



Conference Program

ICECom 2001



16th International Conference on Applied Electromagnetics and Communications

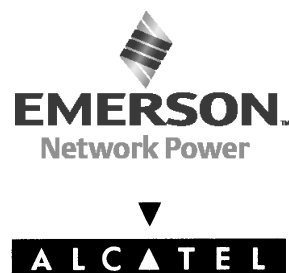
1 – 3 October 2001
Dubrovnik, Croatia



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Conference Program

ICECom 2001

**16th International Conference
on Applied Electromagnetics
and Communications**

**1 – 3 October 2001
Dubrovnik, Croatia**

Organized by:

KoREMA – Croatian Society for Communications, Computing, Electronics,
Measurement and Control, Zagreb, Croatia; member of IMEKO and IFAC

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Conference web page:

<http://www.rasip.fer.hr/korema/icecom2001/>

The Conference is held at:

International Center of Croatian Universities

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Registration:

Monday, 1st October 2001: 08:00 ÷ 12:00 and 14:00 ÷ 19:00

Tuesday, 2nd October 2001: 08:00 ÷ 11:00

Wednesday, 3rd October 2001: 08:00 ÷ 13:00

MONDAY, 1st OCTOBER

08:00 *Registration*

08:20 *Opening*

Plenary Session (Hall A)

Chairpersons: T. Itoh (USA), J. Bartolić (Croatia)

08:40 *Keynote address I*

Cynthia Y. Hang, Johnathan D. Fredrick, Tatsuo Itoh (Los Angeles, USA)

RF Front-End Technologies Based on Active Integrated Antennas and PBG
(Invited)

09:20 John Huang (Pasadena, USA)

The Development of Inflatable Array Antennas (Invited)

10:00 *Coffee break*

10:20 *Keynote address II*

Yahya Rahmat-Samii, Hossein Mosallaei (Los Angeles, USA)

Electromagnetic Band-Gap Structures and Meta-Materials: Concept, Characterization, and Applications (Invited)

11:00 Per-Simon Kildal (Gothenburg, Sweden)

Measurements of Mobile Phone Antennas in Small Reverberation Chambers
(Invited)

Special Technical Presentation (Hall A)

11:40 Croatian Telecom

Development of Mobile Networks in Croatia

12:00 *Lunch break*

MONDAY, 1st OCTOBER**Special Session I: Applied Numerical Techniques** (Hall A)

Session organizer: S. Maci (Italy)

Chairpersons: S. Maci (Italy), A.Freni (Italy)

- 13:40 A. Cucini, A. Polemi, Stefano Maci (Siena, Italy)
Analysis of Radiation and Scattering from Large Microstrip Arrays: Truncated Floquet Wave Full-Wave Method (*Invited*)
- 14:00 Ovidio M. Bucci, Lorenzo Crocco, Tommaso Isernia (Naples, Italy)
Factors Affecting Convergence in Iterative Solution Methods to Scattering from Dielectric Objects
- 14:20 Paola Pirinoli, Giuseppe Vecchi, F. Vipiana (Turin, Italy)
Vector Multiresolution Integral-Equation Analysis of Printed Antennas and Circuits
- 14:40 Per-Simon Kildal (Gothenburg, Sweden)
Diffraction Corrections to Linear Array Line Feeds for Large Cylindrical Reflectors
- 15:00 Angelo Freni (Florence, Italy)
A Finite Element Formulation for the Analysis of Composite Cylindrical Structures Excited by Dipoles and Slots
- 15:20 Silvia Raffaelli (Gothenburg, Sweden), Zvonimir Šipuš (Zagreb, Croatia), Per-Simon Kildal (Gothenburg, Sweden)
Study of Rectangular Microstrip Patch Antennas Conforming a Multilayer Circular Cylinder
- 15:40 Mirza Karamehmedović, Olav Breinbjerg (Lyngby, Denmark)
A Convergent Method of Auxiliary Sources for Two-Dimensional Impedance Scatterers with Edges
- 16:00 *Coffee break*
- 16:20 Zvonimir Šipuš (Zagreb, Croatia), Slavko Rupčić (Osijek, Croatia), Maria Lanne (Mölnadal, Sweden), Lars Josefsson, Patrik Persson (Stockholm, Sweden)
Analysis of Circular Cylindrical Array of Waveguide Elements Using Moment Method
- 16:40 Andrey S. Andrenko (Yokosuka, Japan)
Numerical Modeling of Planar Patch Antennas Integrated with Microstrip and Coplanar PBG Filters

MONDAY, 1st OCTOBER**Mobile and Personal Communications** (Hall A)

Chairpersons: L. Vegni (Italy), P. Kabacik (Poland)

- 17:00 Iñigo Cuiñas, Manuel García-Sánchez (Vigo, Spain)
Effect of Moving People on the Narrow Band Indoor Radio Channel Parameters at Microwave Frequencies
- 17:20 Michel T. Ivrlač, Tobias P. Kurpjuhn, Josef A. Nossek (Munich, Germany)
Spectral Zooming Technique Using Vandermonde Invariance
- 17:40 Mohua Kar, Parveen Wahid (Orlando, USA)
Correlation Coefficients of Space and Polarization Diversity Schemes
- 18:00 Ervin Zentner (Zagreb, Croatia)
Antenna Arrays with Direction Dependent Ciphering of Information
- 18:20 *Short break*
- 18:30 James M. Bornholdt (St. Louis, USA)
An Introduction to Airborne Cellular Systems
- 18:50 Davor Virkes (Zagreb, Croatia)
Propagation Modelling Using Slope Effective Height Algorithm
- 19:10 Nicolas Chavannes, Niels Kuster (Zurich, Switzerland)
Advantages and Limitations of FDTD Subgrid Schemes for EM Transmitters Embedded Within Highly Complex Environments
- 19:30 Boris Drilo, Leon Flatz, Hrvoje Benčić (Zagreb, Croatia)
3G Services Based on Hiperlan 2 Radio Access Network
- 19:50 *Aftersession gathering*
- 20:00 *Welcome cocktail*

MONDAY, 1st OCTOBER**Electroacoustics and Hydroacoustics** (Hall B)

Session organizer: B. Ivančević (Croatia)

Chairpersons: B. Somek (Croatia), B. Ivančević (Croatia)

- 13:40 Mladen Maletić, Siniša Fajt, Ivan Đurek (Zagreb, Croatia)
Measurement of the Rate of Change Distortions in Loudspeaker System
- 14:00 Siniša Fajt, Hrvoje Domitrović, Branko Somek (Zagreb, Croatia)
Evaluation of the Reverberation Time as an Objective Parameter of the Acoustical Quality
- 14:20 Bojan Ivančević, Marjan Sikora, Kristijan Jambrošić (Zagreb, Croatia)
Simulation of Certain Acoustic Properties of the "Knežev dvor" in Dubrovnik
- 14:40 Davor Grgesina, Bojan Ivančević, Kristijan Jambrošić (Zagreb, Croatia)
High Quality Audio Coding Characteristics with Applications in Modern Digital Broadcasting
- 15:00 Goran Hudec, Boris Muvrin (Zagreb, Croatia)
Background Noise Definition for Acoustic Emission Leak Monitoring System at GTP Molve
- 15:20 Bojan Ivančević, Kristijan Jambrošić, Alan Štimac (Zagreb, Croatia)
High Intensity Sound as a Method for Repelling Animals
- 15:40 Velimir Plašč, Hrvoje Domitrović, Bojan Ivančević (Zagreb, Croatia)
Control Room in Croatian Radio
- 16:00 *Coffee break*

MONDAY, 1st OCTOBER**Special Topics in Electromagnetics and Antennas** (Hall B)

Chairpersons: P. Balling (Denmark), D. Bonefačić (Croatia)

- 16:20 Lucio Vegni, Andrea Alú, Filiberto Bilotti (Roma, Italy)
Some New Theoretical Developments on Conformal Integrated Antenna Theory
(Invited)
- 16:40 Peter Balling (Taastrup, Denmark)
Digital Beamforming Antenna RF Design and Analysis - Impact of Amplifier Errors
- 17:00 Davor Bonefačić, Juraj Bartolić (Zagreb, Croatia)
Power Combining Arrays of Active Patches with Line Transformer and Transistor Oscillator
- 17:20 Marek E. Bialkowski (Brisbane, Australia), Pawel Kabacik (Wroclaw, Poland)
An Electromagnetic Model of a Radial Line Planar Antenna with Coupling Probes
- 17:40 Alessandro Mori, Paolo De Vita, Angelo Freni, Mario Calamia (Florence, Italy)
On the BMIA/CAG Method for the Analysis of Large Stacked Patch Antennas
- 18:00 Marco Biagiotti, Guido Biffi Gentili, Mario Calamia (Florence, Italy)
Volumetric Random Array for Wide Beam Scanning: Statistical Study with Constraints
- 18:20 *Short break*
- 18:30 Radovan Zentner, Zvonimir Šipuš (Zagreb, Croatia), Naftali Herscovici (Nashua, USA)
Omnidirectional Cylindrical Stacked Patch Antenna
- 18:50 Debatosh Guha, Jawad Siddiqui (Calcutta, India)
New Cavity Enclosed Dual Band Stacked Microstrip Antennas
- 19:10 S.N. Mulgi, R.M. Vani, P.V. Hunagund, S.F. Farida (Karnataka, India)
A Novel Gap-Coupled Technique for the Enhancement of Bandwidth of Rectangular Microstrip Antenna
- 19:30 Igor Minin, Oleg Minin (Novosibirsk, Russia)
Curvilinear Diffractive Lenses and Antennas for MM-Wave Communications and Wireless
- 19:50 *Aftersession gathering*
- 20:00 *Welcome cocktail*

TUESDAY, 2nd OCTOBER**Special Session II: Small Antennas for Mobile Communications** (Hall A)

Session organizer: J. Bartolić (Croatia)

Chairpersons: J. Huang (USA), A.K. Skrivervik (Switzerland)

08:40 John Huang (Pasadena, USA)

A Review of Antenna Miniaturization Techniques for Wireless Applications
(*Invited*)

09:05 Anja K. Skrivervik, J.-F. Zürcher (Lausanne, Switzerland)

Recent Advances in PCS Antenna Design and Measurement (*Invited*)

09:30 Pawel Kabacik (Wroclaw, Poland), Marek Bialkowski (Brisbane, Australia)

Cylindrical Array Antennas and Their Applications in Wireless Communication Systems (*Invited*)09:55 *Coffee break*

10:20 Eva Rajo-Iglesias, José Luis Vázquez-Roy, Daniel Segovia-Vargas, Carlos Martín-Pascual (Madrid, Spain)

Broadbanding Effects of Upper Patch Size and Position on Stacked Patches

10:40 Marta Martínez-Vázquez, Matthias Gissler, Dirk Heberling (Kamp-Lintfort, Germany)

Volume Reduction of Integrated Handset Antennas

11:00 Takehiko Tsukiji, Yasunori Kumon, Masaaki Yamasaki (Fukuoka, Japan)

Double Folded Monopole Antenna Using Coaxial Cable Loading11:20 *Lunch break*13:15 *Excursion by boat*

TUESDAY, 2nd OCTOBER**Light Wave Technology and Microwave – Optical Interactions** (Hall B)

Chairpersons: M. Tonouchi (Japan), V. Henč-Bartolić (Croatia)

08:40 Masayoshi Tonouchi (Osaka, Japan)

Photon-Microwave Conversion in Semiconductors by Optical Carrier Control
(Invited)

09:00 Sonja Zentner, Zvonimir Šipuš (Zagreb, Croatia), Ľubomír Šumichrast (Bratislava, Slovakia)

Optical Soliton Transmission System Modeling Using Finite Difference Method

09:20 Eva Kovačević, Višnja Henč-Bartolić (Zagreb, Croatia), H.-J. Kunze (Germany)

Investigations of Laser Produced Silicon Plasmas

09:40 Sanda Pleslić, Željko Andreić (Zagreb, Croatia)

Numerical Modeling of Laser Beam-Target Interaction10:00 *Coffee break*

TUESDAY, 2nd OCTOBER**High-Speed Networks** (Hall B)

Chairpersons: H. Domitrović (Croatia), E. Zentner (Croatia)

10:20 Bernard Gršić, Hrvoje Domitrović, Siniša Fajt (Zagreb, Croatia)

IEEE 1394 - Multimedial Network

10:40 A.T. Haghghat, K. Faez (Theran, Iran)

Cell Loss Ratio in ATM Networks: More Accurate Expressions

11:00 Vedran Klepac, Sanja Marković, Branimir Kišan (Zagreb, Croatia)

Evaluation of DV Systems, from Camera to NLE11:20 *Lunch break*13:15 *Excursion by boat*

WEDNESDAY, 3rd OCTOBER**Education in Electromagnetics and Communications** (Hall A)

Chairpersons: Z. Raida (Czech Republic), Z. Šipuš (Croatia)

08:20 Zbyněk Raida, Dušan Černohorský, Dalimil Gala, Stanislav Goňa, Václav Michálek, Vlastimil Navrátil, Zdeněk Nováček, Viktor Otevřel, Petr Poměnka, Jiří Šebesta, Tomáš Urbanec (Brno, Czech Republic)

A Multimedia Textbook of EM Theory and Techniques

08:40 Miroslav Joler, Christos G. Christodoulou (Albuquerque, USA)

A Model for the Efficient Remote Control of Programmable Devices and Simulations

WEDNESDAY, 3rd OCTOBER**Computational and Numerical Techniques I** (Hall A)

Chairpersons: Y. Rahmat-Samii (USA), P.-S. Kildal (Sweden)

- 09:00 Mark Vrancken, Guy A.E. Vandenbosch (Leuven, Belgium)
Progress in Integral Equation Analysis of Vertical Current Sheets in Arbitrarily Multi-Layered Media (*Invited*)
- 09:20 Ovidio Mario Bucci, Francesco D'Agostino, Claudio Gennarelli, Giovanni Riccio, Catello Savarese (Naples, Italy)
Probe Compensated NF-FF Transformation with Planar Spiral Scanning
- 09:40 Alessandro Toscano, Lucio Vegni (Rome, Italy)
Shielding Characteristics of Layered Structures with Bianisotropic Slabs
- 10:00 D. Ivanchenko, Nina Popenko (Kharkov, Ukraine)
High Frequency Scattering from Dielectrical Cylinder with Conducting Strip
- 10:20 Bart Van Thielen, Guy A.E. Vandenbosch (Leuven, Belgium)
Fast Deembedding Technique for Line-Fed Structures Analysed with the Method of Moments
- 10:40 Dragan Poljak, Vicko Dorić, Vesna Roje (Split, Croatia)
Electromagnetic Modeling of Multiple Wires Buried in a Lossy Ground
- 11:00 *Coffee break*
- 11:20 Alexander Nosich, Natalia Y. Bliznyuk (Kharkow, Ukraine)
Radiation of Axisymmetrically Excited Resistive and Thin-Dielectric Disk Antennas (*Invited*)
- 11:40 Flaminio Ferrara, Claudio Gennarelli, Giovanni Riccio (Salerno, Italy), Catello Savarese (Naples, Italy)
A SVD Based Method for Antenna Far-Field Interpolation from Nonuniformly Distributed Samples
- 12:00 George A. Kyriacou, S. Diamantis, A. Mavrides, J.N. Sahalos (Xanthi, Greece)
An Analytical Study of Modes Excited on Axially Magnetized, Grounded Cylindrical Ferrite Substrate
- 12:20 Rudolf Pušenjak (Maribor, Slovenia)
Computation of Electromagnetic Waveguide Transverse Resonances by Using Continuous Finite Elements
- 12:40 Vesna Arnautovski-Toševa, A. Smokvarski, Borislav Popovski, Leonid Greev (Skopje, FYR Macedonia)
Discrete Complex Images Method in Analysis of Vertical Electric Dipole in Presence of Ground
- 13:00 *Lunch break*

WEDNESDAY, 3rd OCTOBER**Computational and Numerical Techniques II** (Hall A)

Chairpersons: A. Nosich (Ukraine), V. Roje (Croatia)

- 15:00 Vesna Arnautovski-Toševa, Leonid Greev (Skopje, FYR Macedonia)
One Comparison of Exact and Quasi-Static Image Model in the Analysis of Grounding Systems
- 15:20 Anupma Marwaha, I.S. Hudiara, Sanjay Marwaha (Gurdaspur, India)
FE Analysis of Dielectric Loaded Pyramidal Horns
- 15:40 Marianna Ivashina (Sevastopol, Ukraine)
A Method of Fast Modeling of Helical Antennas
- 16:00 M.F. El-Kordy, T.E. Taha, A.M. Gomaa (Menouf, Egypt)
Analysis of Superconducting Thin Film Using an Approximate Model of the Current Distribution
- 16:20 I.D. Dordous, I.P. Kozlov, Alexander G. Kyurkchan (Moscow, Russia)
Mathematical and Experimental Modeling of the Spacecraft Radiotechnical Systems Interaction with the Thruster Plume
- 16:40 *Coffee break*
- 17:00 I.L. Verbitskii (Kharkov, Ukraine)
Analytical Solution to the Diffraction on a Slot
- 17:20 A.P. Anioutine, Alexander G. Kyurkchan (Moscow, Russia)
About Scattering Problem for Convex Cylinder Structure
- 17:40 *Aftersession gathering*
- 18:00 *Closing ceremony*

WEDNESDAY, 3rd OCTOBER**RF Circuits and Applications** (Hall B)

Chairpersons: R. Pušenjāk (Slovenia), P. Pribetich (France)

08:20 Jiří Svačina (Brno, Czech Republic)

Dispersion Characteristic of Microstrip Lines on Segmented Dielectric Substrates

08:40 S.V. Fastovich, A.S. Petrov, B.V. Sestroretsky (Moscow, Russia)

Wide-Band Matched Miniature Rectangular Waveguide E - and H - Plane Symmetrical 3-Port Junctions

09:00 Silvio Hrabar (Zagreb, Croatia), Ivan Barbarić (Split, Croatia)

A Simple Two-Dimensional Periodic Structure with Negative Effective Permeability

09:20 Mihai Panu, Gabriel Cojocaru (Sibiu, Romania)

Magnetic Field Design Solutions for a Microwave Plasma

WEDNESDAY, 3rd OCTOBER**Biomedical Effects, EMC, and Industrial Applications of Microwaves** (Hall B)

Chairpersons: D. Stuerger (France), S. Hrabar (Croatia)

09:40 Didier Stuerger, Pierre Pribetich (Dijon, France)

Electromagnetic Modeling and Microwave Heating: From Concepts to Applications in Applicator Design (*Invited*)

10:00 M.O. Özyalçın, F. Akleman, L. Sevgi (Yesilyurt-Istanbul, Turkey)

Numerical Modeling, Validation & Verification in Biomedical Engineering: SAR Calculations Caused by Cellular Phones

10:20 George A. Kyriacou, E. Vafiadis, A. Papagrigoriou, E. Grigorakis, P.M. Bonovas, J.N. Sahalos (Xanthi, Greece)

An Electrical Impedance Tomography System for Medical Applications

10:40 Krešimir Malarić (Zagreb, Croatia)

Design of EMI Site11:00 *Coffee break*

WEDNESDAY, 3rd OCTOBER**Antenna Theory and Techniques** (Hall B)

Chairpersons: M. Ando (Japan), J. Vassal'lo Sanz (Spain)

- 11:20 Makoto Ando, Jiro Hirokawa (Tokio, Japan)
Single Layer Waveguide Slot Arrays for FWA, LAN and Car-Radars in Millimeter-Wave Bands (*Invited*)
- 11:40 Antonio Pedreira Ríos, Juan Vassal'lo Sanz (Madrid, Spain)
Conformed Zones on Fresnel Zone Flat Reflectors
- 12:00 Nikša Burum (Dubrovnik, Croatia), Zvonimir Šipuš (Zagreb, Croatia)
Radiation Pattern of Spherical-Rectangular Microstrip Patch Antennas
- 12:20 Igor Ivanchenko, D. Ivanchenko, A. Koroljev, Nina Popenko, E. Semouchkina, W. Cao, R. Mittra, G. Semouchkin (Kharkov, Ukraine)
Study of Radiation Characteristics of a Novel Leaky Wave Antenna
- 12:40 M.V. Romanenko (Rostov-on-Don, Russia)
The Optimized Feed System for Multiband Antenna with the Axial Symmetry Reflector
- 13:00 *Lunch break*

WEDNESDAY, 3rd OCTOBER**Signal Processing and Applied Modeling for Mobile Communications** (Hall B)

Chairpersons: D. Heberling (Germany), B. Popovski (FYR Macedonia)

- 15:00 Kamel M. Hassan (10th of Ramadan city, Egypt)
New Applications Using Code Division Multiplexing Based on Frequency Encoding Techniques
- 15:20 Amanpreet Singh, Jasvir Singh (Amritsar, India)
Software Radio Communication – DSP Perspectives
- 15:40 Nawal A. El-Fishawy, Mostafa A. Nofal, Albert M. Tadros (Menouf, Egypt)
An Efficient Approach for Authentication of Mobile Users
- 16:00 Olusegun Aboaba (Ile-Ife, Nigeria)
Review of Future Mobile Telecommunications Systems
- 16:20 G.I. Greisukh, E.G. Ezhov, S.A. Stepanov, Igor V. Minin, Oleg V. Minin (Novosibirsk, Russia)
New Possibilities of Diffractive Antennas for Car Radar and Wireless
- 16:40 *Coffee break*
- 17:00 Igor I. Immoreev, Andrey N. Sinyavin (Moscow, Russia)
Radiation of Ultra-Wideband Signals
- 17:20 Gennady Vertogradov (Rostov-on-Don, Russia)
The Computer Simulation of the Wide-Band HF-Channel
- 17:40 *Aftersession gathering*
- 18:00 *Closing ceremony*