

The 6th Congress of European Bioelectromagnetics Association (EBEA)

Topics

EBEA 2003 covered the following areas of electromagnetic field research:

- Dosimetry & Exposure systems
- Interaction mechanisms
- In vitro-studies
- Genotoxic effects
- In-vivo studies
- Human studies
- Epidemiological studies
- Medical applications
- Health policy, standards and compliance
- Combined exposures
- Others

Session 1 Dosimetry & Exposure systems I

(Parallel Session to Session 2)

Chair: Georg Neubauer, Germany

Co-chair: Béla Szentpáli, Hungary

11.00 Occupational exposure to static and ELF MFs on railway engines
P. Rossi, R. Falsaperla, V. Brugaletta, P. Betti, A. Gagelli

11.15 Pulsed MF exposure from digital mobile phone
Kari Jokela, Lauri Puranen, Ari-Pekka Sihvonon

11.30 Towards a computer aided dosimetry: the virtual
bioelectromagnetic laboratory
L. Ardoino, F. Bardati, G. Lovisolo, G. Marrocco

11.45 SARs from resonant TETRA radio accessories
Phil Chadwick

12.00 EMF exposure by on-body mounted devices
Andreas Christ, Jürg Fröhlich, Anja Klungenböck and Niels Kuster

12.15 Comparison of theoretical and experimental electropermeabilization on cells in vitro
D. Miklavcic, B. Valic, M. Golzio, M. Pavlin, A. Schatz, C. Faurie,
B. Gabriel, J. Teissié, M.-P. Rols

12.30 Dosimetry of a 40-mice 900 MHz "Ferris-Wheel" exposure system
A. Faraone, S. Chebrolu, W. Luengas, M. Ballen, G. Bit-Babik, M.
Kanda, Tad Babij, M. Swicord, and C. K. Chou

12.45 Extension of the parametric rapid SAR measurement to the SAM phantom
O. Merckel, J.-Ch. Bolomey, G. Fleury

Session 2 Combined exposures and genotoxic effects

(Parallel Session to Session 1)

Chair: Myrtil Simkó, Germany

Co-chair: Zsolt Forgács, Hungary

11.00 Optimal sampling time for the exposure assessment of the MF for epidemiological purposes
Gilbert Decat, Marion Crasson, Eefje Peeters and Walter Van Look

11.15 Combined effects of ELF MFs with other physical and chemical agents: review of in vitro and short-term in vivo studies
Jukka Juutilainen, Timo Kumlin and Jonne Naarala

11.30 Kinetics of reactive oxygen species formation in L929 cell cultures following exposure and co-exposure to RFR and MX
O. Zeni, R. Di Pietro, G. d'Ambrosio, R. Massa, M. Capri, C.
Franceschi, J. Juutilainen, M.R. Scarfi

11.45 Chromosomal aberrations in peripheral blood lymphocytes of workers exposed to ELF MF in various occupations
Gobba F, Roccatto L, Sinigaglia B, Scaringi M, Rossi P.

12.00 In vitro genotoxic effects of Extremely-Low-Frequency electro-magnetic fields
S. Ivancsits, E. Diem, O. Jahn, H.W. Rüdiger

12.15 Evaluation of Micronucleus induction in human lymphocytes following in vitro exposures to Radiofrequency Radiation: a study in the framework of CTIA- FDA Project
M.R. Scarfi, M. Sarti, O. Zeni, M. Romano, A.M. Fresegna, C. Marino, R. Pinto, P. Villani, and G.A. Lovisolo

12.30 Cytogenetic studies in human blood lymphocytes exposed in vitro to radiofrequency radiation, radiation used at two cellular telephone frequencies (835.62 MHz & 847.74 MHz)
Vijayalaxmi

12.45 In vitro exposure of proliferating human peripheral blood lymphocytes to 1800 MHz radiofrequency

Miriam Capri, Elena Scarcella, Enrica Bianchi, Catia Lanzarini, Simona Carosella, Pietro Mesirca, Chiara Agostini, Claudio Franceschi and Ferdinando Bersani

Poster Session A

14.30 – 16.00 :

EMF-NET SC meeting (Closed meeting organised by P.Ravazzani)

Session 3 Health policy, standards and compliance

Ulf Bergqvist Memorial Session

(Parallel Session to Session 4)

Chair: Kjell Hansson Mild, Sweden

Co-chair: László D. Szabó, Hungary

16.00 Exposure assessment of mobile phones: A comparison of EU and US requirements
K. Lamedschwandner, G. Schmid, G. Neubauer

16.15 Will completion of ongoing epidemiologic and long-term animal studies provide sufficient data to evaluate the carcinogenic potential of RF energy?

M. Swicord, J. Morrissey and J. Elder

16.30 Planning new dwellings near overhead power lines

Gert Kelfkens, Ron Pennders and Mathieu Pruppers

16.45 Peruvian mobile communications base stations and its international guidelines compliance

V. Cruz Ornetta

17.00 ELF electric and magnetic fields residential exposure induced by high voltage (HV) power lines: a survey campaign in urban area

C. Malacarne, L. Cristoforetti, A. Vaccari, L. Sandrini, M. Mazzurana, T. Friz and R. Pontalti

17.15 Hungarians on base station: a public opinion poll

Katalin Lénárt

Session 4 In-vivo studies

(Parallel Session to Session 3)

Chair: Jukka Juutilainen, Finland

Co-chair: József Bakos, Hungary

Place: Ballroom B

16.00 Chronic exposure to radiocellular telephones and psychomotor performances

R. de Seze, A. Besset, F. Espa, K. Martin, S. Martin, G. Szwarcberg, J. Erkes, A. Teisserenc, Y. Dauvilliers, M. Billiard

16.15 Research project on the detection and analysis of alleged cognitive, biochemical, and immunological consequences of chronic exposure of three generation of rats to EM GSM- and UMTS-fields of mobile communication

M. Bornhausen, M. Stangassinger, M. Erhard, M. Stohrer, J. Detlefsen, S. Schelkshorn, J. Eberle, O. Petrowicz

16.30 Sub-chronic effects of local exposure to radio-frequency electromagnetic fields with a loop antenna on the cerebral microcirculation in rats

H. Masuda, S. Hirota, A. Ushiyama, K. Wake, S. Watanabe, Y. Yamanaka, M. Taki and C. Ohkubo

16.45 Chronically exposure to the 1.5 GHz electromagnetic near-field used for cellular phones does not promote ethylnitrosourea-induced central nervous system tumors in F344 rats

Tomoyuki Shirai, Mayumi Kawabe, Ichihara, Osamu Fujiwara, Masao Taki, So-ichi Watanabe, Kanako Wake, Yukio Yamanaka, Katsumi Imaida and Seiko Tamano

17.00 Effects of pulsed electromagnetic fields (PEMFs) on experimental degenerative osteoarthritis

F. Cavani, M. Fini, S. Setti, V. Cane, R. Cadossi

17.15 Study of potential leukemogenic effects of 50Hz MFs and harmonics in a rat lymphoblastic leukemia model

Natacha Bernard, Céline Jacquemont, Lionel Devevey, Pascale Chretien, Marie-Laure Tanguy Jean-Jacques Guilloson, and Joëlle Nafziger

Plenary II

Chair: Rene de Seze, France

Co-chair: Norbert Leitgeb, Austria

09.00 New approach in EMF research – proteomics and transcriptomics

Dariusz Leszczynski, Reetta Kuokka, Sakari Joenvaara, Jukka Reivinen

09.40 Medical application of non-ionising electromagnetic energy: clinical biophysics

Ruggero Cadossi

Session 5 Dosimetry & Exposure systems II

(Parallel Session to Session 6)

Chair: Phil Chadwick, UK

Co-chair: Joe Wiart, France

11.00 Relevant exposure parameters for the comparison of animal studies

Veronica Berdinas-Torres, Jürg Fröhlich, Anja Kligenböck, Neviana Nikoloski and Niels Kuster

11.15 Tissue-equivalent liquids for SAR measurement in practice

K. Fukunaga, S. Watanabe and Y. Yamanaka

11.30 Prediction of field distributions in complex environments G.

Neubauer, R. Überbacher, P. Preiner, J. Wiart, G. Schmid, K. Lamedschwandner, H. Haider, W. Giczi

11.45 Analysis of parameters influencing exposure to EMF from mobile phones

Lucia Ardoino, Enrica Barbieri and Paolo Vecchia

12.00 A semi-automatic method for developing a numerical model of dielectric anatomy by MRI

L. Sandrini, M. Mazzurana, A. Vaccari, C. Malacarne, L. Cristoforetti and R. Pontalti

12.15 Dosimetry for two generation experiment: RF exposure of up to nine non-restrained rats of various body mass kept in the same cage

T. Reinhardt, A. Bitz, J. Streckert, V. Hansen, J. Buschmann

12.30 Calculation of current densities induced in an anatomical model of the human body caused by emission from household appliances in the low frequency range

S. Nishizawa, N. Angwafo, H.-O. Ruoss, W. Spreitzer and F. Landstorfer

12.45 Statistical analysis of SAR data: The effective mass concept

V. Monebhurrin, J.-C. Bolomey, A. Azoulay, L. Duchesne, M. Legoff, P. Garreau

Session 6 Epidemiological studies, Human studies

(Parallel Session to Session 5)

Chair: Maila Hietanen, Finland

Co-chair: Gábor Mezei, Hungary

11.00 Neurodegenerative diseases in welders and other workers exposed to high levels of magnetic fields

Niclas Hakansson, Per Gustavsson, Christoffer Johansen, Birgitta Floderus

11.15 How to combine the use of different mobile and cordless telephones in epidemiological studies?

Kjell Hansson Mild, Jonna Wilén, Michael Carlberg, Monica Sandström and Lennart Hardell

11.30 Sleeping disorders and mobile phone base stations: A pilot study

Röösli M., Baldinini Y., Egger M., Braun-Fahrländer C.

11.45 Exposure 50 Hz electromagnetic fields and cutaneous malignant melanoma in adults

Tore Tynes, Lars Klæboe, Tor Haldorsen

12.00 * Influence of location during calls on output power of mobile phones

L. Hillert, A. Ahlbom, M. Feychting, L. Jarup, A. Larsson, D. Neasham, P. Elliott

12.15 Study of effects of modulated microwaves in perceptual system of visual information processing

J. Lass, A. Rodina, T. Bachmann, H. Hinrikus

12.30 Mobile phone use and increase in skin temperature due to insulation, heat conduction and RF absorption

G. Oftedal, Straume, A. Johnsson

12.45 The pituitary-gonadal axis in electric utility workers chronically exposed to 50-Hz magnetic fields

Y. Touitou, H. Charbuy, F. Camus, J. Lambrozo, M. Souques

13.00 – 14.30 Lunch

14.30 – 16.00 Poster Session B

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Session 7 GUARD: Potential effects of cellular phones on the hearing system

(Parallel Session to Session 8)

Chair: Emilie Vandeventer, WHO

Co-chair: Paolo Ravazzani, Italy

16.00 GUARD Project: Sensitive methods for studying effects of GSM on hearing in humans
Mark E Lutman, Steven Bell, Miltos Tsalighopoulos

16.15 GUARD Project: GSM cellular phones and the hearing system: effects of exposure of Sprague-Dawley rats and combined effects of gentamicin and microwaves exposure in Guinea-pigs. Progress report

A. Brazzale, Nathalie Carrere, Pierre-Emmanuel Dulou, P. Galloni,
Yannick Hondarrague, M. Parazzini, M. Piscitelli, G. Tognola Bernard
Veyret, Jean-Marie Aran, C. Marino, Paolo Ravazzani

16.30 SVM-based criterion for classification and variable selection in AEPs recorded under electromagnetic fields.

Régine Le Bouquin Jeannes, Gérard Faucon, Emmanuel Maby.

16.45 Effects of the electromagnetic field of mobile telephones on hearing of humans and rats.

Ozturan O, Kizilay A, Erdem T, Miman MC, Kalcioglu MT.

17.00 Study to evaluate the effects of mobile telephone usage on labyrinthine function

L Luxon, B Ceranic, R Cox, and P Chadwick

17.15 CHRONIC EXPOSURE TO RADIOCELLULAR TELEPHONES AND AUDITORY SYSTEM

R. de Seze J.-P. Artaud, F. Espa, K. Martin, S. Martin, G. Szwarcberg, J. A. Teisserenc, M. Mondain

Session 8 Interaction mechanisms

(Parallel Session to Session 7)

Chair: Guglielmo d'Inzeo, Italy

Co-chair: Zoltán Somosy, Hungary

16.00 On a numerical method for the Zeeman-stark model of ligand binding under EM exposure

B.Bianco, S.Giordano, E.Moggia, I. Mallarini

16.15 A possible mechanism for the interaction between an ELF electromagnetic field and membrane dipolar structures

M. Cappelli, M. Liberti, F. Apollonio and G. D'Inzeo

16.30 Application of a computational chemistry study to model exogenous field action on molecular heme system

Dominici

16.45 TCAD of mobile phones: heading for a generic modelling approach

Peter Futter, Nicolas Chavannes, Neviana Nikoloski and Niels Kuster

17.00 Electrical response of non spherical biological cell models from direct RF exposure

J.L. Sebastián, S. Munoz San Martín, M. Sancho and J. M. Miranda

17.15 A possible energy accumulation mechanism

V.O. Ponomarev, A.V. Karnaukhov

14.30 – 16.00 : EMF Dosimetry Workshop (organised by Phil Chadwick)

17.40 – 18.10 : EMF-NET general communication (Open, Paolo Ravazzani)

Session 9 In-vitro studies

(Parallel Session to COST/EBEA Session I)

Chair: Maria Rosaria Scarfi, Italy

Co-chair: Bernard Veyret, France

08.30 Time-varying ELF fields effects on the single-cell Dictyostelium Discoideum (Protista)

Amaroli A., Trielli F., Bianco B., Giordano S., Moggia E., Del monte Corrado Maria Umberta

08.45 Effects of EMFs and insulin growth factor-I on proteoglycan synthesis in bovine articular cartilage

Monica De Mattei, Agnese Pellati, Michela Pasello, Leo Massari, Donato Gemmati, Alessia Ongaro and Angelo Caruso

09.00 The effect of GSM-900 RFR on camptothecin-induced apoptosis in human U937 lymphoblastoma cells

Lagroye I., Haro E., Billaudel B., Veyret B.

09.15 In vitro studies on promyelocytic cells with the help of gene expression profiling on cDNA microarrays show an increase of protein synthesis after RF-EMF exposure

C. Maercker, K. Schlatterer, R. Gminski, J. Schuderer, N. Kuster, F. Adlkofer, R. Fitzner, R. Tauber

09.30 Microwave exposure system for patch clamp recording equipment

F. Duelli, M. Liberti, F. Apollonio, and G. D'Inzeo

09.45 Alteration of synaptic transmission by neuron excitation-synchronized high-power microwave pulses: a replication study

Andrei Pakhomov, Joanne Doyle, and Michael Murphy

10.00 Mechanisms of cell activation processes after exposure to electromagnetic fields

M. Simkó, M. Lupke J. Rollwitz and M. Lantow

10.15 Static magnetic fields modulate the kinetics of apoptosis and secondary necrosis in HL60 and glioblastoma cells

Clavarino G, Bergamaschi A, Cerella C, Darzynkiewicz Z, De Nicola M, Ghibelli L, Goedhe W, Smolewsky P, Tirindelli D and Teodori L

Session COST/EBEA I

(Parallel Session to Session 9)

Chair: Norbert Leitgeb, Austria

Co-chair: Rene de Seze, France

08:00 – 09:00 Registration

09:00 – 09:15 Vecchia/ McManus/ Veyret: Organisers Introduction to the workshop

Studies investigating possible connections between mobile phone use and brain cancer

09:15 – 09:30 "Mobile and cordless telephones and the association with brain tumors in different ages groups"

Hansson Mild

09:30 – 09:50 "Exposure requirements for human volunteer studies"

Kuster

09:50 – 10:10 "Dielectric properties of brain tissue: measurements on humans"

Schmid

10:10 – 10:30 DISCUSSION

Session 10 Medical applications

(Parallel Session to COST/EBEA Session II)

Chair: Ruggero Cadossi, Italy

Co-chair: Judit Szabó, Hungary

11.00 Microwaves in breast cancer detection. A comparison between active and passive methods

Fernando Bardati, Gaetano Marrocco, Maria Pia Massaro

11.15 Experience with treatment of non-unions with capacitively coupled electric field. Italian experience

A. Impagliazzo, A. Mattei, G. Spurio Pompili, S. Setti, R. Cadossi

11.30 EMFs in biomedicine: Cytoprotection and gene therapy

R. Goodman, H. Lin, M. Blank

11.45 Magnetic and EMF therapy of pain

M.S. Markov

12.00 Microwave detection of breast tumours

R.Nilavalan, I.J.Craddock, A. Preece, J.Leendertz and R.Benjamin

12.15 Technical and clinical aspects of microwave thermotherapy

Vrba,J., Hlavac, R., Chovanec,R., Herza,J., Cvek,J., Oppl,L., Kvech,J., Kubes,J.

12:30 Conference Closing

Session COST/EBEA II

(Parallel Session to Session 10)

Chair: Tom McManus, UK

Co-chair: Maila Hietanen, Finland

Influence of EMF on cognitive functions

11:00 – 11:20 Effects of GSM phones on the hearing systems in animals and humans

Ravazzani

11:20 – 11:40 Effect of RF EMF (type GSM) on Regional Cerebral Blood Flow: a PET Study

Achermann

11:40 – 12:00 Possible effects of GSM exposure on CNS of humans

Haarala

12:00 – 12:20 Results of the TNO study

Zwamborn

12:20 – 13:00 DISCUSSION

13:00 - 14:30 Lunch

14:30 – 16:00 MCM

16:00 – 16:15 Coffee BREAK
16:15 – 16:30 STM "Mobile Phone and Children"
Martens

16:30 – 16:45 STM "Genetic Aspects"
Verschaeve

17:00 – 17:15 STM "Base Station Monitoring"
Wiert

17:15 – 17:30 FP6 "Network at excellence"
Ravazzani

Sunday

In-vitro

08:30 – 08:50 "DNA damage in mammalian brain, blood and cultured cells exposed to RF radiation used for mobile phones"
Vijayalaxmi

Blood-Brain-Barrier

08:50 – 09:15 "Summary of the Reisenburg workshop on EMF and the BBB"
Franke

09:15 – 09:35 "Intra vital-microscopic evaluations of exposure effects to RF-EMF on the cerebral circulation in rats"
Masuda

Miscellaneous

09:35 – 09:55 "Effects of TETRA fields on cellular calcium in cultured neurones and cardiac myocytes"
Tattersall

09:55 – 10:15 "Sleep quality of residents near mobile base stations (feasibility study)"
Danker-Hopfe

10:15 – 10:30 DISCUSSION

Informant: Scott Hill
Scott@frontiersciences.zzn.com

Omega: see also <http://www.diamond-congress.hu/ebea2003/>