00–11:00	<i>Plenary Session IV: Prof. Jon Hall</i>			
11:00–11:30	<i>Coffee break</i>			
11:30–12:30	Room A:	Room B:	Room C:	Room D:
	Bioinspired Applications II	Cognitive Modelling	Multi-robot Systems	Evolutionary Computation
12:30–13:30	Machine Learning Applications	Brain Interfaces		
14:00–	<i>Lunch</i>			
16:00–17:00	<i>Posters Attending Session</i>			
17:00–18:00	<i>Room B: FP7 FET-Open Info Session</i>			
	<i>Free time</i>			
20:30–	<i>Buses to Official Dinner at Parador Nacional de La Palma</i>			

PROGRAM OUTLINE

Thursday June 2				
09:00–10:00	Room A:	Room B:	Room C:	
	Web Intelligence	Brain Modelling I	Evolutionary Robots	
10:00–11:00	Multisensory Systems I			
11:00–11:30	<i>Coffee break</i>			
11:30–13:30	Room A:	Room B:	Room C:	Room D:
	Multisensory Systems II	Brain Modelling II	CYTED-CANS	Medical Applications
13:30–14:00	<i>Closing Ceremony: “Cosmic Challenges” by Prof. Rafael Rebolo</i>			
14:00–	<i>Lunch</i>			
16:00–17:00	<i>Room B: Reunión Red Tecnológica Nacional en Computación Natural y Artificial (for Spanish researchers)</i>			
17:00–18:00	<i>Room B: Reunión Red CYTED sobre Computación Natural y Artificial para la Salud (for Ibero-American researchers)</i>			
	<i>Free time</i>			

Friday June 3	
09:00–17:00	<i>Guided Visit to the Observatorio del Roque de los Muchachos (astrophysics observatory) for registered attendants and accompanying persons (lunch included)</i>
afternoon	<i>Free time</i>

Please, see detailed session contents in pages 10 through 20.

- Session: Plenary I May, 31. 09:00–10:00 Room: A
“Invited speaker Prof. Changjiu Zhou”
- Session: Plenary II May, 31. 10:00–11:00 Room: A
“Invited speaker Prof. Rüdiger Dillmann”
- Session: Bioinspired Applications I May, 31. 11:30–13:10 Room: A
“Computing Languages with Bio-Inspired Systems”
Organizer & Chair: Verónica Dahl
Co-Chair: M^a. Dolores Jiménez
 - “Classification Tree Generation Constrained with Variable Weights”
Pedro Barahona, Gemma Bel, Veronica Dahl, M. Dolores Jimenez-Lopez, Ludwig Krippahl
 - “Arithmetical Metabolic P Systems”
Rosario Lombardo, Vincenzo Manca
 - “Simulating ANEPs with Filtered Connections by Accepting Evolutionary P Systems”
Juan Castellanos, Victor Mitrana, Eugenio Santos, Jose Sempere
 - “Towards the automatic programming of NEPs”
Emilio del Rosal García, Marina de la Cruz, Alfonso Ortega de la Puente
 - “Bio-Inspired Grammatical Inference”
Leonor Becerra-Bonache
- Session: Biological ANN May, 31. 11:30–13:30 Room: B
“Biological Clues for Up-to-date Artificial Neural Networks”
Organizer & Chair: Diego Andina
Co-Chair: Javier Roperó Peláez
 - “Probabilistic versus incremental presynaptic learning in biologically plausible synapses”
Francisco Peláez, Diego Andina
 - “Dynamics of a three neurons network with excitatory-inhibitory interactions”
Carlos Aguirre, Juan I. Cano, Eloy Anguiano
 - “The reversal potential of inhibitory synapses”
Santi Chillemi, Michele Barbi, Angelo Di Garbo
 - “Doman’s inclined floor method for early motor organization with a four neurons robot”
Francisco Peláez, Lucas Santana
 - “On the Biological Plausibility of Artificial Metaplasticity”
Diego Andina, Francisco Peláez
 - “Dynamic model of the dLGN push-pull circuitry”
Rubén Ferreira García, Eduardo Sánchez Vila, Luis Martinez

- Session: **Social Robots** May, 31. 11:30–13:30 Room: C
 Chair: Emilia Barakova
 Co-Chair: Roberto Iglesias
 - “Design of Social Agents”
Roman Gorbunov, Emilia I. Barakova, Matthias Rauterberg
 - “Event-based System for Generation of Traffic Services in Road Congestions”
Cristina Sotomayor Martínez, Rafael Toledo-Moreo
 - “User-friendly Robot Environment for Creation of Social Scenarios”
Emilia I. Barakova, Tino Lourens
 - “Online Feature Weighting for Human Discrimination in a Person Following Robot”
Victor Alvarez-Santos, Xose Manuel Pardo, Roberto Iglesias, Adrián Canedo-Rodríguez, Carlos V. Regueiro
 - “Improving area center robot navigation using a novel range scan segmentation method”
Jose Manuel Cuadra Troncoso, Jose Ramon Alvarez-Sanchez, Felix de la Paz Lopez, Antonio Fernandez-Caballero
 - “Mobile Robot Localization through Identifying Spatial Relations from Detected Corners”
Sergio Almansa-Valverde, José Carlos Castillo, Antonio Fernández-Caballero, Jose Manuel Cuadra Troncoso, Javier Acevedo
- Session: Plenary III June, 1. 09:00–10:00 Room: A
“Invited speaker Prof. Paul Cull”
- Session: Plenary IV June, 1. 10:00–11:00 Room: A
“Invited speaker Prof. Jon Hall”
- Session: Bioinspired Applications II June, 1. 11:30–12:30 Room: A
“Bio-Inspired Systems in Speech and Speaker Recognition”
 Organizer & Chair: Vicente Garcerán Hernández
 Co-Chair: Pedro Gómez-Vilda
 - “Neuromorphic Detection of Vowel Representation Spaces”
Pedro Gomez Vilda, Jose Manuel Ferrandez
 - “Speaker recognition based on a bio-inspired auditory model: Influence of its components, sound pressure and noise level”
Vicente Garceran-Hernandez, Ernesto Martinez-Rams
 - “Inner-Hair Cells Parameterized-Hardware Implementation for Personalized Auditory Nerve Stimulation”
Miguel Sacristan, Jose Manuel Ferrandez, Vicente Garceran-Hernandez, Victoria Rodellar, Pedro Gomez-Vilda

- Session: Cognitive Modelling June, 1. 11:30–12:30 Room: B
“Basic Concepts in Cognitive and Brain Sciences”
 Organizer & Chair: Andreas Schierwagen

- “Complex neuro-cognitive systems”
Andreas Schierwagen
- “A Markov Model of Conditional Associative Learning in a Cognitive Behavioral Scenario”
Stefan Glüge
- “General Theory of Exobehaviours: A New Proposal to Unify Behaviors”
Sergio Miguel

- Session: Multi-robot Systems June, 1. 11:30–13:10 Room: C
“Multi-robot Systems: From Physical Systems to Computational Metaphors”
 Organizer & Chair: Dario Maravall
 Co-Chair: Javier de Lope

- “Bio-Inspired Decentralized Self-Coordination Algorithms for Multi-heterogeneous Specialized Tasks Distribution in Multi-Robot Systems”
Alma Quiñonez Carrillo, Javier de Lope, Dario Maravall
- “Concurrent Modular Q-Learning with Local Rewards on Linked Multi-Component Robotic Systems”
Borja Fernández Gauna, José Manuel López Guede, Manuel Graña
- “Coordination of Communication in Robot Teams by Reinforcement Learning”
Dario Maravall, Javier de Lope, Raul Dominguez
- “Selective method based on auctions for map inspection by robotic teams”
Manuel Martín Ortiz, Juan Pereda, Javier de Lope, Felix de la Paz Lopez
- “Study of a multi-robot collaborative task through reinforcement learning”
Juan Pereda, Manuel Martín Ortiz, Javier de Lope, Felix de la Paz Lopez

- Session: Evolutionary Computation June, 1. 11:30–12:50 Room: D
“Evolutionary Computation for Solving Complex Combinatorial Problems”
Organizer & Chair: Carlos Cotta Porras
Co-Chair: Antonio J. Fernández Leiva

 - “On the Use of Human-Guided Evolutionary Algorithms for Tackling 2D Packing Problems”
Javier Espinar, Carlos Cotta, Antonio J. Fernández Leiva
 - “Particle Swarm Optimisation for Open Shop Problems with Fuzzy Durations”
Juan José Palacios, Inés González-Rodríguez, Camino Vela, Jorge Puente
 - “Design of Emergent and Adaptive Virtual Players in a War RTS Game”
José A. García Gutiérrez, Carlos Cotta, Antonio J. Fernández Leiva
 - “Decision Tree-based Algorithms for Implementing Bot AI in UT2004”
Antonio J. Fernández Leiva, Jorge L. O’Valle Barragán

- Session: **Machine Learning Applications** June, 1. 12:30–13:30 Room: A
Chair: Guido Bologna
Co-Chair: Jose Santos

 - “Differential Evolution for Protein Structure Prediction Using the HP Model”
Jose Santos Reyes
 - “A Preliminary Study on the Prediction of Human Protein Functions”
Guido Bologna
 - “Evaluating Case Selection Algorithms for Analogical Reasoning Systems”
Eduardo Lupiani, Jose M. Juarez, Fernando Jimenez, Jose Palma

- Session: Brain Interfaces June, 1. 12:30–13:30 Room: B
“New Challenges in Brain-Machine Interfaces”
Organizer & Chair: José M. Azorín
Co-Chair: Eduardo Fernández

 - “Analysis of EEG Mapping Images to Differentiate Mental Tasks in Brain-Computer Interfaces”
Andrés Úbeda, Eduardo Iáñez, José M. Azorín, Eduardo Fernandez
 - “Design of a Hemispherical Antenna Array Receiver for Medical Applications”
Mohammad Safar
 - “Long term modulation and control of neuronal firing in excitable tissue using optogenetics”
Lawrence Humphreys, Jose Manuel Ferrandez, Eduardo Fernandez

• Session: **Posters attending**
Chair: José Manuel Ferrández
Co-Chair: Javier Toledo Moreo

June, 1. 16:00–17:00 Room: P

1. “An Expandable Hardware platform for implementation of CNN-based applications”
Jose Javier Martinez-Alvarez, Francisco J. Garrigos Guerrero, Javier Toledo, Jose Manuel Ferrandez
2. “Classification of welding defects in radiographic images using an adaptive-network-based fuzzy system”
Rafael Vilar, Juan Zapata, Ramon Ruiz Merino
3. “Reinforcement Learning Techniques for the Control of WasteWater Treatment Plants”
Félix Hernández del Olmo, Elena Gaudioso
4. “Genetic Programming for prediction of water flow and transport of solids in a basin”
Juan R. Rabuñal, Jerónimo Puertas, Daniel Rivero, Ignacio Fraga, Luis Cea, Marta Garrido
5. “Comparing Elastic Alignment Algorithms for the Off-Line Signature Verification Problem”
Jose F. Velez, Angel Sanchez Calle, Ana Belen Moreno Diaz, Laura Morillo-Velarde
6. “A Fuzzy Cognitive Maps Modeling, Learning and Simulation Framework for studying Complex Systems”
Maikel León
7. “Study of Strength Tests with Computer Vision Techniques”
Alvaro Rodriguez, Juan R. Rabuñal, Juan Luis Perez, Fernando Martinez-Abella
8. “Scaling Effects in Crossmodal Improvement of Visual Perception”
Isabel Gonzalo Fonrodona, Miguel A. Porras
9. “Pattern Recognition Using a Recurrent Neural Network Inspired on the Olfactory Bulb”
Lucas Figueira, Antonio Carlos Roque
10. “Experiments on Lattice Independent Component Analysis for Face Recognition”
Ion Marqués, Manuel Graña
11. “A Hyperheuristic Approach for Dynamic Enumeration Strategy Selection in Constraint Satisfaction”
Broderick Crawford, Ricardo Soto, Carlos Castro, Eric Monfroy
12. “Genetic Algorithm for Job-Shop Scheduling with Operators”
Raúl Mencía, María R. Sierra, Carlos Mencía, Ramiro Varela
13. “Bio-inspired System in Automatic Speaker Recognition”
Vicente Garceran-Hernandez, Lina Rosique-Lopez
14. “Independent Component Analysis: a low-complexity technique”
Ruben Martin-Clemente, Susana Hornillo-Mellado, Jose Luis Camargo-Olivares

15. “AdaBoost Face Detection on the GPU using Haar-like Features”
Mario Martínez-Zarzuela, Francisco Javier Díaz-Pernas, Míriam Antón Rodríguez, Freddy Perozo-Rondón, David González-Ortega
16. “Fuzzy ARTMAP based neural networks on the GPU for high-performance pattern recognition”
Mario Martínez-Zarzuela, Francisco Javier Díaz-Pernas, Antonio Tejero de Pablos, Freddy Perozo-Rondón, Míriam Antón Rodríguez, David González-Ortega
17. “Bio-Inspired Color Image Segmentation on the GPU (BioSPCIS)”
Mario Martínez-Zarzuela, Francisco Javier Díaz-Pernas, Míriam Antón Rodríguez, Freddy Perozo-Rondón, David González-Ortega
18. “Simulating a simple Rock-Scissors-Paper bacterial game with diffusing quorum sensing signals”
Alfonso Rodriguez-Paton
19. “Improving the accuracy of a two-stage algorithm in evolutionary product unit neural networks for classification by means of feature selection”
Antonio J. Tallón-Ballesteros, César Hervás-Martínez, José C. Riquelme, Roberto Ruiz
20. “Knowledge Living on the Web (KLW)”
Miguel Fernandez
21. “Local Context Discrimination in Signature Neural Networks”
Roberto Latorre, Francisco de Borja Rodríguez, Pablo Varona
22. “Spider Recognition by Biometric Web Analysis”
Jaime R. Ticay-Rivas, Marcos del Pozo-Baños, William G. Eberhard, Jesús B. Alonso, Carlos M. Travieso
23. “A Prediction Model to Diabetes using Artificial Metaplasticity”
Alexis Marcano Cedeño
24. “Band Correction in Random Amplified Polymorphism DNA Images Using Hybrid Genetic Algorithm with Multilevel Thresholding”
Carolina Gárate, Maria Punninghoff, Ricardo Contreras
25. “Discrimination of Epileptic Events using EEG Rhythm Decomposition”
Leonardo Duque Muñoz
26. “Methodology for attention deficit/hyperactivity disorder detection by means of Event-related potentials”
Paola Alexandra Castro Cabrera
27. “Methodology for epileptic episode detection using complexity-based features”
Jorge Gomez, Carolina Ospina, Edilson Delgado, German Castellanos
28. “Segmentation of the Carotid Artery in Ultrasound Images Using Neural Networks”
Rosa-María Menchón-Lara, M-Consuelo Bastida-Jumilla, Juan Morales Sanchez, Rafael Verdú-Monedero, Jorge Larrey-Ruiz, Jose Luis Sancho-Gomez
29. “A System for a Controlled Experiments Development based on Living Tissues Cultures”
Daniel de Santos Sierra, Jose Manuel Cuadra Troncoso, Felix de la Paz Lopez, Víctor Lorente, Jose Ramon Alvarez-Sanchez, Jose Manuel Ferrandez

- Session: Web Intelligence June, 2. 09:00–10:00 Room: A
“Innovative Research in Web Intelligence”
 Organizer & Chair: Rafael Martínez-Tomás
 Co-Chair: M^a. Jesús Taboada

- “Proposal for extending new Linked Data rules for the Semantic Web”
Luis Criado-Fernández, Rafael Martínez Tomás
- “AWARDprime: An Adaptive Web Based-Tool Prototype for Neurocognitive Individualized Assessment and Training”
Raquel Salmeron, Serafin Crespo, Maria Teresa Daza, Francisco Guil-Reyes
- “Automated Mapping of Observation Archetypes to SNOMED-CT Concepts”
María Meizoso, Jose Allones, Maria Taboada, Diego Martínez, Serafín Tellado

- Session: Brain Modelling I June, 2. 09:00–11:00 Room: B
“Neuroimaging and Neuroinformatics Tools for Modeling of the Brain - I”
 Organizer & Chair: Mariano Rincón Zamorano
 Co-Chair: Tomás García Saiz

- “Semiautomatic Segmentation of the Medial Temporal Lobe Anatomical Structures”
Mariano Rincon Zamorano, Estela Díaz-López, Fidel Alfaro, Amparo Díez Peña, Tomás Garcia-Saiz, Margarita Bachiller Mayoral, Ana Insausti, Ricardo Insausti
- “Analysis of Spect Brain Images Using Wilcoxon and Relative Entropy Criteria and Quadratic Multivariate Classifiers for the Diagnosis of Alzheimer’s Disease”
Jesus Martinez, Juan M Gorriz, Diego Salas-Gonzalez, Javier Ramirez
- “MRI Brain Image Segmentation with supervised SOM and probability-based clustering method”
Andres Ortiz García, Juan M Gorriz, Javier Ramirez, Diego Salas-Gonzalez
- “Effective Diagnosis of Alzheimer’s Disease by means of Distance Metric Learning and Random Forest”
Rosa María Chaves Rodríguez, Javier Ramirez, Juan M Gorriz, Ignacio Alvarez Illan, Fermín Segovia Roman, Alberto Olivares Vicente
- “Distance Metric Learning as feature reduction technique for the Alzheimer’s Disease Diagnosis”
Rosa María Chaves Rodríguez, Javier Ramirez, Juan M Gorriz, Diego Salas-Gonzalez, Miriam Maria Lopez Perez
- “Brain Status Data Analysis by Sliding EMD”
Angela Zeiler, Rupert Faltermeier, Alexander Brawanski, Ana Maria Tomé, Carlos G Puntonet, Juan M Gorriz, Elmar Lang

- Session: Evolutionary Robots June, 2. 09:00–11:00 Room: C
“Applied Evolutionary Robotics”
 Organizer & Chair: Francisco Bellas
 Co-Chair: Richard Duro

- “Task-driven species in evolutionary robotic teams” *Pedro Trueba, Abraham Prieto, Pilar Caamano, Francisco Bellas, Richard Duro*
- “Self-organized multi-agent system for robot deployment in unknown environments” *Adrián Canedo-Rodríguez, Roberto Iglesias, Carlos V. Regueiro, Víctor Álvarez-Santos, Xose Manuel Pardo*
- “An Incremental Model of Lexicon Consensus in a Population of Agents by means of Semantic-GER”
Jack Mario Mingo, Ricardo Aler
- “Towards an Evolutionary Design of Modular Robots for Industry”
Andres Faina, Francisco Bellas, Daniel Souto, Richard Duro
- “Grammar-Guided Evolutionary Construction of Bayesian Networks”
José M. Font, Daniel Manrique, Eduardo Pascua
- “A Novel Linear Cellular Automata-based Data Clustering Algorithm”
Javier de Lope, Dario Maravall

- Session: Multisensory Systems I June, 2. 10:00–11:00 Room: A
“Intelligent Monitoring and High-level Activity Interpretation using Multisensory Systems - I”
 Organizer & Chair: Antonio Fernández-Caballero
 Co-Chair: Rafael Martínez-Tomás

- “A Multisensory Monitoring and Interpretation Framework based on the Model-View-Controller Paradigm”
José C. Castillo, Angel Rivas-Casado, Antonio Fernández-Caballero, María T. López, Rafael Martínez-Tomás
- “Agent-Based Development of Multisensory Monitoring Systems”
José M. Gascueña, Antonio Fernández-Caballero, Elena Navarro, Juan Serrano-Cuerda, Francisco A. Cano
- “Clustering of Trajectories in Video Surveillance Using Growing Neural Gas”
Javier Acevedo

- Session: Multisensory Systems II June, 2. 11:30–13:30 Room: A
“Intelligent Monitoring and High-level Activity Interpretation using Multisensory Systems - II”
Organizer & Chair: Antonio Fernández-Caballero
Co-Chair: Rafael Martínez-Tomás

 - “Human action recognition based on tracking features”
Javier Hernández, Antonio Sanz, Juan J Pantrigo, Angel Sanchez Calle
 - “Modeling and Discovering Occupancy Patterns in Sensor Networks using Latent Dirichlet Allocation”
Federico Castanedo, Hamid Aghajan, Richard Kleihorst
 - “Multicamera Action Recognition with Canonical Correlation Analysis and Discriminative Sequence Classification” *Rodrigo Cilla, Miguel Angel Patricio Guisado, Antonio Berlanga, Jose Manuel Molina Lopez*
 - “Low-Power Bed / Seat Occupancy Sensor based on EMFi”
Francisco Fernandez-Luque, Juan Zapata, Ramon Ruiz Merino
 - “Protocol Integration for Intelligent Monitoring Applications in Wireless Sensor Networks” *Antonio M. Ortiz, Fernando Royo, Teresa Olivares, Luis Orozco-Barbosa, José Carlos Castillo, Antonio Fernández-Caballero*
 - “Event Detection and Fusion Model for semantic interpretation of monitored scenarios within ASIMS architecture”
Angel Rivas-Casado, Rafael Martinez Tomas

- Session: Brain Modelling II June, 2. 11:30–13:30 Room: B
“Neuroimaging and Neuroinformatic Tools for Modeling of the Brain - II”
Organizer & Chair: Juan Manuel Górriz Sáez
Co-Chair: Diego Salas González

 - “A Quantitative Study on Acupuncture Effects for Fighting Migraine Using SPECT Images” *Miriam Maria Lopez Perez, Javier Ramirez, Juan M Gorriz, Rosa María Chaves Rodríguez, Manuel Gómez-Río*
 - “High Resolution Segmentation of CSF on Phase Contrast MRI”
Elsa Fernandez, Manuel Grana, Jorge Villanua
 - “Exploration of LICA detections in resting state fMRI”
Darya Chyzyk, Manuel Grana, Ann Shinn
 - “FreeSurfer automatic brain segmentation adaptation to medial temporal lobe structures: volumetric assessment and diagnosis of mild cognitive impairment” *Ricardo Insausti, Mariano Rincon Zamorano, Estela Díaz-López, Emilio Artacho-Pérula, Fernando Mansilla, J. Florensa, César González, J. Álvarez-Linera, Sara García, Herminia Peraita*
 - “Alzheimer Disease Classification on Diffusion Weighted Imaging features”
Maite Termenon, Ariadna Besga, Jon Echeveste, Ana Gonzalez-Pinto, Manuel Grana
 - “Future Applications with Diffusion Tensor Imaging”
Tomás Garcia-Saiz, Mariano Rincon Zamorano, Arvid Lundervold

- Session: CYTED-CANS June, 2. 11:30–13:30 Room: C
“CYTED-CANS: Natural and Artificial Computation for Health Applications”
 Organizer & Chair: José Manuel Ferrández
 Co-Chair: Félix de la Paz
 - “Monitoring Neurological Disease in Phonation”
Pedro Gomez Vilda, Jose Manuel Ferrandez
 - “Group formation for minimizing bullying probability. A proposal based on genetic algorithms” *Pedro Salcedo Lagos, Ricardo Contreras, Maria Punninghoff*
 - “A Speaker Recognition System based on an Auditory Model and Neural Nets: performance at different levels of Sound Pressure and of Gaussian White Noise” *Vicente Garceran-Hernandez, Ernesto Martinez-Rams*
 - “Automatic Detection of Hypernasality in Children”
Santiago Murillo , Juan Orozco, Jesús Francisco Vargas Bonilla, Julian David Arias-Londoño, German Castellanos
 - “Characterization of Focal Seizures in Scalp Electroencephalograms Based on Energy of Signal and Time” *Alexander Cerquera, Laura V. Guío, Elías Buitrago, Rafael M. Gutiérrez, Carlos Medina*
 - “An optimized framework to model vertebrate retinas”
Andrés Olmedo Payá, Antonio Martínez Álvarez, Sergio Cuenca Asensi, Jose Manuel Ferrandez, Eduardo Fernandez

- Session: Medical Applications June, 2. 11:30–13:10 Room: D
“Artificial Intelligence Applied to Medical Aid”
 Organizer & Chair: Daniel Ruiz Fernández
 Co-Chair: Antonio Soriano
 - “Neural networks versus genetic algorithms as medical classifiers” *Oscar Marin, Irene Pérez, Daniel Ruiz, Antonio Soriano, Joaquín David García*
 - “Complexity changes in human wrist temperature circadian rhythms through ageing” *Roque Marin, M. Campos, A. Gomariz, A. Lopez, M. A. Rol, J. A. Madrid*
 - “Radial basis function neural network for classification of quantitative EEG in patients with advanced chronic renal failure”
César González, Juan Antonio Barrios, José Maria Gaztelu
 - “Bayesian Network-based Model for the Diagnosis of Deterioration of Semantic Content Compatible with Alzheimer’s Disease”
José María Guerrero Triviño, Rafael Martínez Tomas
 - “Localization and Segmentation of the ONH in Eye Fundus Images using Pyramid Representation and GAs”
José María Molina Casado, Enrique J. Carmona Suarez

Other Technical Sessions

June 1, Wednesday

17:00–18:00 h. *Room B*: FP7 FET-Open Info Session.

June 2, Thursday

13:30–14:00 h. *Room A*: Closing ceremony will include a conference about “Cosmic Challenges” by Prof. Rafael Rebolo.

16:00–17:00 h. *Room B*: Reunión de la Red Tecnológica Nacional en Computación Natural y Artificial (for Spanish researchers).

17:00–18:00 h. *Room B*: Reunión Red CYTED sobre Computación Natural y Artificial para la Salud (for Ibero-American researchers).

Social Program

Coffee breaks only days May 31, June 1 and 2, from 11:00 to 11:30 h.

Lunches only days May 31, June 1 and 2, for registered participants and accompanying persons (with lunch ticket). Served at 14:00 h. *in the Congress Venue*.

May 31, Tuesday

20:00 h. – Welcome reception and cocktail at the Congress Venue.

June 1, Wednesday

21:00 h. – Official congress dinner (casual wear) at *Parador Nacional de La Palma* (buses from Congress Venue will depart at 20:30).

June 3, Friday

09:00–17:00 h. Guided Visit to the *Observatorio del Roque de los Muchachos* (astrophysics observatory) for registered attendants and accompanying persons (*lunch included*). Buses will depart from Congress Venue.

Internet connection

During the conference venue there will be wireless access (802.11b/802.11g compatible) to Internet available inside and near the conference rooms, and also some wired connections in a specific place.

Registration Fees

The registration form must be fulfilled with the Conference Technical Secretariat (ESOC, please, see the address bellow) at your earliest convenience. The form must be accompanied by the payment in Euros. No registration will be considered until the payment is received.

Registrations fees	Before April 30 th	After April 30 th
Standard (*)	€500	€600
Session Organizer (*)	€400	€500
Accompanying Person A (**)	€175	€175
Accompanying Person B (**)	€100	€100
2nd paper and more	€300	€350

- (*) Includes coffee breaks, meals, social events (welcome reception cocktail, official dinner and visit to observatory), and the “Lecture Notes in Computer Science” books (Springer-Verlag) of the work-conference proceedings.
- (**) Includes social events (welcome reception cocktail, official dinner and visit to observatory). Type A registration also includes meals.

Technical Secretariat of the Conference

Please, contact the Technical Secretariat for any information or details about registration, accommodation, travels, etc.

ESOC, s.l.

Calle Río Duero, 30, Local 10

E-03690 San vicente del Raspeig

Alicante (Spain)

Phone: (+34) 965-22-99-40

Fax: (+34) 965-92-23-46

E-mail: iwinac2011@grupoesoc.es

Since 17:00 h. May 30, and during the Conference, the Secretariat will maintain a desk at the congress venue. Previous registration will be necessary to attend the Conference (<http://www.congresosesoc.com/IWINAC2011/>).



Congress URL <http://www.iwinac.org/iwinac2011/>

General Information

Congress venue

HOTEL TABURIENTE PLAYA

C/. Playa de los Cancajos, s/n.
E-38712, Breña Baja, La Palma
Canary Islands, Spain

* Special reduced prices for accommodation in the hotel and near it through our Technical Secretariat (see contact in the previous page).

Travel Information

La Palma airport (international code “SPC”) with flights mainly from Spain and Europe, is located at 4 km far away from Congress venue. Taxi rates from airport to the Hotel are around 10 euros. There are also public buses every half an hour passing near the Hotel.

Also, it is possible to go to Santa Cruz de La Palma (at 6 km from Congress venue) by ferry boat from Tenerife (another island near La Palma) that have two international airports (codes “TFN” and “TFS”) with even more flights.

Please, contact our Technical Secretariat (ESOC) for a more detailed information on travel and accommodation.

Language

English will be the official language of IWINAC2011. Simultaneous translation will *not* be provided.

Climate

La Palma island is located at about 28° 40' N and 17° 48' W at the north-west part of the Canary Islands. The Congress Venue is near the coast to the Atlantic Sea in the east part of the island. The island has warm moderate climate all the year. The temperature in May-June can vary from 24-25°C by day to 18-19°C by night. The water temperature is around 20°C. La Palma is a green island with abundant vegetation and forests due to the water captured from clouds formed by north-east trade winds.

Banks

Business is transacted from 09:00 to 14:00 h. Monday to Friday. Money can be changed outside normal banking hours at Hotels, Travel Agencies and other business, displaying a “*Cambio/Change*” sign. Take your Passport or Identity Card with you when changing travelers checks.

Currency

The monetary unit in Spain is the *EURO* (symbol €). Coins: 1, 2, 5, 10, 20 and 50 cents; 1 and 2 Euros. Banknotes: 5, 10, 20, 50, 100, 200 and 500 Euros. All international Credit Cards (Visa, American Express, Master Card, Euro-card, Diners Club, etc.) are widely accepted by Hotels, Restaurants and Shops, and also in many ATMs or cashpoints.

Tipping

Since the service charge is normally included in restaurant, hotel and taxi bills, tipping is always optional.

Electricity

Electric supply is AC 220 V. / 50 Hz. Standard continental European two round pin plugs for appliances.

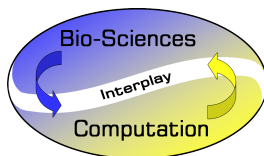
Assistance and insurance

Participants are advised to make their own arrangements regarding travel insurance and medical assistance during the Conference. Neither the Organization nor the Conference Secretariat is able to accept any responsibility whatsoever for damage or injury to persons or their belongings during the Conference.

Additional information

You can find more information (maps, addresses, tourism, hiking, trekking, etc.) about La Palma Island through the web pages:

- <http://www.lapalmaturismo.com/> (select language in upper-right corner).
- <http://www.lapalma.es/language/en>
- <http://www.tourlapalma.com/php/public.php?idioma=EN>
- <http://www.ecoturismocanarias.com/lapalma/uk/>



IWINAC2011



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Instituto de Astrofísica de Canarias

Congress Venue:

Hotel Taburiente Playa, Playa de los Cancajos, La Palma (Spain)

May 30 – June 3, 2011

<http://www.iwinac.org/iwinac2011/>
