

Program EMC'04

The Convention is held under the high patronage of

Ministry of Education, Science and Youth
Direction for Innovation, Technological transfer and Research Infrastructure

Principal local organizer:
The National Institute for Creativity Iasi

Co-Organizers:

“Gh. Asachi” Technical University Iasi
“Al. I. Cuza” University Iasi
Institute for Computer Science – Iasi, Romanian Academy
Mars Society – Germany
Caos & Complexita Italian Society
University of Pitesti, Romania

Program Committee

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Ion Bogdan (Romania)	Sven Knuth (Germany)
Andrea Borboni (Italy)	Peter Moeller (Denmark)
Sergiu Fendrihan (Austria)	Franco Orsucci (Italy)
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Location

Laboratory for Intelligent Systems and Center of Excellence in Research – CERFS
(halls II-1, II2 and II-3)



Dear Colleagues!

Today the 4th European Mars and Planetary Conference open for the first time in Eastern Europe, a clear signal for a greater European Union in which Romania will find its place. The new constitution which hopefully will soon be into force states: *"To promote scientific and technical progress, industrial competitiveness and the implementation of its policies, the Union shall draw up a European space policy. To this end, it may promote joint initiatives, support research and technological development and coordinate the efforts needed for the exploration and exploitation of space."*

It is worldwide the first constitution to consider as task the Exploration of space. What does it mean? Right now possible budgets and goals are discussed. In the White Book one can read: *"As such, the ISS is also a precursor to the future exploration of our solar system, possibly to the Moon and Mars"*. In this context the European Union is considering to support the visionary ESA Aurora-Program, which sets Moon, Mars and Near Earth Asteroids as goal for manned spaceflights. Unfortunately not all member states support Aurora, especially Germany does not understand the needs for visionary goals for Europe.

We are now here to discuss the latest scientific results and ideas for future unmanned and manned missions to Moon and Mars and other planets. Europe has the ability to take a leading in the exploration of the solar system. But there is a lot of work to do. Space exploration does not have the necessary support in our population. We have to boost enthusiasm, especially at younger people. Let us meet the people and show them the wonders of the Solar System. And let us show them the wonder of planet Earth, the planet where life was born.

Welcome Romania in Europe, welcome to the common effort to reach the Red Planet.

Sven Knuth

President
Mars Society Germany e. V.

Timetable and Program

Date	Time	Activity
Sunday July 25	17:30-19:30	Participants arrival and registration
Monday July 26	9:00- 9:30	Participants arrival and registration
Monday July 26	9:30 – 10:00	Visit at research institutes and companies and informal discussions
	10:00- 10:15	Opening of the Convention
Monday July 26	10:15-11:30	Tutorial session 1
	11:30 -11:45	Coffee break
Monday July 26	11:45 -13:30	Tutorial session 2
Monday July 26	13:00-15:30	Lunch break
Monday July 26	15:30-16:45	Tutorial Session 3
Tuesday July 27	9:30-10:30	Regular Session 1
Tuesday July 27	10:30- 10:45	Coffee break
Tuesday July 27	10:45-13:00	Regular Session 2
Tuesday July 27	13:00-15:00	Lunch break
Tuesday July 27	15:00-16:00	Regular Session 3
Tuesday July 27	16:00-17:30	ARCHIMEDES meeting
Wednesday July 28	9:00-10:00	Poster Session
Wednesday July 28	10:00-11:00	Demo Session
Wednesday July 28	17:00	Meeting of the Group on Space Robotics

Tutorial Session 1

Monday 26 July, 10:15-11:30, Aula Magna

Chairman: Valeriu Sava

1. Image processing for satellite pictures
Dan Galea
Director, Institute for Information Science, Romanian Academy
and Professor, Computer Science, Technical University of Iasi
2. Antenna for space communications
Ioan Bogdan
Professor, Antenna Theory, Technical University of Iasi

Coffee break 11:45-12:00

Tutorial Session 2

Monday 26 July, 11:45-13:30, Aula Magna

Chairman: Sergiu Fendrihan

3. Solving differential and partial differential equations with *MATHEMATICA*TM. Applications
Adriana Pletea
Professor, Mathematics, Technical University of Iasi
4. ARCHIMEDES Mission – An Overview
Hannes S. Griebel
Chief Engineer, ARCHIMEDES Mission, Institut für Raumfahrttechnik,
Fakultät für Luft- und Raumfahrttechnik, Universität der Bundeswehr
München, Germany
5. Viscous fluid flows in circular tubes. Applications to the study of blood flow
Valeriu Sava
Professor, Mathematics, Technical University of Iasi

Tutorial Session 3

Monday 26 July, 15:30-16:45, Aula Magna

Chairman: Ion Bogdan

6. Survival of halobacteria from Permian salt in fluid inclusions as a model of possible biotic survival in Martian halite
Sergiu Fendrihan and Helga Stan-Lotter
University of Salzburg Division Molecular Biology, Department of
Microbiology, Salzburg Austria

7. Fuzzy knowledge based controller for Mars exploratory flight missions
Silviu Ionita
Professor, Dept. Electronics and Computers, University of Pitesti, Romania

Regular Session 1

Tuesday 27 July, 9:30-10:30

Chairman: Silviu Ionita

8. Requirements engineering for the Archimedes project
Peter Möller, Denmark
9. Specific protocols used on spatial applications - overview
A. Brezulianu, E. Mihaescu, Technical University of Iasi, Romania
10. Planetary exploring with evolutionary robots
Ionel Bostan, Emil Sofron, Valeriu Ionescu, Universitatea din Pitesti, Romania
11. Chaotic sensors for space explorations
Zamfir Ciprian, Technical University of Iasi, Romania

Regular Session 2

Tuesday 27 July, 10:45-13:00

Chairman: Hannes Griebel

12. The sensitivity in dynamic systems with chaotic attractors
Silviu Ionita, Emil Sofron, Ionel Bostan
University of Pitesti, România
13. Applying Image Processing and Pattern Recognition Methods to the Characterization of Mars Atmosphere and Soil
Cristian Molder, Assistant Professor, (Eng., Ph.D. Student)
Military Technical Academy, Bucharest, Romania
14. Hermann Oberth and other pioneers of space-flight
Marie-Luise Heuser, Seminar für Philosophie der Technischen Universität Carolo-Wilhelmina, Braunschweig, Germany
15. High accuracy accelerometric measurements
H.N. Teodorescu, Technical University of Iasi, Romania
16. Classification of neuronal network hardware – An overview. Applications: Space Technology
Mihaela Hnatiuc, student member IEEE, University of Bourges, France

Regular Session 3

Tuesday 27 July, 15:00-16:00

Chairpersons: Peter Moeller, Marie-Luise Heuser

17. Comparison between several sensors for measuring low accelerations. Design issues
Gribincea Corneliu, Technical University of Iasi, Romania
18. On Inversion layers in Mars atmosphere
Horia Mihail Teodorescu and Hannes S. Griebel***
ARCHIMEDES Project, Mars Society Romania, Project-Manager technical development, ARCHIMEDES Project, Bundeswehr Universitaet Muenchen, Germany
19. The influence of the gravitational acceleration on the dynamics of the biological processes
Maria Babii, Technical University of Iasi, Romania
20. Image processing for planetary robotics
Group of Master degree students from A.I. Cuza University

Session devoted to the ARCHIMEDES European Project

Tuesday, 27 July, 16:00-17:30 (held at UBEMAR headquarters)

Chairman: Horia-Nicolai Teodorescu

21. ARCHIMEDES - systems development progress and recent experiments
Hannes S. Griebel, Germany
22. Testing and qualification for the Archimedes project (preliminary title).
Klaus Bayler, Germany
23. Mars Society Germany activities and the future of space research in Europe
Sven Knuth, Jena-Optronik GmbH
24. An accelerometric system for the ARCHIMEDES project
H.N. Teodorescu, A. Brezulianu, E. Mihailescu, Romania

Poster Session

Wednesday 28 July, 9:00-10:00

Chairman: Dan Galea

25. Toward a dynamic model for SMA under thermomechanical loads based on phase diagram kinetic approach
Adamini R., Borboni A., Faglia R., Mechanical Eng. Dept., Universita degli Studi di Brescia, Italy
26. Rad-hard by reconfiguration
Adrian Stoica, Tughrul Arslan, Didier Keymeulen, Vu Duong, Xin Guo, Ricardo Zebulum, Ian Ferguson and Taher Daud, JPL, USA

27. A system for testing accelerometric measuring devices
Mihai Horodinca, Technical University of Iasi, Romania
28. Generalized fuzzy systems – recurrent fuzzy system. Applications in control and decision making for space technology
H.N. Teodorescu, Romania
29. Assessing contour extraction methods in image processing
Frederic Mayer, France
30. Magnetic field of Mars
Jose Ricardo Benavides Vila, Physics School, Science and Math Faculty, El Salvador University, El Salvador
31. Space communication applications of speech synthesis and recognition
Al. Ceausu, V. Apopei, Romania

Demo Session

Wednesday 28 July, 10:00-11:00

Chairman: Vasile Apopei

32. A chaotic sensor systems for space applications - demonstrations
C. Zamfir, Romania
33. A family of universal nonlinear predictors
L. Fira, Romania
34. Satellite image processing tools developed at the Institute for Computer Science, Iasi, Romania
S. Bejenariu and co-workers, Romania

Meeting of the Group on Space Robotics

Wednesday 28 July, 5. p.m.

WEB Session

A web session will be opened to connect people on the topics of the Convention.

Workshop/ Round Table / Session for the establishing of a joint group for research in space science and technology in the Iasi Academic Center

Participants: members of the academic community, research community and industry



Sponsors: 1. *UBEMAR Ploiesti*

2. *Prof. Dr.Dr. h.c. Horia-Nicolai Teodorescu*

Messages

Date: Thu, 15 Jul 2004 10:24:52 +0100

To: Dr. Teodorescu Horia-Nicolai <hteodor@etc.tuiasi.ro>

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May I wish you every success with the event.

Kind regards.

Colin Pillinger

Prof Colin Pillinger CBE FRS

Head of Planetary & Space Sciences Research Institute

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Dear Prof. Dr. Dr. h. c. Teodorescu,

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I am very interested in the conference, your university and your city.

With best regards

Dr. Marie-Luise Heuser

Technical University of Braunschweig

Germany