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***** CALL FOR POSTERS: submission deadline November 9 *****

**5th INTERNATIONAL CONFERENCE ON THE THEORY AND PRACTICE OF
NATURAL COMPUTING**

TPNC 2016

Sendai, Japan

December 12-14, 2016

Organized by:

Cyberscience Center
Tohoku University

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

<http://grammars.grlmc.com/TPNC2016/>

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 2016 will reserve significant room for young scholars at the beginning of their career and particular focus will be put on methodology. The conference 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 2016 will take place in Sendai, in the northeast (Tohoku) region of Japan. The city was founded in 1600 and is nicknamed the "city of trees". It is the second largest city north of Tokyo. It takes about 100 minutes to reach Sendai from Tokyo by bullet train (Shinkansen). The venue will be the Cyberscience Center, Aobayama Campus, Tohoku University:

<http://www.cc.tohoku.ac.jp/HTML/>

SCOPE:

Topics include, but are not limited to:

- Theoretical contributions to:

amorphous computing
ant colonies
artificial chemistry
artificial immune systems
artificial life
bacterial foraging
cellular automata
chaos computing
collision-based computing
complex adaptive systems
computing with DNA
computing with words and perceptions
developmental systems
evolutionary computing
fractal geometry
fuzzy logic
gene assembly in ciliates
granular computing
intelligent systems
in-vivo computing
membrane computing
nanocomputing
neural computing
optical computing
physarum machines
quantum computing
quantum information
reaction-diffusion systems
rough sets
self-organizing systems
swarm intelligence
synthetic biology

- Applications of natural computing to:

algorithmics
bioinformatics
control
cryptography
design
economics
graphics
hardware
human-computer interaction

knowledge discovery
learning
logistics
medicine
natural language processing
optimization
pattern recognition
planning and scheduling
programming
robotics
telecommunications
web intelligence

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

STRUCTURE:

TPNC 2016 will consist of:

- invited talks
- peer-reviewed contributions
- posters

INVITED SPEAKERS:

Luis Martínez López (University of Jaén), Managing Natural Noise in Recommender Systems

Qingfu Zhang (City University of Hong Kong), Multiobjective Evolutionary Computation, Decomposition and Regularity

PROGRAMME COMMITTEE:

Andrew Adamatzky (University of the West of England, UK)

Zixing Cai (Central South University, China)

Óscar Castillo (Tijuana Institute of Technology, Mexico)

Óscar Cerdón (University of Granada, Spain)

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Philip K. McKinley (Michigan State University, USA)
Jerry M. Mendel (University of Southern California, USA)
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Radko Mesiar (Slovak University of Technology in Bratislava, Slovakia)
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Vilém Novák (University of Ostrava, Czech Republic)
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Friedrich Simmel (Technical University of Munich, Germany)
Andrzej Skowron (University of Warsaw, Poland)
John A. Smolin (IBM Thomas J. Watson Research Center, USA)
Ying Tan (Peking University, China)
Guy Theraulaz (Paul Sabatier University, France)
Tommaso Toffoli (Boston University, USA)
Vicenç Torra (University of Skövde, Sweden)
Edward Tsang (University of Essex, UK)
Sergi Valverde (Pompeu Fabra University, Spain)
José Luis Verdegay (University of Granada, Spain)
Fernando J. Von Zuben (University of Campinas, Brazil)
K. Birgitta Whaley (University of California, Berkeley, USA)
Darrell Whitley (Colorado State University, USA)
Xin-She Yang (Middlesex University, UK)
Hao Ying (Wayne State University, USA)
Mengjie Zhang (Victoria University of Wellington, New Zealand)
Zhi-Hua Zhou (Nanjing University, China)

ORGANIZING COMMITTEE:

Masayuki Fukumitsu (Ebetsu)
Carlos Martín-Vide (Tarragona, co-chair)
Takaaki Mizuki (Sendai, co-chair)
Hideaki Sone (Sendai)
Miguel A. Vega-Rodríguez (Cáceres)
Florentina Lilica Voicu (Tarragona)

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, references, proofs, etc.) and should be

prepared according to the standard format for 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://easychair.org/conferences/?conf=tpnc2016>

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, 2014 JCR impact factor: 1.304) will be later published containing peer-reviewed substantially extended versions of some of the papers contributed to the conference. Submissions to it will be by invitation.

REGISTRATION:

The registration form can be found at:

<http://grammars.grlmc.com/TPNC2016/Registration.php>

DEADLINES:

Paper submission: August 8, 2016 (23:59h, CET) – EXTENDED –
Notification of paper acceptance or rejection: September 2, 2016
Final version of the paper for the LNCS proceedings: September 9, 2016
Early registration: September 9, 2016
Poster submission: November 9, 2016
Notification of poster acceptance or rejection: November 12, 2016
Late registration: November 28, 2016
Submission to the post-conference journal special issue: March 14, 2017

QUESTIONS AND FURTHER INFORMATION:

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