

**Congress venue**  
Hotel Taburiente Playa  
Los Cancajos, La Palma Island (Spain)

**Technical Secretariat**

ESOC, S.L.  
C/ Río Duero 30, Local 10  
03690 San Vicente del Raspeig  
Alicante (Spain)  
Tel: +34-965-22-99-40  
Fax: +34-965-92-23-46  
Email: [congresos@grupoesoc.es](mailto:congresos@grupoesoc.es)  
<http://www.grupoesoc.es/>



Type	Before 30 April	After April 30
Standard	€ 500	€ 600
Session Organizer	€ 400	€ 500
Accompanying person A	€ 175	€ 175
Accompanying person (*)	€ 100	€ 100

**Registration fees**

The registration fee includes attending to the sessions, coffee breaks, lunches, social events, official dinner and the Proceedings of the Work-Conference.

Accompanying person A registration fee only includes lunches, social events and official dinner.

Accompanying person B registration fee only includes social events and official dinner.

Registration fees of at least one author for each accepted paper should be paid in full before submission to press (April 21, 2011).

**IWINAC 2011 important deadlines**

Full papers submission due: **February 15, 2011**

Acceptance notification and start of registration: April 1, 2011

End of reduction fee for early registration: April 30, 2011

Congress date: May 30 - June 3, 2011

IWINAC 2011 official web:  
<http://www.iwinac.org>

# IWINAC 2011

Supported by:



Universidad Nacional de Educación a Distancia  
(UNED)



Universidad Politécnica de Cartagena



Ministerio de Ciencia en Innovación

**apliquem uO**

APLIQUEM MICROONES 21, S.L.

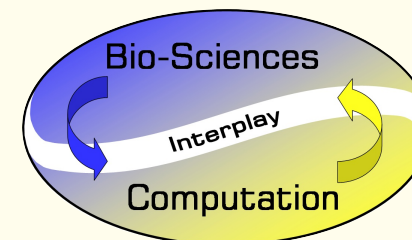
Apliquem. S.L.



Patronato de Turismo de La Palma

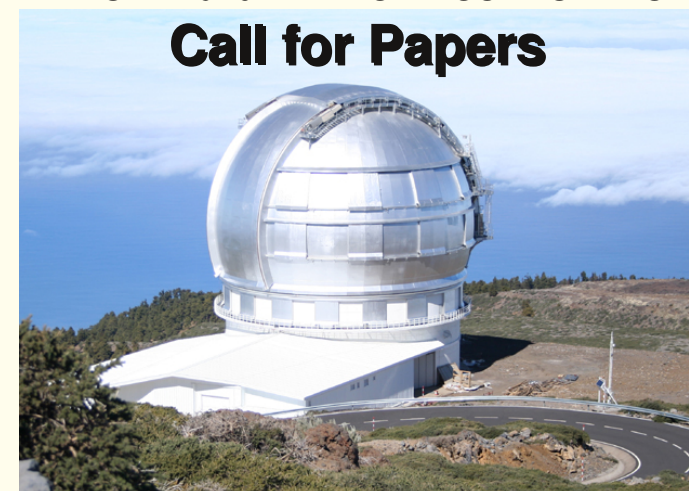
IWINAC 2011 official web:  
<http://www.iwinac.org>

# IWINAC 2011



**4th INTERNATIONAL WORK-CONFERENCE  
on the INTERPLAY between  
NATURAL and ARTIFICIAL COMPUTATION**

## Call for Papers



**Hotel Taburiente Playa, La Palma.  
Canary Islands, (Spain)  
May 30 - June 3, 2011**

Organized by:

Universidad Nacional de Educación a Distancia  
and Universidad Politécnica de Cartagena

in cooperation with

UNED-La Palma Associated Center

Sponsored by:

Red Nacional en Computación Artificial y Natural RTNAC  
and CYTED

IWINAC 2011 official web:  
<http://www.iwinac.org>

### Final Call for Papers

The fourth "International Work-conference on the Interplay between Natural and Artificial Computation" (IWINAC-2011) will take place in La Palma, Canary islands.

### Location

Covering a surface area of 706 square kilometres and with 86,000 citizens living in 14 municipalities, La Palma is home to the Caldera de Taburiente National Park and 19 nature reserves (35% of the surface area) where the El Roque de los Muchachos, at an altitude of 2426 metres above the sea level, is really spectacular due to the small size of the island. Thanks to the excellent natural conditions of this area, nowadays it is considered as one of the best places in the world for the astronomical observation.

### 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:

*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?*

*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?*

### Topics

#### Computational Neuroscience & Biomedical Engineering

- Neural Modeling
- Perceptual Motor & Associative Mechanisms
- Multisensorial Coding
- Neurosimulators
- Cognitive Processes Modeling
- Perception, Memory, Decision Making and Learning
- Brain Interfacing
- Brain Imaging
- Consciousness

#### Bioinspired Computation & Engineering

- Evolvable Hardware
- Bionic Prostheses & Sensory Supplencies
- Evolutionary Computation
- Self-organizing & Collective Emerging Computation
- Symbolic-Connectionist Hybrid Approaches
- Bioinspired AI & KE
- Artificial Vision
- Robotics
- Health Technologies
- Other Bioinspired Applications

Please , find extended descriptions of the topics in the webpage:  
<http://www.iwinac.org>

### Paper Submission

The Program Committee request original papers on the mentioned topics. All accepted papers will be published in the proceedings by Springer-Verlag in Lecture Notes on Computer Science series. Please check terms and conditions for publication at <http://www.iwinac.org>

### Special Issues of selected Journals (expected)

Best papers will be selected by the scientific committee to include an extended version in special issues of relevant Journals of the field:

- Natural Computing
- Computational Intelligence
- Neurocomputing
- Journal of Integrative Neuroscience
- Robotics & Autonomous Systems

### Call for pre-organized sessions

The Program Committee is requesting proposals for pre-organized sessions in one of the topics or related to the global scope presented above. Also, new sessions in the interdisciplinary spirit of the interplay between natural and artificial computation are welcome. Prospective organizers should contact organization staff at [info@iwinac.org](mailto:info@iwinac.org) as soon as possible. Information about current pre-organized sessions and further details for prospective organizers can be found at web: <http://www.iwinac.org>. The organizers of effective pre-organized sessions will benefit of a discount on registration fees.

### Invited Speakers

- Dr. Changjiu Zhou, Singapore Polytechnic (Singapore)
- Dr. Paul Cull, Oregon State University (USA)
- Dr. Robert Dillmann, Universität Karlsruhe (Germany)

### General Chairman

José Manuel Ferrández Vicente UPCT (Spain)

### Organizing Committee

José Ramón Álvarez Sánchez, UNED(Spain)  
Félix de la Paz López, UNED (Spain)  
Javier Toledo Moreo, UPCT (Spain)  
Organization e-mail: [info@iwinac.org](mailto:info@iwinac.org)

### Local Organizing Committee

Francisco Javier Neris Paz, UNED (Spain)  
Juan Antonio González Arnaez, UNED (Spain)

IWINAC Conference is being evaluated to be included in CORE Index of 2011

### The 2011 Data Mining and Astrostatistics Workshop & Summer School

A proposal for funding by the GAIA Research for European Astronomy Training (GREAT).

The combined workshop + summer school will take place in June 2011 in the island of La Palma (Canary Islands, Spain) jointly with the International Work-conference on the Interplay between Natural and Artificial Computation (IWINAC 2011).

### Scope

- New statistical techniques for the processing of astronomical data.
- Challenges in the data mining of astronomical databases.

Please check <http://www.iwinac.org/Astrostatistics> for more info about extended topics, scientific committee and special fees for this event.

### Scientific Committee

Abraham, Ajith (Norway)  
Adamatzky, Andy (U.K.)  
Affenzeller, Michael (Austria)  
Aleksander, Igor (U.K.)  
Alonso Betanzos, Amparo (Spain)  
Amari, Shun-ichi (Japan)  
Andonie, Razvan (U.S.A.)  
Anguita, Davide (Italy)  
Bachiller Mayoral, Margarita (Spain)  
Bahamonde, Antonio (Spain)  
Ballard, Dana (U.S.A.)  
Barakova, Emilia I. (Netherlands)  
Barro Ameneiro, Senén (Spain)  
Barreiro, Alvaro (Spain)  
Brémond, François (France)  
Cannata, Giorgio (Italy)  
Carmona Suárez, Enrique J. (Spain)  
Carreña Amigo, Purificación (Spain)  
Cerdá Boluda, Joaquín (Spain)  
Cervera Mateu, Enric (Spain)  
Chella, Antonio (Italy)  
Chinellato, Eris (Spain)  
Corchado, Emilio S. (Spain)  
Colla, Carlos (Spain)  
Csuhaj-Varjú, Erzsébet (Hungary)  
Cuadra Troncoso, José Manuel (Spain)  
Delgado García, Ana E. (Spain)  
de Lope, Javier (Spain)  
del Pobal, Angel P. (Spain)  
De Schutter, Erik (Belgium)  
Doménech Asensi, Ginés (Spain)  
Dorrnsoro, Jose (Spain)  
Dreyfus, Gérard (France)  
Duro, Richard (Spain)  
Eckhorn, Reinhard (Germany)  
Fattori, Patrizia (Italy)  
Febles Rodríguez, Juan Pedro (Cuba)  
Félix Lamas, Paulo (Spain)  
Fernández, Eduardo (Spain)  
Fernández-Caballero, Antonio (Spain)  
Fernández DELgado, Manuel (Spain)  
Fernández-Graciani, Miguel A. (Spain)  
Fukushima, Kunihiko (Japan)  
Gamallo Solórzano, Cristina (Spain)  
Gámez, Jose A. (Spain)  
Garceran Hernández, Vicente (Spain)  
García Herrero, Jesús (Spain)  
García-Laencina, Pedro J. (Spain)  
García Madruga, Juan Antonio (Spain)  
Garrigos Guerrero, Francisco J. (Spain)  
Gedeon, Tamás (Tom) D. (Australia)  
Gerritsen, Charlotte (Netherlands)  
George, Marian (U.K.)  
Gómez Vilda, Pedro (Spain)  
G. Puntonet, Carlos (Spain)  
Graña Romay, Manuel (Spain)  
Guil-Reyes, Francisco (Spain)  
Hallam, John (Denmark)  
Herreras, Oscar (Spain)  
Herrero, Juan Carlos (Spain)  
Hervás Martínez, César (Spain)  
Heskes, Tom (Netherlands)  
Iglesias Rodríguez, Roberto (Spain)  
Jimenez Barrionuevo, F. (Spain)  
Juarez, Jose M. (Spain)  
Kok, Joost N. (Netherlands)  
Koroutchev, Kostadin (Spain)  
Korutcheva, Elka (Spain)  
Kuniyoshi, Yasuo (Japan)  
Lánsky, Petr (Czech Rep.)  
Lappe, Marcus (Germany)  
Longobardi, Maria (Italy)  
López Bonal, Maria Teresa (Spain)  
López de Mántaras, Ramon (Spain)  
Lourens, Tino (Netherlands)  
Lungarella, Max (Japan)  
Luque Gallego, Manuel (Spain)  
Maciá Pérez, Francisco (Spain)  
Maistros, George (U.K.)  
Manca, Vincenzo (Italy)  
Mange, Daniel (Switzerland)  
Manzotti, Riccardo (Italy)  
Maravall, Dario (Spain)  
Marín, Roque (Spain)  
Martínez Álvarez, Jose Javier (Spain)  
Medina Tomás, Rafael (Spain)  
Martina Moreno, Jesus (Spain)  
Millan, Jose del R. (Switzerland)  
Mira, José (Spain)  
Mitrana, Victor (Spain)  
Molina López, José Manuel (Spain)  
Montserrat Puchades, Javier (Spain)  
Morales Sánchez, Juan (Spain)  
Morán, Federico (Spain)  
Moreno Díaz, Ana Belén (Spain)  
Moreno Díaz, Arminda (Spain)  
Moreno Díaz, Roberto (Spain)  
Moreno Díaz, Roberto Jr. (Spain)  
Navarrete Sánchez, Isabel (Spain)  
Nedjah, Nadia (Brazil)  
Nishida, Taishin Y. (Japan)  
Normann, Richard A. (U.S.A.)  
Ojeda-Aciego, Manuel (Spain)  
Paletta, Lucas (Austria)  
Palma Méndez, José T. (Spain)  
Pantrigo, Juan José (Spain)  
Pascual-Leone, Alvaro (U.S.A.)  
Patricio Guisado, Miguel Angel (Spain)  
Paun, Gheorghe (Spain)  
Pazos Sierra, Juan (Spain)  
Pérez Jiménez, Mario J.(Spain)  
Pérez-Lorenzo, José Manuel (Spain)  
Pichler, Franz (Austria)  
Puerta, Jose M. (Spain)  
Quesada Arencibia, Alexis (Spain)  
Qunitia Vidal, Pablo (Spain)  
Ricciardi, Luigi M. (Italy)  
Rincón Zamorano, Mariano (Spain)  
Rodellar, Victoria (Spain)  
Rodríguez González, Miguel A. (Spain)  
Rodríguez Presedo, Jesus M. (Spain)  
Rodríguez Rodríguez, Jose C. (Spain)  
Rodríguez Vela, Camino (Spain)  
Ruiz Merino, Ramón (Spain)  
Sánchez-Andrés, Juan Vicente (Spain)  
Sánchez Calle, Angel (Spain)  
Sánchez Vila, Eduardo (Spain)  
Sancho-Gómez, José Luis (Spain)  
Sanniti di Baja, Gabriella (Italy)  
Santos Reyes, José (Spain)  
Sanz, Ricardo (Spain)  
Sato, Shunsuke (Japan)  
Schierwagen, Andreas (Germany)  
Sciavicco, Guido (Spain)  
Serban, Radu (Netherlands)  
Shevelev, Igor A. (Russia)  
Sigüenza, Juan A. (Spain)  
Solé i Casals, Jordi (Spain)  
Soriano Payá, Antonio (Spain)  
Taboada Iglesias, Maria Jesús (Spain)  
Termini, Settimo (Italy)  
Toledo Moreo, Javier (Spain)  
Treur, Jan (Netherlands)  
Trillas Ruiz, Enric (Spain)  
Varela Riaz, Ramiro (Spain)  
Velasco, Marley (Brazil)  
Wang, Lipo (Singapore)  
Wermter, Stefan (U.K.)  
Yang, Xin-She (U.K.)  
Yin, Hujun (U.K.)  
Zhou, Changjiu (Singapore)