



Gesellschaft zur Förderung
angewandter Informatik e.V.

BioNet '96

**Programme and Invitation
3rd Berlin Workshop**

Bio-Informatics and pulspropagating Networks

14.-15. November 1996

**WISTA Berlin-Adlershof,
Rudower Chaussee 5
Einstein-Kabinett, Building 12.2**

find a city map under

http://www.gfai.fta-berlin.de/www_open/perspg/gfai/zur_gfai.htm

Organised by

Gesellschaft zur Förderung angewandter
Informatik e.V. (GFai)

Programme Committee

Priv. Doz. Dr. Werner Backhaus, Neurobiology FU Berlin
Prof. Dr. med. Peter Bartsch, Neurophysiol., Charité Berlin
Prof. Dr. Wulfram Gerstner, Neurophysik, EPFL Lausanne
Prof. Dr. Horst-Michael Gross, Neuroinformatics TU Ilmenau
Dr. Ing. Gerd Karl Heinz, Microelectronics GFai Berlin
Prof. Dr. Heinrich Klar, Microelectronics TU Berlin
Prof. Dr. Raúl Rojas, Neuroinformatics MLU Halle
Mr. Gunnar Schoel, Technical Informatics FHTW Berlin

Organisation

Dr. G. Heinz, GFai
Rudower Chaussee 5, Geb. 13.7
12484 Berlin
Germany
Tel. +49 (30) 6392-1600, Fax. -1602
e-Mail heinz@gfai.fta-berlin.de

Registration

To give a chance for discussion, the workshop is limited to 60 persons. Please announce your participation in time! Participation is possible only with registration. You will get a registration and the program (email-registrations).

Hotel

Participants are offered to call the Berlin-Tourist-Information via Tel.+49 - 30 - 25 00 25 (english and german conversation). Upon request, the GFai will help you, to arrange accommodation. Please call the bureau (foreign referees).

Conference Fees

DM 50.-- students and graduates
DM 100.-- members of the GFai
DM 175.-- non-members

Please transfer the fee until november 10. to account:
Berliner Bank, Zahlungsgrund: **BioNet <yourname>**,
BLZ 100 200 00, Konto-Nr. **438 1138 800**.

Referees are free of charge.

To ensure your accommodation, please send a formless copy of the **bank-transfer-voucher** together with the **Fax-Back-Form** to Fax +49 - 30 - 6392 1602

Focus

Function of the human brain is one of the most exciting themes in science since time immemorial. Experts of different neural disciplines discuss urgent questions of scientific evidence to understand better the biological information processing in the main point. The workshop offers to be a place for the interdisciplinary discussion of informational properties of nervous systems, and pulse-propagating models.

Latest and originally research results are presented, helping to understand the control of biological systems as the informatics of pulse-propagating networks.

In spite of biological systems seem to appear with nearly chaotic functionality, they produce technical inaccessible qualities. To learn from biology appears permanent as a source of scientific progress and a source for innovative technologies.

A specific feature of the workshop is the interdisciplinary character. In the view of different disciplines (physics, informatics, biology, neurology, surgery, rehabilitation) comparable mechanisms appear in a different sight. What seems to be real for one faculty often is negated by the other.

Thus the workshop likes to be a podium to meet the other faculty and to discuss problems from different viewpoints.

Programme

14. November

11.00 Prof. Dr. Alfred Iwainy; General Chair of the 'Society for the Promotion of Applied Informatics' (GFal):

Inaugural Address and Wishes for the Workshop

11.15 Richard Kempter; Inst. für theor. Physik, TU München:

Neuronal learning rule for sub-millisecond temporal coding - How a barn owl localises its prey through sound localisation

12.00 Yuri M. Pismak*, Juri D.Kropotov², Konstantin A. Mardanov³: *Dept. of Theor. Physics, Saint-Petersburg State Univ.; ²Human Brain Inst. Russian Academy of Sc., Saint-Petersburg; ³Laboratory Complex Syst. Theory, State Univ., Saint-Petersburg:

Synchronous Dynamics in Realistic Neural Network and Possible Mechanisms of Selective Memory.

12.45 Lunch break

13.30 Alexander K. Vidybida; Bogolyubov Institute for Theoretical Physics Kiev :

Information Processing at the Level of Single Pyramidal-Type Neurones

14.15 Martin Bogdan, Prof. Dr. Wolfgang Rosenstiel; Universitaet Tuebingen, Wilhelm-Schickard-Institut fuer Informatik:

Intelligent Neural Interface - Signalprocessing of Nerve Signals using Artificial Neural Nets

15.00 Gerd K. Heinz, Carsten Busch, Mark Zöllner; GFal Berlin:

Time Pattern, Data Addressing, Coding, Projections and Topographic Maps between Neural Fields, that are Multiple Connected - a Physical Approach to Neural Superimposition and Interference

15.45 Coffee Break, Discussion

16.00 Amir C. Akhavan, Dirk Jancke, Martin A. Giese, Gregor Schöner, Hubert R. Dinse; Institut für Neuroinformatik der Ruhr-Universität Bochum, Lehrstuhl für Theoretische Biologie:

Dynamical Representation of Stimuli by Population Activity in the Visual Cortex

16.45 Alexander Y. Mogilevsky, D. Arkhangelski, E. Derziruk; Physiological Lab., Institute for Low Temperatures, Kharkov:

The Relationship between Non-Linear Dynamics of Prestimulus EEG Activity and Sensory Processing

17.30 P. Hartmann, T. Felzer, S. Bleeck; FG Mikroprogrammierung (FB Informatik), Auditorische Arbeitsgruppe (FB Biologie), TH Darmstadt:

Cellular Hypergraphs and Replacement Systems - A Framework for Simulating Physiological Behaviour of Neurons

15. November

9.00 Thomas P. Zahn, U. Markl; Institute of Technical and Theoretical Informatics, Dept. of Neuroinformatics Ilmenau:

Analog Implementation of a Pulse Propagating Network for Attention Based Blind Separation of Acoustical Signals

9.45 Igor Kaljaev; Supercomputer and Neurocomp. Research Center, Taganrog, Russia

Pulse-Propagation Networks in Systems of Optimum Behaviour Selection of Intelligent Objects

10.30 Coffee Break, Discussion

11.00 Gunnar Schoel, Peter Puschmann; Fachhochschule für Technik und Wirtschaft Berlin:

Learning Possibilities of Delaying Neural Nets: Tasks, Classes and Methods. An Overview.

11.45 W. Backhaus, U. Gerster, H. Buckow, R. Pielot, J. Breyer & K. Becker; Freie Universität Berlin, Dept. Theoretical and Experimental Biology:

Physiological Simulations of Neuronal Color Coding in Honeybees

12.30 Lunch Break, Discussion

14.00 Peter Bartsch*, H. Krüger² und H.-J. Meencke²; *Institut für Physiologie der Universitätsklinikums Charité, Dept. Neurophysiologie, ²Evangelisches Krankenhaus Königin Elisabeth Herzberge, Dept. Epileptologie:

Simultaneous comparison of focal and perifocal, human interictal electro-corticograms: reflections of normal and abnormal neural connectivity

14.45 14.45 Roland Mueller, Andreas V.M. Herz; Institut fuer Theoretische Physik, Universitaet Bremen:

Computations with spiking neurons

15.30 Coffee Break, Discussion

16.00 G. Hellmann, M. Spreng²; H. Stefan³; ²Institut f. Physiologie und experimentelle Pathophysiologie Erlangen, ³Zentrum Epilepsie, Neurologische Klinik:

Computerbased Biosignal Analysis in Pre- and Intraoperative Diagnostics

16.45 A.P.Andrushchenko; Institute of Space Investigations of Ukrainian Acad. Sci., Kiev:

Electrocardiogram Features Characterizing the Heart-Brain Interaction

17.30 V.L. Kalmykov; A.S. Kharitonov; Institute of Cell Biophysics, Russian Academy of Sciences, Pushchino, Moscow Region, Russia:

Information Theory In the Main Point and General Connections Between Biology and Physics

Call: Poster- and Paper-Presentations

As in the past, participants are offered to present and to lay out scientific papers and posters.

Poster Format: not greater than 90 x 110 cm.



(Fax-Back-Form, Fax to +49 (30) 6392 1602)

Participation 3rd Berlin Workshop BioNet'96

- I like to participate in the Workshop BioNet'96
- Please help me to find a hotel (foreign guests)

Date: Signature:

GFal, Tagungssekretariat
3. Workshop Bio-Informatik
Rudower Chaussee 5, Geb. 13.7
12484 Berlin
Germany

Address:

Titel/Prenome/Name:

Institution:

Street/Post Box:

Post Code/City:

Nation.....

Phone/Fax:

e-Mail:

Homepage: