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SUBMISSION DEADLINE EXTENDED: July 23 !!!
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**2nd INTERNATIONAL CONFERENCE ON THE THEORY AND PRACTICE OF NATURAL COMPUTING**

**TPNC 2013**

**Cáceres, Spain**

**December 3-5, 2013**

Organized by:

Computer Architecture and Logic Design Group (ARCO)
University of Extremadura

Research Group on Mathematical Linguistics (GRLMC)
Rovira i Virgili University

http://grammars.grlmc.com/tpnc2013/
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**AIMS:**

TPNC is a conference series intending to cover the wide spectrum of computational principles, models and techniques inspired by information processing in nature. TPNC 2013 will reserve significant room for young scholars at the beginning of their career. It aims at attracting contributions to nature-inspired models of computation, synthesizing nature by means of computation, nature-inspired materials, and information processing in nature.

**VENUE:**

TPNC 2013 will take place in Cáceres, in Western Spain, 300 kms. to the southwest of Madrid and 100 kms. to the Portuguese border. The old city is a UNESCO World Heritage site.

**SCOPE:**

Topics of either theoretical, experimental, or applied interest include, but are not limited to:

* Nature-inspired models of computation:

- amorphous computing
- cellular automata
- chaos and dynamical systems based computing
- evolutionary computing
- membrane computing
- neural computing
- optical computing
- swarm intelligence

* Synthesizing nature by means of computation:

- artificial chemistry
- artificial immune systems
- artificial life

* Nature-inspired materials:

- computing with DNA
- nanocomputing
- physarum computing
- quantum computing and quantum information
- reaction-diffusion computing

* Information processing in nature:

- developmental systems
- fractal geometry
- gene assembly in unicellular organisms
- rough/fuzzy computing in nature
- synthetic biology
- systems biology

* Applications of natural computing to: algorithms, bioinformatics, control, cryptography, design, economics, graphics, hardware, learning, logistics, optimization, pattern recognition, programming, robotics, telecommunications etc.

A flexible "theory to/from practice" approach would be the perfect focus for the expected contributions.

**STRUCTURE:**

TPNC 2013 will consist of:

- invited talks
- invited tutorials
- peer-reviewed contributions

**INVITED SPEAKERS:**

Risto Miikkulainen (Austin), Evolving Neural Networks (tutorial)
Xin Yao (Birmingham), Evolutionary Algorithm Portfolios for Numerical Optimisation

**PROGRAMME COMMITTEE:**

Selim G. Akl (Kingston, CA)
Thomas Bäck (Leiden, NL)
Peter J. Bentley (London, UK)
Hans-Georg Beyer (Dornbirn, AT)
Mauro Birattari (Brussels, BE)
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Sung-Bae Cho (Seoul, KR)
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Carlos A. Coello Coello (Mexico DF, MX)
David W. Corne (Edinburgh, UK)
Peter Dayan (London, UK)
Bernard De Baets (Ghent, BE)
Enrique Herrera-Viedma (Granada, ES)
Yaochu Jin (Guildford, UK)
Nikola Kasabov (Auckland, NZ)
Vladik Kreinovich (El Paso, US)
Kwong-Sak Leung (Hong Kong, CN)
Xiaohui Liu (London, UK)
Manuel Lozano (Granada, ES)
Carlos Martín-Vide (Tarragona, ES, chair)
Julian F. Miller (York, UK)
Frank Neumann (Adelaide, AU)
Leandro Nunes de Castro (São Paulo, BR)
Nikhil R. Pal (Kolkata, IN)
Günther Palm (Ulm, DE)
José Carlos Príncipe (Gainesville, US)
Helge Ritter (Bielefeld, DE)
Conor Ryan (Limerick, IE)
Hava Siegelmann (Amherst, US)
Moshe Sipper (Beer-Sheva, IL)
Thomas Stützle (Brussels, BE)
Ponnuthurai N. Suganthan (Singapore, SG)
Johan Suykens (Leuven, BE)
Kay Chen Tan (Singapore, SG)
Dacheng Tao (Sydney, AU)
Jon Timmis (York, UK)
Marco Tomassini (Lausanne, CH)
Michael D. Vose (Knoxville, US)
Michael N. Vrahatis (Patras, GR)
Harald Weinfurter (Munich, DE)
Rolf Würtz (Bochum, DE)

Jun Zhang (Guangzhou, CN)

**ORGANIZING COMMITTEE:**

Adrian Horia Dediu (Tarragona)
Carlos Martín-Vide (Tarragona, co-chair)
Bianca Truthe (Magdeburg)
Miguel A. Vega-Rodríguez (Cáceres, co-chair)
Florentina Lilica Voicu (Tarragona)

**LOCAL COMMITTEE:**

Víctor Berrocal-Plaza
José M. Chaves-González
Juan A. Gómez-Pulido
David L. González-Álvarez
José M. Granado-Criado
Alejandro Hidalgo-Paniagua
José M. Lanza-Gutiérrez
Álvaro Rubio-Largo
Sergio Santander-Jiménez
Miguel A. Vega-Rodríguez (chair)

**SUBMISSIONS:**

Authors are invited to submit non-anonymized papers in English presenting original and unpublished research. Papers should not exceed 12 single-spaced pages (including eventual appendices) and should be formatted according to the standards of the Springer Verlag's LNCS series (see
http://www.springer.com/computer/lncs?SGWID=0-164-6-793341-0).

Submissions have to be uploaded to:

https://www.easychair.org/conferences/?conf=tpnc2013

**PUBLICATIONS:**

A volume of proceedings published by Springer in the LNCS series will be available by the time of the conference.

A special issue of the journal Soft Computing (Springer, 2011 impact factor: 1.880) will be later published containing peer-reviewed extended versions of some of the papers contributed to the conference. Submissions to it will be by invitation.

**REGISTRATION:**

The period for registration is open from April 17 to December 3, 2013. The registration form can be found at:

http://grammars.grlmc.com/tpnc2013/Registration

**DEADLINES:**

Paper submission: July 23, 2013 (23:59h, CET) – EXTENDED –
Notification of paper acceptance or rejection: August 27, 2013
Final version of the paper for the LNCS proceedings: September 3, 2013
Early registration: September 10, 2013
Late registration: November 19, 2013
Starting of the conference: December 3, 2013
End of the conference: December 5, 2013
Submission to the post-conference special issue: March 5, 2014

**QUESTIONS AND FURTHER INFORMATION:**

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**POSTAL ADDRESS:**

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**ACKNOWLEDGEMENTS:**

Departament d'Economia i Coneixement, Generalitat de Catalunya
Diputación de Cáceres
Universidad de Extremadura
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