



“Electromagnetic Fields and the Brain”

3rd international workshop in the framework of NRP 57 “Non-Ionising Radiation – Health and Environment”

A research programme of the Swiss National Science Foundation

- Organizer:** Swiss National Science Foundation, National Research Programmes
- Date:** October 6 and 7, 2008
- Venue:** Zurich, Hotel Zürichberg (www.zuerichberg.ch)
- Attendance:** Only upon registration
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Goals

In view of the scientific uncertainties regarding non-ionising radiation and the public concern in Switzerland and abroad, the National Research Programme NRP 57 is dedicated to state-of-the-art research to identify potential, adverse non-thermal effects of extremely low frequency (ELF) and radio frequency (RF) electromagnetic field (EMF) exposures on human health and to facilitate the risk assessment of current and future technologies. In its framework, 11 research projects covering four research areas address various aspects ranging from interaction mechanisms at the cellular level to risk perception in the general population. The projects are also in the focus of a series of scientific workshops. More information on the programme and the projects can be found on the programme web page www.nrp57.ch.

Despite the constant interest regarding biological effects of ELF and RF EMF exposure in adult volunteers, the numerous findings remain difficult to interpret. In addition, they also may not be transferable to children, especially in view of potential effects on human health. The third scientific workshop “EMF and the Brain” aims at exploring the difficulties associated with short or medium-term EMF effects on human brain activity, with emphasis on EEG, cerebral blood flow, brain excitability and cognitive functions. Moreover, as the use of mobile phones in adolescence is increasingly widespread and commencing at a younger age, a whole session will shed light on common practice of mobile phone usage in children, possible differences in RF energy absorption and methodological consideration with respect to future research relevant to this age-group.

Designated experts from abroad and researchers from the programme have been invited to actively discuss these scientific issues, providing a unique opportunity for a fruitful exchange of views to advance the field. Attendance is open also to researchers not involved in the programme and other interested parties on a national and international level.



Workshop Agenda

Monday, October 6

12:00-13:00

Registration

13:00-13:10

Welcoming address (Alexander Borbély, President SC NRP 57)

Session 1

Brain Activity in Sleep and Waking

Chairs: Martin Röösli and Peter Achermann

13:10-13:40

The sleepy and sleeping brain - Residual effects of mobile phone exposure
Jim Horne, Sleep Research Centre, Department of Human Sciences, Loughborough University, Leicestershire, UK

Discussion

13:50-14:20

Brain activity is influenced by RF EMF: The role of pulse-modulation parameters
Peter Achermann, Institute of Pharmacology and Toxicology, University of Zurich, Switzerland

Discussion

14:30-15:00

COFFEE BREAK

15:00-15:30

Individual differences in EMF provocation studies on sleep
Sarah Loughran, Australian Centre for Radio Frequency Bioeffects Research (ACRBR), Swinburne University of Technology, Hawthorn, Australia

Discussion

15:40-16:10

Sleep and subjective symptoms as a function of wireless communication signals
Arne Lowden, Stress Research Institute, Stockholm University, Stockholm, Sweden

Discussion

Panel Discussion

Strengths and weaknesses of EMF research on brain activity

Chair: Alexander Borbély

16:20-17:15

Synthesis by the speakers and plenary discussion with all participants

19:00

DINNER (invitation only)

Tuesday, October 7

Session 2

Investigating the Maturing Brain

Chair: Yngve Hammerius

09:10-09:40

An epidemiological view on mobile phone use in childhood and adolescence
Elisabeth Cardis, Centre for Research in Environmental Epidemiology (CREAL), Barcelona, Spain

Discussion

09:50-10:20

Differences in CNS exposure of children vs. adults: Significance for laboratory studies
Niels Kuster, Foundation for Research on Information Technologies in Society (ITIS), Zurich, Switzerland

Discussion



- 10:30-11:00 *COFFEE BREAK*
- Session 3** **Cognitive Functions and Cerebral Blood Flow**
Chair: Elisabeth Cardis
- 11:00-11:30 Performance measures and cognitive processing in response to acute exposure to RF EMF
Riccardo Russo, Department of Psychology, University of Essex, Colchester, UK
Discussion
- 11:40-12:10 Potential effects of UMTS radiation measured by near infrared imaging
Martin Wolf, University Hospital Zurich, Clinic of Neonatology, Zurich, Switzerland
Discussion
- 12:20-12:50 Effects of ELF EMF exposures on brain activation as measured with EEG and fMRI
Frank S. Prato, Lawson Health Research Institute, Nuclear Medicine Department, St. Joseph's Health Care, London, Ontario, Canada
Discussion
- 13:00-14:00 *LIGHT LUNCH*
- Session 4** **Relevance of Current and Future Findings**
Chair: Dariusz Leszczynski
- 14:00-14:30 From the lab to the law
Jürg Baumann, Federal Office for the Environment (FOEN), Air Pollution Control and NIR Division, Non-Ionizing radiation section, Bern, Switzerland
Discussion
- 14:40-15:10 Current findings and research priorities
Lawrie Challis, Emeritus Professor of Physics, University of Nottingham, Nottingham, UK
Discussion
- 15:20-15:35 Waiting for the paradigm shift
Louis Slesin, Microwave News, New York, USA
- Panel Discussion** Where do we go from here? The significance of observed effects in the past, present and future
Chair: Alexander Borbély
- 15:40-16:30 Synthesis by all speakers of day 1 and 2 and plenary discussion with all workshop participants
- 16:30 Final remarks (Alexander Borbély)



VENUE

Location

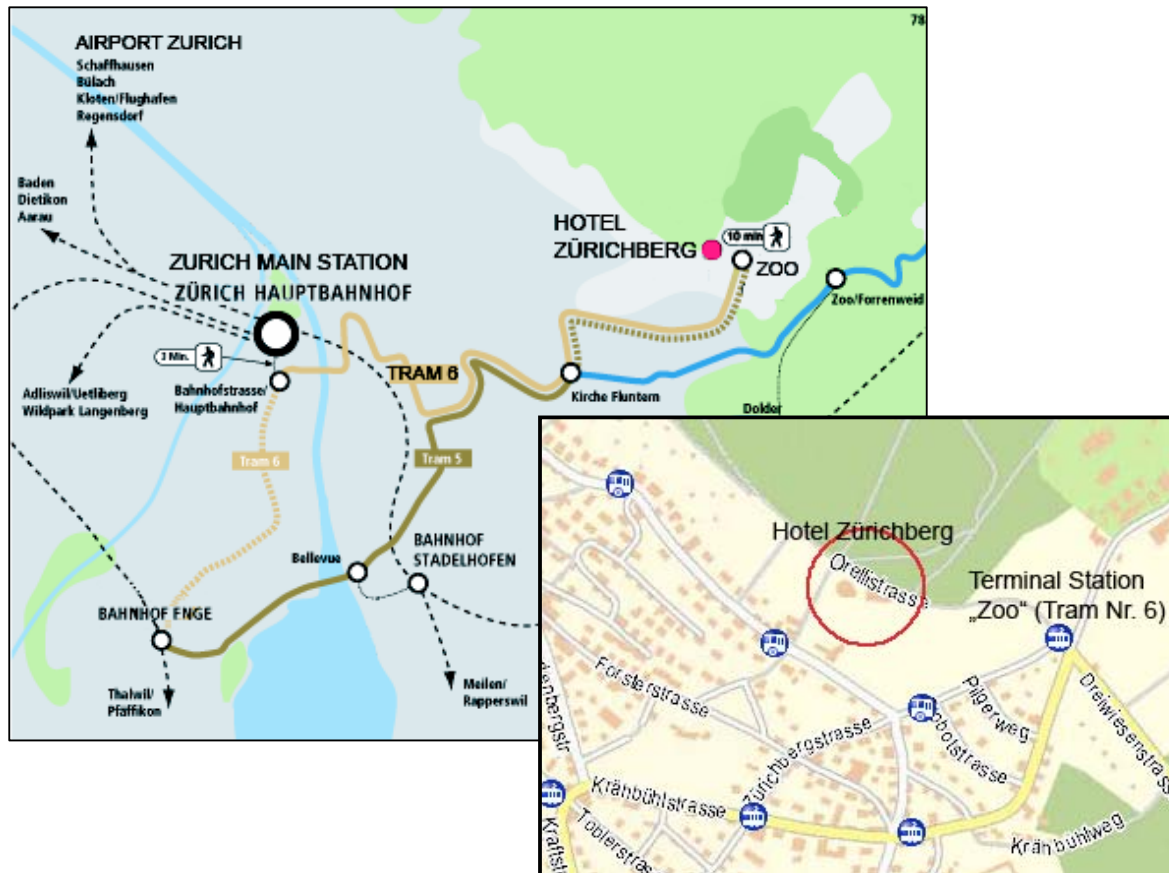
Hotel Zürichberg, Orellistrasse 21, 8044 Zurich; Phone +41 44 268 35 35; Email info@zuerichberg.ch; Web <http://www.zuerichberg.ch/>. The hotel is easily accessible by public transport from both the airport (approx. 30 min) and the city center (approx. 20 min).

How to get there

Taxi from airport: No reservation necessary. Approx. 60 CHF and 20-30 min drive.

Ben Bus: From airport to hotel no reservation necessary; booking needed from hotel to airport. Approx. 25 CHF per person and 35 min drive. Departure between Terminal 1 and 2.

Train/Tram: Regular trains connect the airport with the city center ("Main Station"). Departure every few minutes, duration 11 min. From the **Main Station**, tram nr. 6 to terminal stop "Zoo", duration 16 min. The hotel is a 10 min minute uphill walk from the terminal stop. Ticket Airport-Zoo: 6 CHF ("3 Zones").



Accommodation

A large range of hotels can be found at the official Zurich Tourism webpage: www.zuerich.com.