Preface

This is with a great pleasure that I edit these three volumes 20, 21 and 22 of the International Journal of Computing Anticipatory Systems, partial proceedings of CASYS'07, the Eighth International Conference CASYS'07 on Computing Anticipatory Systems, Liège, Belgium, August 6-11, 2007.

CASYS'07 was enhanced with the following HONORARY COMMITTEE:

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Dr Daniel Bacquelaine, Député-Bourgmestre de Chaudfontaine

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This conference was organised, as the preceding ones, by our non-profit association CHAOS, Centre for Hyperincursion and Anticipation in Ordered Systems, Institute of Mathematics of the University of Liège.

For this CASYS'07 conference, 207 authors and co-authors, coming from 44 countries, submitted 159 papers. The invited and accepted papers were presented in 10 symposia, held in 4 parallel session rooms at HEC Management School – University of Liege. All these authors are thanked for their collaboration to the success of this conference and for their high level scientific contributions.

All the papers who received a Best Paper Award at CASYS'07, and a selection of invited papers, appeared in COMPUTING ANTICIPATORY SYSTEMS: CASYS'07 – Eighth International Conference, edited by D. M. Dubois, published by The American Institute of Physics, AIP Conference Proceedings # 1051, 2008.

All the other invited and accepted papers, presented at CASYS'07, are published in these CASYS volumes 20, 21 and 22.

CHAOS AWARD

The Board of Administrators of

CHAOS

Centre for Hyperincursion and Anticipation in Ordered Systems

Asssociation Sans But Lucratif

Member of the IFSR, International Federation for Systems Research

Bestowed the CHAOS Award to

Igor Aleksander

For his outstanding scientific works on

Neural Systems Engineering and Machine Consciousness

Liège, Belgium, August 2007

The Professor Dr Igor Aleksander, FREng (United Kingdom) received, during the CASYS'07 conference, the CHAOS AWARD, with a Crystal Eagle Owl of Val Saint-Lambert, for his outstanding scientific works on "Neural Systems Engineering and Machine Consciousness".

The Introduction of this volume deals with the paper *"Incursive Algorithms for Newtonian and Relativistic Gravitations, and Simulation of the Mercury Orbit"* of Daniel M. Dubois. The Figures in the covers of the three volumes 20, 21 and 22, are excerpt from this paper, and represent simulations of the Mercury orbits by incursive algorithms. Figure in cover of the volume 20 represents the Mercury orbit around the Sun during one revolution, given by 88 days. Figure in the cover of the volume 21 shows the revolution of the Mercury orbit, with the revolution after 15,000 centuries, due to the relativistic precession of 180 degrees. Finally, the figure in cover of the volume 22, is the simulation of the Mercury orbit around a Sun with a bigger mass.

This volume 20 deals with invited and accepted papers presented in the Symposiums 1, 2, 3, 4 and 5 of CASYS'07.

The chapter "Physics, Quantum Particles, and Relativistic Gravitation" deals with papers presented at the Symposium 3 of CASYS'07.

Papers of the Symposiums 1 and 2 are given respectively in the chapters "Models and Multi-Agent" and "Mathematical and Logic Systems".

The Invited Session on "Non-classical Logics and Decision Making Techniques" was organized by Jair M. Abe and Fábio R. de Carvalho.

The chapter "Programming and Automata" concerns papers of the Symposium 4, with the following Invited Session "40 years of Object-Oriented Programming", organized by Eugene Kindler and Petr Bulava.

Papers of the Symposium 5 are printed in the chapter "Soft Computing and Software" that contains a first Invited Session "Computational Intelligence and Experimental Design Within Dynamical Anticipatory Systems and Networks", organized by Stefan Pickl and Joerg Schuetze, and a second Invited Session "Software Evolution and Anticipation", organized by J.J. Torres Carbonell and F.L. Gutiérrez.

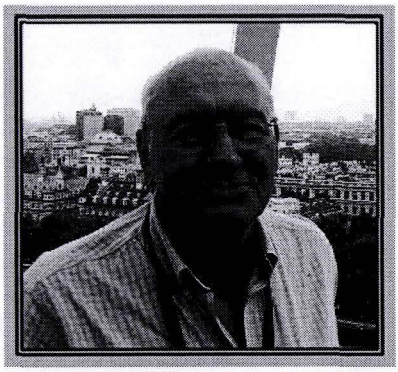
We learned that Professor Tsutomi Da-te, Hokkaido University, Sapporo, Japan, passed away on 31 July 2007. He was a member of the Committees of CASYS conferences, and presented several interesting papers.

Also, we recently learned that Professor Israel Brunstein, Paulista University, São Paulo, Brazil, passed away on 20 June 2008. He was a participant of this CASYS'07 conference and presented two papers in this volume 20.

On the following pages you will find their obituaries, written by their colleagues.

Daniel M. Dubois,
Director of asbl CHAOS,
President of CASYS

Obituary



Professor Israel Brunstein (20 April 1936 – 20 June 2008)

Israel Brunstein (1936-2008), an influent professor in Production Engineering, University of Sao Paulo and Paulista University, Brazil, died on June 20 in Sao Paulo city, Brazil. He was born on April 20, in the Franca city, Sao Paulo state, Brazil, descending from a Jewish family. He entered the University of Sao Paulo in 1956, at the Production Engineering course, taking his degree in 1960. From 1964 to 1965, he spent Postdoctoral position at the University of Stanford, SU, USA, and in 1965 he received the title "Livre Docente" at University of Sao Paulo, Brazil. Over the course of his career he held position at the University of Sao Paulo, Brazil, since 1965 until his retirement in 2006 when he moved to Paulista University, Brazil, to be the Dean of the Pos-Graduate Program in Production Engineering, PhD Course.

His major include Engineering Economics (Costing Analysis), Business Operations Administration, among others.

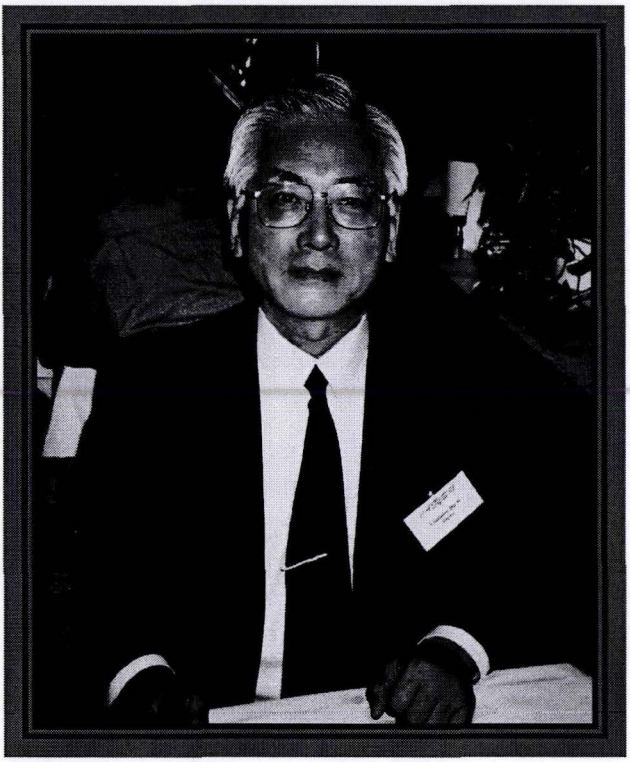
Professor Brunstein was author of many research papers as well as some books; perhaps his most influential book is "I. Brunstein, *Economia de Empresas*: Gestão Econômica de Negócios (in Portuguese), São Paulo, Editora Atlas, 2005, 182pp." in which he put his own vision and long experience on the subject. Although new, this book has influenced a lot of people, mainly students and professionals in Production Engineering, propagating the theme.

Brunstein was a famed teacher and adviser of distinction. He's had advised about 29 PhD students and 38 MSc students; many of them consider him a true "second father". An interesting episode we've heard from his son, "in every father's day he used to receive acknowledgements from many of his former students". Such respect he had from his innumerous students.

Married in 1961, he had a pleasant and fecund life with his wife Dora. They have three sons (Leo, David, and Denis) and one daughter, Janette.

Fábio Romeu de Carvalho and Jair Minoro Abe
Paulista University, Sao Paulo, Brazil

Obituary



Professor Tsutomu Da-te (19 October 1938 – 31 July 2007)

Professor Tsutomu Da-te passed away unanticipatedly, but peacefully on Tuesday, July 31, 2007 in his town of Sapporo, Japan. It was only one week before CASYS'07 conference was held. He was 68 years old.

He was born on October 19, 1938 in Tokyo. From 1958 to 1963, he studied Applied Mathematics at University of Tokyo, and received the B. E. degree in Mathematical Engineering in 1963. He had been working at Electrical Communication Laboratory of the NTT Public Corporation from 1963 to 1966, where he had mainly been engaged in research on semi-electronic switching system. He moved back to University of Tokyo and became an instructor in 1966. During this period, he studied the theory of quadratic transformation and non-linear dynamical system, and received Ph D. degree from University of Tokyo for the doctoral thesis "The theory of quadratic transformation and its applications." In 1979, He became an associate professor of Hokkaido University, and became a full professor in 1982. He had worked up until the official retirement age, and in 2002, he was awarded a title of Professor Emeritus of Hokkaido University. Afterwards, he has continued to devote himself to research and education at Hokkaido Institute of Technology.

In early life, his research interests were within applied mathematics. He introduced the complete set of canonical forms of real homogeneous quadratic transformations, and exhaustively classified quadratic transforms and quadratic differential equation systems, using divergence-convergence boundary. He also introduced an algorithm for assignment problems with mutual priorities. In the field of numerical analysis, he proposed new methods of polynomial approximation. After he became a full professor, his research interests slightly shifted from applied mathematics to Intelligent Information Systems, which include fuzzy theory, artificial neural network, evolutionary computing, human-computer interaction, and so on. In 1998, he launched his research project on Computing Anticipatory Systems from the view point of intelligent information systems, and he has contributed to the CASYS conferences as a member of the international scientific committee.

During his life, especially in Hokkaido University, he educated and supervised a large number of graduate students. In 1980s, he endeavored to achieve the computerization of educational system as the chairman of the academic affairs committee. He also contributed to the establishments of Department of Information Engineering and Division of Systems and Information Engineering, in 1987 and 1995 respectively. He will be evermore remembered by his followers as a reliable but demanding professor who never compromised until he was convinced that his disciples understood completely and clearly his teachings and instructions. The style of his education was the same as the style of his research activity.

Hidetoshi Nonaka
Hokkaido University, Sapporo, Japan