The Fourth International Conference on UNCONVENTIONAL COMPUTATION

Centre for Discrete Mathematics and Theoretical Computer Science, NZ
and
Department of Computer Science and Artificial Intelligence
University of Sevilla, Spain

3–7 October, 2005, Sevilla, Spain

Monday 3 October: Registration

8:30–9:00 (Sala de Grados - ETS Ingeniería Informática)

Monday 3 October: Conference Opening

9:00–9:30

Monday 3 October: Morning Session

Contributed talk:
9:30–10:00 **F. Bernardini, M. Gheorghe, N. Krasnogor, J-L. Giavitto.** On self-assembly in population P systems

Invited talk:
10:00–11:00 **L. Grover.** *Quantum searching amidst uncertainty*

Tea break

Contributed talk:
11:30–12:00 **C. Bonchis, G. Ciobanu, C. Izbaga, D. Petcu.** A web-based P system simulator and its parallelization

Contributed talk:
12:00–12:30 **A. Cabello.** Communication complexity as a principle of quantum mechanics

Lunch break

Monday 3 October: Afternoon Session

Contributed talk:
14:30–15:00 **Z. Dang, O. Ibarra, C. Li, G. Xie.** On model-checking of P systems

Invited talk:
15:00–16:00 **T. Bäck.** *Using genetic algorithms to evolve behaviour in cellular automata*

Tea break

Tutorial:
16:30–17:30 **S. Istrail.** *Logic functions of the genomic cis-regulatory code I*

Tuesday 4 October: Morning Session

Contributed talk:
9:30–10:00 **P. Zuliani.** On counterfactual computation

Invited talk:
10:00–11:00 **S. Istrail.** *Logic functions of the genomic cis-regulatory code*

Tea break

Contributed talk:
11:30–12:00 **M. Gutiérrez-Naranjo, M. J. Pérez-Jiménez, A. Riscos-Nñez, F.J. Romero-Camperot.** P systems with active membranes, without polarizations and without dissolution: a characterization of **P**

Contributed talk:
12:00–12:30 **H. Umeo, M. Hisaoka, S. Akiguchi.** A twelve-state optimum-time synchronization algorithm for two-dimensional rectangular arrays

Lunch break

Tuesday 4 October: Afternoon Session

Contributed talk:
14:30–15:00 **D. Woods, J.P. Gibson.** Lower bounds on the computational power of an optical model of computation

Tutorial:
15:00–16:00 **I. Petre, G. Rozenberg.** *Computing with living cells I*

Tea break

Tutorial:
16:30–17:30 **I. Petre, G. Rozenberg.** *Computing with living cells II*

18:00 Joint sightseeing around Seville

Wednesday 5 October: Excursion

Thursday 6 October: Morning Session

Contributed talk:
9:30–10:00 **N. Jonoska, G. Mccolm.** A computational model for self-assembling flexible titles

Invited talk:
10:00–11:00 **C. Torras.** *Natural inspiration for artificial adaptivity: Some neurocomputing experiences in robotics*

Tea break

Contributed talk:
11:30–12:00 **K. Kobayashi, D. Goldstein.** On formulations of firing squad synchronisation problems

Contributed talk:
12:00–12:30 **O. Kurganskyy, I. Potapov.** Computation in one-dimensional piecewise maps and planar pseudo-billiard systems

Lunch break

Thursday 6 October: Afternoon Session

Contributed talk:
14:30–15:00 **M. Nagy, S. Akl.** On the importance of parallelism for quantum computation and the concept of a universal computer

Tutorial:
15:00–16:00 **S. Istrail.** *Logic functions of the genomic cis-regulatory code II*

Tea break

Tutorial:
16:30–17:30 **Gh. Păun.** *Elementary aspects of membrane computing I*

20:00 Conference dinner

Friday 7 October: Morning Session

Contributed talk:
9:30–10:00 **P. Tosic, G. Agha.** On computational complexity of counting fixed points in certain classes of graph automata

Invited talk:
10:00–11:00 **N. C. Seeman.** Structural DNA nanotechnology: Molecular constructions and computations

Tea break

Contributed talk:
11:30–12:00 **T. Tusarova.** A new sibling of BQP

Contributed talk:
12:00–12:30 **M. Hagiya.** Discrete state transition systems on continuous space-time: a theoretical model for amorphous computing

Lunch break

Friday 7 October: Afternoon Session

Contributed talk:
14:30–15:00 **J. Wiedermann.** Computing by self-reproduction: Autopoietic automata

Contributed talk:
15:00–15:30 **S. Inokuchi, K. Honda, H. Lee, T. Sato, Y. Mizoguchi, Y. Kawahara.** On reversible cellular automata with triplet local rules

Contributed talk:
15:30–16:00 **C. Graciani, A. Riscos-Núñez.** Looking for simple common schemes to design recognizer P systems with active membranes that solves numerical decision problems

Tea break

Tutorial:
16:30–17:30 **Gh. Păun.** *Elementary aspects of membrane computing II*

17:30–18:00 Conference Closing