

URSI

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International Union of Radio Science Commissions A and B

→ **ADVANCE PROGRAM NOTICE**

OPEN SYMPOSIUM ON BIOLOGICAL EFFECTS OF ELECTROMAGNETIC WAVES

to be held as part of the
19th General Assembly of URSI
Helsinki, Finland, 1-8 August 1978

OS2/1:**Tuesday Morning, 1 August****STATE-OF-THE-ART REVIEW (Invited Papers)**

Opening Remarks and Greetings: S.W. Rosenthal.

1. Biologic Effects of Electromagnetic Waves (EMW) as the Basis of Standard Setting for the General Population in the USSR: M.G. Shandala, USSR.
2. Neurological and Psychological Effects of Radio-Frequency Electromagnetic Radiation: Rapprochement Between East and West: D.R. Justesen, USA.
3. World Health Organization (WHO) Program in Nonionizing Radiation: M. Suess, WHO.
4. Current Status of Biophysical, Dosimetric, and Instrumentation Research: W.A.G. Voss, Canada.
5. Current Status of Electromagnetic Waves and Hyperthermia in Cancer Treatments: F. Dietzel, Federal Republic of Germany.

OS2/2:**Wednesday Morning, 2 August****DOSIMETRY**

1. The Use of Models in the Design and Analysis of Low Frequency Electric Field Exposure Systems: W.T. Kaune and M.C. Miller.
2. Determination of the Average SAR and SAR Patterns in Man and Simplified Models of Man and Animals Exposed to Radiation Fields from 50-2450 MHz and the Thermal Consequences: A.W. Guy, M.D. Webb, A.F. Emery, and C-K. Chou.
3. Near Field Irradiation on Prolate Spheroidal Models of Humans and Animals: M.F. Iskander, P.W. Barber, C.H. Durney, and H. Massoudi.
4. Approaches for Studying Joint Biologic Effects of Microwaves and Noise: I.P. Loss, Y.D. Dumansky, and N.B. Nikitina.
5. Measurement of Induced Electric Fields in a Phantom Model of Man: K-M. Chen, S. Rukspolmuang, and D.P. Nyquist.
6. Eddy Currents Induced by Oscillating Magnetic Fields in Biological Bodies: J-K. Lee and K-M. Chen.
7. Studies of Microwave Absorption by Optical Heterodyne Detection of Thermally Induced Refractive Index Fluctuations: C.C. Davis and M.L. Swicord.

OS2/Poster Session 1:**Wednesday Afternoon, 2 August****FIELD SURVEYS, INSTRUMENTATION, THERAPEUTIC APPLICATORS, AND ELF STUDIES**

1. Population Exposure to VHF and UHF Broadcast Radiation in the United States: R.A. Tell, and E.D. Mantiply.
2. Measurements of Electric and Magnetic Stray Fields Produced by Various Electrodes of 27-MHz Diathermy Equipments: P-L. Kalliomäki, M. Hietanen, O. Koistinen, K. Kalliomäki and E. Valtonen.
3. ELF Magnetic Fields in Electro-Steel and Welding Industries: P. Lövsund, P.A. Öberg, and S.E.G. Nilsson.
4. Measurements and Hygienic Evaluation of Electromagnetic (E-M) Radiation in Radio and Television Stations: H. Aniołczyk.
5. Dielectric Properties of Brain Tissue Between 0.01 and 7 GHz: K.R. Foster, D. Stoy, and H.P. Schwan.
6. Spectrofluorometric Measurements of Biochemical Samples During Simultaneous Microwave Exposures: J.W. Allis, and C.M. Weil.
7. Two Nonlinear Effects in Biological Materials: G.C. Berkowitz, C-L.J. Hu, and F.S. Barnes.
8. Microwave Radiators for Localized Hyperthermia: L.S. Taylor and A.Y. Chung.
9. Multimode Applicators for Microwave Diathermy Treatments: M.A. Stuchly and S.S. Stuchly.
10. A Class of New Microwave Diathermy Applicators: J.C. Lin and G. Kantor.
11. Induction of Localized Hyperthermia in Deep Seated Tumours by Means of Microwave Probes: J.P. Lebourgeois and G. Convert.
12. Corona Effects on Green Plants from Intense 60-Hz Electric Fields: Laboratory and Analytical Results: D.T. Poznaniak, G.W. McKee, D.P. Knievel, and J.G. Johnson.

OS2/Workshops**Wednesday Evening, 2 August****BIOLOGICAL EFFECTS OF MILLIMETER WAVES**

1. Effects of Millimeter Waves on Bacteria and Viruses: D.W. Hill, M.J. Hagmann, A. Riazi, O.P. Gandhi, L.M. Partlow, and L.J. Stensaas.
2. Colicin Induction by Exposure to Millimeter-Wave Radiation: M.L. Swicord, T.W. Athey, F.L. Buchta, and B.A. Krop.
3. Effects of Millimeter Waves on Bacteria and Yeast: M. Dardalhon, B. Averbeck, and A.J. Bertaud.
4. Millimeter Wave Absorption Spectra of Living Tissue: O.P. Gandhi, M.J. Hagmann, L. Lin, D.W. Hill, and L.M. Partlow.
5. Biological Effects of 72-GHz Microwaves on C. albicans Cells: L. Dardanoni, M.V. Torregrossa, L. Zanforlin, and M. Spalla.
6. Coherent Oscillations in Biological Systems: Interaction with Extremely Low Frequency Fields (ELF): Fr. Kaiser.
Discussants: W. Gundler, F. Keilman, C.C. Tarburello.

OS2/3:**Thursday Morning, 3 August****MEDICAL STUDIES**

1. A Microwave Method for Estimating Absolute Values of Average Lung Water Content: M.F. Iskander, C.H. Durney, and D.G. Bragg.
2. Pathologie Humaine Due au Radar: B. Servantie, J. Obrenovitch, and B. Creton.
3. The Response of Mouse Mammary Tumors to Microwave Heating at 2.45 GHz: J.E. Robinson, A.Y. Cheung, G.H. Harrison, and G. Samaras.
4. Bioelectrochemical Effects of Low Frequency Electric Fields: A. Chiabrera, G. Parodi, D. Ponta, G. Vernazza, and R. Viviani.
5. Tumor Blood Flow and R.F. Heating: H.H. LeVeen.
6. Effects of Low Field Strength Pulsing Electromagnetic Fields on Skeletal Tissue: C.A.L. Bassett and R.J. Pawluk.
7. Hematological Effects in Mice Exposed to Pulsed and CW Microwaves: H.A. Ragan and R.D. Phillips.

OS2/4:**Thursday Afternoon, 3 August****ELF EFFECTS**

1. Biological Effects of 60-Hz Electric Fields on Rodents: R.D. Phillips, D.L. Hjeresen, W.T. Kaune, H.A. Ragan, J.E. Morris, M.R. Sikov, R.A. Jaffe, M.J. Free, G.M. Zwicker, D.I. Hilton, J.H. Chandon, and B.J. McClanahan.
2. Hair Vibration in ELF Electric Fields: M.F. Gillis and W.T. Kaune.
3. Enhanced Growth in Pubescent Male Primates Chronically Exposed to ELF Fields: J.D. Grissett.
4. Brain Cell Surfaces in Cooperative Binding and Release of Calcium by Low Level Electromagnetic Fields: W.R. Adey and S. M. Bawin.
5. The Effects of a Weak Constant Magnetic Field upon Human Neurophysiology: W.D. Masterson.
6. Effects of High Strength 60-Hz Electric Fields on the Development of the EEG and Evoked Potential in Rats: D.M. Koltun, D.M. Weissfeld, and Y.J. Seto.
7. Airborne Particles and Electric Fields: W.S. Benninghoff.

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GENERAL TOPICS

1. Ultrastructural Pathology Associated with Microwave Induced Blood-Brain Barrier Permeability: E.N. Albert.
2. Neuropathological Observations on Microwave-Irradiated Hamsters: E.N. Albert, D.L. Brainard, J.D. Randall, and F.S. Jannatta.
3. Receptor Molecules and Synaptosomes as a Model for the Interaction of Microwave Energy with Biological Systems: J.L. Lords, L. Irwin, and G.R. McArthur.
4. Constant Dose Microwave Irradiation of Insect Pupae: R.G. Olsen.
5. Thermographic Analysis of Waveguide-Irradiated Insect Pupae: R.G. Olsen, and W.C. Hammer.
6. Simulation of Some RF and Microwave Biological Effects by Handling and Housing-Induced Stress of Experimental Animals: V. Riley and D.H. Spackman.
7. Biological and Behavioral Effects of Pre- and Postnatal Exposure to 2450-MHz Electromagnetic Radiation in the Squirrel Monkey: J. Kaplan, P. Polson, C. Rebert, and K. Lunan.
8. Effects of Low Level Microwave Radiation on Heart Rate of Rabbits: L-F. Han, C-K. Chou, and A.W. Guy.
9. Chronic Microwave Effects in Skeletal Muscles: A Quantitative Search for Effects on the Temperature Dependence of Membrane Excitability: A. Portela, M.I. Guardado, R. J. Perez, C. Rodriguez, J.R. deX. Oro, E. Zothner, A. Gimeno, P.A. Stewart, and H. Jenerick.
10. Chronic Effects of Very Low Intensity Microwave Radiation on Domestic Fowl: J.A. Tanner and C. Romero-Sierra.
11. Electromagnetic Wave Induced Conformation Change in Macromolecules and Possible Biological Effects: E.W. Prohowsky.
12. Quantum Solid State Mechanisms of Biological Effects of Electromagnetic Radiation with Emphasis on Local Superconductivity: J. Achimowicz.

NERVOUS SYSTEM EFFECTS

1. Microwave Inducement of Post-Lethal Bioelectric Activity: V.V. Tyazhelov, E.P. Khizhniak, and Bolshakov.
2. Studies on the Effects of High Energy Microwave Pulsed Exposure on the Brain of the Rat: A.W. Guy and C-K. Chou.
3. Age Peculiarities of the Response of White Inbred Rats to SHF Electromagnetic Fields: M.G. Shandala, M.I. Rudnev, V.J. Akimenko, and N.N. Chernenky.
4. Studies of RF Radiation Effects on Blood-Brain Barrier Permeability Using Fluorescein and Amino Acids: D.H. Spackman, V. Riley, A.W. Guy, and C-K. Chou.
5. The Effect of Microwave Radiation (1.0 GHz) on the Blood-Brain Barrier in Dogs: B.K. Chang, A.T. Huang, W.T. Joines, and R.S. Kramer.
6. Characteristics of Microwave Auditory Effects: Theory and Experiment: J.C. Lin, R.J. Meltzer, and F.K. Redding.
7. Induction of Retrograde Amnesia for Classically Conditioned Fear by a Single Microwave Pulse: R.H. Lovely, R.B. Johnson, C-K. Chou, and A.W. Guy.
8. Effect of 2.45 GHz Microwave Radiation on Nerve Vitality: D.I. McRee and H. Wachtel.

BEHAVIORAL EFFECTS

1. Biologic Significance of Behavioral Effects Caused by Electromagnetic Waves of SHF Range: M.G. Shandala, M.I. Rudnev, M.A. Navakatikian, M.Y. Antomov, and N.N. Chernenky.
2. Irradiation of Rats by 918-MHz Microwaves at 5 mW/cm²: Delineating the Dose-Response Relationship II: R.H. Lovely, S. Mizumori, R. Johnson, and A.W. Guy.
3. Interaction of Ambient Temperature and Microwave Power Density on Schedule Controlled Behavior in the Rat: M. Gage and W.M. Guyer.
4. Effects of Weak Amplitude-Modulated VHF Fields on Schedule-Controlled Activity of Wild Mallard Ducklings: R.G. Medici and G. Lesser.
5. The Effect of 5.62-GHz Microwave Radiation on Complex Operant Behavior in Rats: J.O. deLorge.
6. The Effects of 9-GHz Pulsed Microwaves on Startle Response Habituation in Rats: J.A. D'Andrea, O.P. Gandhi, C.C. Bailey, and T.A. Thimakis.
7. Behavioral Thermoregulation in the Whiptail Lizard (*Cnemidophorus tigris*) under 2450-MHz, CW, Microwaves: J.A. D'Andrea, O. Cuellar, O.P. Gandhi, J.L. Lords, and H.C. Nielson.
8. Behavioral Stimulus Properties of Microwave Radiation: J.C. Monahan and W.W. Henton.

1. Microwave Effect on Glutamate Receptor Model: O.V. Kolomitkin, Kuznetsov, and I. Akoev.
2. Neoplastic Cells as Sensitive Targets for Examining the Biological and Pathological Effects of RF and Microwave Irradiation: V. Riley, A.W. Guy, D.H. Spackman, and C-K. Chou.
3. Lack of an Effect of Microwave Irradiation on Red Blood Cell Permeability: D.J. Peterson, L.M. Partlow, and O.P. Gandhi.
4. Microwave Effect on Modified Lipid Bilayer Conductivity: S.I. Alekseev and V. V. Tyazhelov.
5. Effects of Continuous and Pulsed Chronic Microwave Exposure on Rabbits: C-K. Chou, A.W. Guy, J.A. McDougall, and L-F. Han.
6. Mutagenic and Reproductive Tests in Male Rats Exposed to 425 or 2450 MHz (CW) Microwaves: E. Berman and H. Carter.
7. The Influence of Microwaves on Genetic Apparatus Functions: S. Baranski, J. Bal, H. Debiec, K. Kwarecki, and T. Mezykowski.

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