

Programme for
**Second International Conference on
UNCONVENTIONAL MODELS OF COMPUTATION**

Centre for Discrete Mathematics and Theoretical Computer Science, NZ
and
Solvay Institutes, Brussels, Belgium

13–16 December 2000, Solvay Institutes, Brussels, Belgium

Opening Session:

Chair: F. Lambert

9:00–9:30 **I. Prigogine.** Conference Opening Address

Session Wednesday morning:

Chair: M.J. Dinneen

Invited talk:

9:30–10:30 **I. Antoniou and V.V. Ivanov.** Computational Methods and Tools for Modeling and Analysis of Complex Processes

Contributed talk:

10:30–11:00 **F. Peper.** Spatial Computing on Self-Timed Cellular Automata

Tea break.

Invited talk:

11:30–12:30 **T. Hida.** Some Methods of Computation in White Noise Calculus

Contributed talk:

12:30–13:00 **M.L. Campagnolo and C. Moore.** Upper and Lower Bounds on Continuous-Time Computation

Lunch break.

Session Wednesday afternoon:

Chair: E. Winfree

Invited talk:

14:30–15:30 **T. Head.** Splicing Systems, Aqueous Computing, and Beyond

Tea break.

Contributed talks:

16:00–16:30 **I.V. Kisel.** Elastic Neural Networks for the Traveling Salesman and Earthquake Epicenter Search Problems

16:30–17:00 **A. Păun.** On P Systems with Active Membranes

17:00–17:30 **A.Y. Bonushkina, V.V. Ivanov, A.V. Selin and P.V. Zrelov.** Wavelet Neural Network and its Application to ECG Analysis

Session Thursday morning:

Chair: H.T. Siegelmann

Invited talk:

9:30–10:30 **L. Accardi and R. Sabbadini.** On the Ohya–Masuda Quantum SAT Algorithm

Contributed talk:

10:30–11:00 **C. Zandron, C. Ferretti, and G. Mauri.** Solving NP-Complete Problems Using P Systems with Active Membranes

Tea break.

Invited talk:

11:30–12:30 **G. Rozenberg.** DNA Processing in Ciliates – the Wonders of DNA Computing *in vivo*

Contributed talk:

12:30–13:00 **A.B. Mikhaylova and B.S. Pavlov.** The Quantum Domain As a Triadic Relay

Lunch break.

Session Thursday afternoon:

Chair: K. Svozil

Invited talk:

14:30–15:30 **K. Gustafson.** An Unconventional Computational Linear Algebra: Operator Trigonometry

Tea break.

Contributed talks:

16:00–16:30 **H. Abe and S.C. Sung.** Parallelizing with Limited Number of Ancillae

16:30–17:00 **C. Tamon and T. Yamakami.** Quantum Computation Relative to Oracles

17:00–17:30 **Si Si.** Random Fields and Multiple Markov Properties

Session Friday morning:

Chair: L. Accardi

Invited talk:

9:30–10:30 **H.T. Siegelmann and A. Ben-Hur.** Macroscopical Molecular Computation with Gene Networks

Contributed talk:

10:30–11:00 **Y. Sato, M. Taiji and T. Ikagami.** On the Power of Nonlinear Mappings in Switching Map Systems

Tea break.

Invited talk:

11:30–12:30 **S. Bozapalidis.** Quantum Recognizable Tree Functions

Contributed talk:

12:30–13:00 **U. Guenther.** Similarity Searches Using a Recursive String Parsing Algorithm

Lunch break.

Session Friday afternoon:

Chair: G. Rozenberg

Invited talk:

14:30–15:30 **G. Păun.** Computing with Membranes: Attacking NP-Complete Problems

Tea break.

Contributed talk:

16:00–16:30 **C. Martin-Vide and V. Mitrana.** P Systems with Valuations

16:30–17:00 **C.S. Calude, C. Martin-Vide, V. Mitrana.** Dedicated Session

19:00–21:00 Conference Cocktail and Banquet

Session Saturday morning:

Chair: I Antoniou

Invited talk:

9:30–10:30 **E. Winfree.** *In-vitro* Transcriptional Circuits

Contributed talks:

10:30–11:00 **P.G. Akishin, E.P. Akishina, P. Akritas, I. Antoniou, J. Ioanovich, V.V. Ivanov.** Multi-Sample Stochastic Filtering of Digital Images of Skin Micro-Structure

Tea break.

Contributed talks:

11:30–12:00 **A. Saito and K. Kaneko.** Inaccessibility in Decision Procedures

12:00–12:30 **K. Svovil.** Quantum Information: The New Frontier

12:30–1:00 Conference Closing