



PROGRAM

EUROEM 2004

12 - 16 July 2004, Magdeburg, Germany



hosted by the
Otto-von-Guericke-University Magdeburg

Competence in EMC

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Message from the Rector of the Otto-von-Guericke-University Magdeburg



It is with very great pleasure to welcome you at the Otto-von-Guericke-University in Magdeburg, Germany. To host for the first time in Germany one of the most significant international conferences in the field of electromagnetic phenomena, the EUROEM 2004, is a special honor and quite a challenge. We are proud and filled with satisfaction that our invitation to attend the EUROEM 2004 in Magdeburg has met with an excellent resonance. More than 400 highly qualified contributions have been submitted to the conference and more than 40 countries are represented. Thus, on this solid basis the conference is to become a truly exciting scientific and cultural event. Indeed, nowadays such highlighting international meetings are needed to provide a global forum for the exchange of new ideas, discoveries, and developments. Of course, a successful international competition in science also forces to reflect and rely on one's own strengths. Therefore in future, in the course of a certain reorganization process at our university, we will put more emphasis on engineering sciences and mainly focus on competitive research fields. If we consider the EUROEM 2004 in this light we understand it in part as a representation of one of our key-subjects in the Faculty of Electrical Engineering and Information Technology, namely the ElectroMagnetic Compatibility (EMC).

The Otto-von-Guericke-University Magdeburg is equipped with modern and outstanding laboratories for EMC research. This has led to a growing number of cooperations with the industry of the state Saxony-Anhalt. In particular, small- and medium-sized companies take the opportunity to connect to our scientific staff in order to efficiently solve EMC-related problems that emerge in the development of future products. This local cooperation helps the companies to put their products as quickly as possible on the market and, in turn, to make them more competitive in order to secure and create long-term jobs. Therefore, a profound EMC-expertise in Magdeburg yields a locational advantage for regional companies. The organization of the EUROEM 2004 is perfectly suited to demonstrate this expertise. The technical exhibition of the EUROEM 2004 with about 30 exhibitors provides also companies of Saxony-Anhalt with the opportunity to present their products to highly qualified, international visitors and potential business partners.

The Faculty of Electrical Engineering and Information Technology carries the main responsibility and work to lead this conference to a success. In particular, the EMC research group, which is funded and supported for six years in total by the German Research Foundation (DFG), was and is heavily involved in the preparation and conduction of the conference. I also would like to mention the efficient and close cooperation with the Federal Office of Defense Technology and Procurement (BWB). My special and cordial thanks are due to all of those who helped us to perform, to organize, and to finance the conference. I wish you a pleasant stay in Magdeburg, many new and lasting impressions, and to get an extensive benefit for your further professional career.

A handwritten signature in black ink, appearing to read 'K. Pollmann'.

Klaus Erich Pollmann

Welcoming



On behalf of the Organizing Committee, we have great pleasure in welcoming you to the EUROEM 2004 at the Otto-von-Guericke-University Magdeburg, in Magdeburg, Germany from 12 – 16 July, 2004.

This Symposium provides one of the main international forum within the international scientific and engineering community for the exchange and report of new ideas, information, and advances in theory and application. We are therefore honored and grateful to have the opportunity to host EUROEM 2004 in Magdeburg. EUROEM 2004 continues the tradition of the EUROEM/AMEREM Symposia in bringing together the 14th High Power Electromagnetics Conference (HPEM 14), the 7th Ultra-Wideband Short-Pulse Electromagnetics Conference (UWB SP7), and the 7th Unexploded Ordnance Detection and Range Remediation Conference (UXO 7). The Conference is held under the auspices of the Otto-von-Guericke-University Magdeburg, with the close cooperation and support of the SUMMA Foundation and the Federal Office of Defense Technology and Procurement (BWB). We will be offering the participants a highest standard scientific program, including six plenary lectures from prestigious international speakers coming from universities and industry, seven parallel sessions, and an exhibition. You will have the possibility to meet and to listen to distinguished speakers from more than 40 countries.

First mentioned in 805, Magdeburg is located at the Elbe River, about 90 miles west of Berlin in central Germany. It is the capital of Saxony-Anhalt and known as the city of Emperor Otto the Great (912-973) and the inventor Otto von Guericke (1602-1686). Among the outstanding personalities born in Magdeburg are the composer Georg Philipp Telemann (1681-1767) and Baron von Steuben (1730-1794), the Prussian general who fought in the American Revolutionary war and is best remembered for organizing and training the Continental troops at Valley Forge. Today, visitors of Magdeburg experience the flair of a modern metropolis in a unique setting formed by 1200 years of living historical heritage. Come to Magdeburg and enjoy the many attractions that Saxony-Anhalt has to offer.

This booklet provides information about the scientific and social programs of the Symposium. Registration is required for all participants. If you need any information or have other enquiries please contact the Symposium's Registration Desk.

Many persons have contributed to make this conference a success. Therefore we would like to express our special thanks and appreciation to the Steering Committee, to the International and National Committee, to the (Invited) Session Organizers as well to all who have submitted papers and/or chair a session.

The information contained in this booklet also appears on the Symposium website (www.euroem.org), which will be regularly updated after the Conference. Please visit the website from time to time, also for news about the next Symposium (AMEREM 2006) and the publication of the UWB SP7 Proceedings.

We look forward to meeting you in Magdeburg!

Günter Wollenberg
(Conference Co-Chairman)

Jürgen Nitsch
(Conference Chairman)

Zbigniew Styczynski
(Conference Co-Chairman)

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Organization and Committees

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- Z. A. Styczynski (Symposium Co-Chair)
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- H. G. Krauthäuser (UXO Co-Chair)
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Patronage

Otto-von-Guericke-University Magdeburg
Rector Prof. Dr. K.E. Pollmann

Federal Office of Defense Technology and Procurement
Vice-President Dr. M. Schober

FAF Research Institute for Protective Technologies and NBC Protection
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FAF Technical Center for Information Technology and Electronics
Director G. Neumann

EUROEM 2004 is hosted by the
Otto-von-Guericke-University Magdeburg
Institute for Fundamental Electrical Engineering and Electromagnetic Compatibility.

Acknowledgements

The Steering Committee wishes to thank the following for their support, cooperation, and contribution to the success of this conference:

- Federal Office of Defense Technology and Procurement (BWB)
- European Office of Aerospace Research and Development of the USAF
- United States Department of Energy, Los Alamos National Laboratory
- German Research Foundation (DFG)
- State Saxony-Anhalt
- IEEE
- IEEE Electromagnetic Compatibility Society
- IEEE Antennas and Propagation Society
- IEEE Electron Devices Society
- IEEE Nuclear and Plasma Sciences Society
- IEE
- Steinbeis Stiftung
- U.R.S.I. International Union of Radio Science
- VDE - Association for Electrical, Electronic and Information Technologies
- VDI - Association of Engineers
- VDE/VDI Microelectronics Society (GMM)
- VDE Information Technology Society (ITG)

General Information

Accompanying Persons Persons that accompany regular conference delegates are welcome to join the Symposium Tours. See page 41 of this program for more information.

Badges The name badge issued to the attendees serves as an admission pass to all sessions and the exhibition. Attendees must wear their badges throughout the conference and during social events.

Climate The climate of Magdeburg, during July, usually is pleasantly warm and occasionally humid. Temperatures vary from lows of 15 degree Celsius to highs of about 30 degree Celsius. Visitors should be prepared for variable weather conditions. Jackets or light coats may be required on occasion.

Coffee Breaks During the coffee breaks we offer coffee, tea, juice, water, and light snacks. You can find these refreshments at the entrance area of the main library, near to the exhibition, and at the entrance area of Building 22, near Lecture Hall G22A-H2.

Conference Venue The conference will take place at the campus of the Otto-von-Guericke-University Magdeburg, Germany.

Exhibition A technical exhibition will complement the conference. It will be held in the lower floors of the main library and Building 22. Opening hours are in parallel to the technical sessions, coffee breaks, and lunch breaks.

Internet Access is provided by the computer terminals in the main library. To use the computer terminals please ask at the registration desk for instructions.

Language The language of the conference is English.

Lunches During lunch breaks the main cafeteria offers tasty lunches on its upper floor. Lunches are provided in buffet style and include pork or beef, poultry or fish, vegetarian dishes, various side dishes, salad, and dessert. The price per person is 5.50 Euro. This excludes beverages which can be purchased as well.

Message Board A message board will be placed next to the registration desks. It can be used to post or receive messages.

Passport and Visa A valid passport is required for entry to Germany. Please contact the German embassy nearest to you for specific details and visa requirements. If you require an invitation in order to apply for a visa please contact us at magdeburg@euroem.org.

Smoking Policy As a general rule, smoking is not permitted within buildings of the Otto-von-Guericke-University. There are a few exempted smoking areas that are clearly marked by blue signs. We suggest to smoke outside. Please dispose smoking artifacts in appropriate trash containers.

Speaker's Room Room G22A-209 in Building 22 is designated as the Speaker's Room. It offers audio-video equipment which is equivalent to that of the lecture halls and lecture rooms. Speakers can use it to test their electronic presentations and to practice. For more information on your presentation please refer to the Guidelines for Presentation.

Guidelines for Presentation

Duration The time slot of each regular oral presentation encompasses 20 minutes. It is divided into 15 minutes for the actual presentation and 5 minutes for questions and discussions. Both presenters and session chairs are *strictly* advised to take care of these time limits.

Technical Equipment Each conference room is equipped with a standard overhead projector for transparencies and a computer for electronic presentations. A CD-Rom or USB flash drive can be used to transfer electronic presentations on the computers. We strongly recommend to do the transfer well in advance of your oral presentation. Acceptable electronic formats are Powerpoint and PDF. The computers provide the newest versions of the Powerpoint Viewer, Acrobat Reader, and OpenOffice. It is also possible to connect personal notebooks to the available beamers. However, this should be tested *well in advance*, too, since incompatibilities may occur. Technical assistance is available.

Biographical Notes Before the start of your session please provide your session chairs with information on your curriculum vitae and your research interests. This will help to properly introduce you to the audience.

Otto-von-Guericke-University Campus Guide

The campus of the Otto-von-Guericke-University is located north of the city center, compare the map on page 47. During the EUROEM 2004 the "Universitätsplatz" and its neighboring streets will be subject to heavy road construction. If you approach from this direction you have to follow the provisional sidewalks to enter the campus. Tram lines 8,9, and 10 serve the tram station "Universität". From there it is straightforward to access the campus. Even closer to the buildings of the conference is tram station "Pfälzer Straße". It is served by tram line 1. There *might* be changes due to the ongoing road construction. Such changes should be posted next to the tram schedules at the tram stations.

Once you have entered the campus orientation is rather easy. All buildings of the campus have a number assigned. The buildings that are most important for the conference are shown in highlighted colors on the map on page 48.

Building 30 is the main library of the campus. In its entrance area you find one part of the technical exhibition and signs that lead you to the registration desks. Here you also find refreshments during coffee breaks and internet terminals.

Building 26 is opposite to Building 30 and contains Lecture Hall G26-H1, the largest lecture hall that will be used during the conference. This is where, among other sessions, the plenary sessions will take place.

Building 22 faces the west side of Building 26. From there you have to cross the "Pfälzer Straße" to enter it. The building is home of the Faculty of Economics and has a large display on top which shows real-time stock market indices. On the ground floor you find Lecture Hall G22A-H2, Room G22A-013, and Room G22A-020. Close to the entrance of Lecture Hall G22A-H2 refreshments are served during coffee breaks. Here you can also visit the other part of the technical exhibition. Located on the first level above ground are Room G22A-120 and Room G22A-122. Finally, on the second level above ground, Room G22A-209 is located, this is the Speaker's room.

Building 29 is next to Building 30 and home of the Faculty of Computer Science. Here sessions take place in Room G29-307.

Building 27 is connected to Building 26. It hosts the main cafeteria. Use the staircase right behind the entrance to reach the upper floor. This is the place to join the Welcome Reception on Sunday evening and to get your lunch during the lunch breaks of EUROEM 2004.

Building 18 contains the guest house of the university and therefore is of interest if this is where you stay.

Building 09 is home of the Faculty of Electrical Engineering and Information Technology. On the second floor above ground you find Room 211 where the "IEEE Region 8 Workshop on Numerical Field Computation" and the "IEEE EMC-Chapter Chair Meeting" will take place.

Session Keys

HPEM

Session Number	Session Topic
HPEM 1	Vulnerability of Systems and Components
HPEM 2	Pulsed Power
HPEM 3	EMP Phenomenology, Propagation, Source Region
HPEM 4	Hardening and Protection
HPEM 5	EM Modelling
HPEM 6	Electromagnetic Topology
HPEM 7	Biological Effects and Medical Application
HPEM 8	Antennas
HPEM 9	Nonlinear Dynamics and Chaos
HPEM 10	Lightning - Measurement and Simulation
HPEM 11	Measurement Techniques
HPEM 12	Simulators and Simulation Techniques
HPEM 13	High Intensity Radiated Fields
HPEM 14	IEMI Protection Methods
HPEM 15	Space Weather and Geomagnetic Storms
HPEM 16	High Power RF Source Technology
HPEM 17	Susceptibility of Components and Electrical Circuits (Joint Session of HPEM-17 and UWB-10)
HPEM 18	Coupling to Structures & Cables
HPEM 19	Electromagnetic Compatibility
HPEM 20	EM Standards & Specifications
HPEM 21	High-Power Microwaves
HPEM 22	Numerical Methods
HPEM 23	Hardness Assurance & Maintenance
HPEM 24	New Frontiers in Effects Analysis for Electromagnetic Interference

UWB

Session Number	Session Topic
UWB 1	Special Session to Honor Carl Baum
UWB 2	Propagation
UWB 3	UWB- Interference with Aircraft Systems
UWB 4	Time-Domain Computation Techniques
UWB 5	Target Detection & Discrimination
UWB 6	Applications of Hyperband Systems and Antennas
UWB 7	Time-Domain Techniques for the Transient Analysis of Complex Problems
UWB 8	UWB Antennas
UWB 9	UWB Radar Systems
UWB 10	Susceptibility of Components and Electrical Circuits (Joint Session of HPEM-17 and UWB-10)
UWB 11	Short-Pulse Measurement Techniques
UWB 12	Applications of High-Power, Ultra-Wideband and Short-Pulse Electromagnetics to Homeland, Air & Missile Defence
UWB 13	Pulsed Power
UWB 14	Electromagnetic Theory
UWB 15	Antennas for UWB Communication
UWB 16	Scattering
UWB 17	UWB Communication

UXO

Session Number	Session Topic
UXO 1	Defining UXO - Sites, Problems
UXO 2	Soil, Clutter, and Discrimination
UXO 3	UXO & Landmines: Detection, Identification, and Neutralization
UXO 4	Modeling & Simulation

Conference Schedule

Monday July 12, 2004							
Time	G26-H1	G22A-H2	G29-307	G22A-013	G22A-020	G22A-120	G22A-122
09:00	Welcome						
09:50	Coffee Break						
10:30	HPEM 1/1	HPEM 2/1	UWB 1/1	HPEM 3/1	HPEM 4/1	UXO 1/1	HPEM 5/1
11:50	Lunch Break						
13:30	HPEM 1/2	HPEM 2/2	UWB 1/2	UWB 2/1	HPEM 4/2	HPEM 6/1	HPEM 5/2
14:50	Coffee Break						
15:30	HPEM 1/3	UWB 3/1	UWB 1/3	UWB 2/2	HPEM 4/3	HPEM 6/2	HPEM 5/3
19:30	Opening Ceremony (Doors open at 19:00)						

Tuesday July 13, 2004							
Time	G26-H1	G22A-H2	G29-307	G22A-013	G22A-020	G22A-120	G22A-122
08:30	HPEM 7/1	UWB 4/1	HPEM 8/1	UWB 5/1	HPEM 9/1	UWB 6/1	HPEM 10/1
09:50	Coffee Break						
10:30	HPEM 7/2	UWB 4/2	HPEM 8/2	UWB 5/2	HPEM 9/2	UWB 6/2	HPEM 10/2
11:50	Lunch Break						
13:30	HPEM 7/3	UWB 7/1	HPEM 8/3	UWB 5/3	HPEM 9/3	HPEM 11/1	HPEM 10/3
14:50	Coffee Break						
15:30	HPEM 7/4	UWB 7/2	HPEM 12/1	HPEM 13/1	HPEM 9/4	HPEM 11/2	UXO 2/1
19:00	Mayor's Reception (on Invitation only)						

Wednesday July 14, 2004							
Time	G26-H1	G22A-H2	G29-307	G22A-013	G22A-020	G22A-120	G22A-122
08:30	PLENARY						
10:00	Coffee Break						
10:30	PLENARY						
12:00	Lunch Break						
13:30	UWB 8/1	HPEM 14/1	UWB 9/1	UXO 3/1	HPEM 9/5	HPEM 11/3	HPEM 15/1
14:50	Coffee Break						
15:30	UWB 8/2	HPEM 14/2	UWB 9/2	UXO 3/2	HPEM 9/6	HPEM 11/4	HPEM 15/2
18:30	Boarding Buses at Hotels						
19:00	Banquet						

Thursday July 15, 2004							
Time	G26-H1	G22A-H2	G29-307	G22A-013	G22A-020	G22A-120	G22A-122
08:30	HPEM 16/1	UWB 8/3	HPEM 17/1 UWB 10/1	UWB 11/1	HPEM 18/1	HPEM 19/1	UWB 12/1
09:50	Coffee Break						
10:30	HPEM 16/2	UWB 8/4	HPEM 17/2 UWB 10/2	UWB 11/2	HPEM 18/2	HPEM 19/2	HPEM 20/1
11:50	Lunch Break						
13:30	HPEM 21/1	UWB 8/5	HPEM 17/3 UWB 10/3	UWB 13/1	HPEM 18/3	HPEM 19/3	HPEM 22/1
14:50	Coffee Break						
15:30	HPEM 21/2	HPEM 23/1	HPEM 24/1	UWB 13/2	HPEM 18/4	HPEM 19/4	

Friday July 16, 2004							
Time	G26-H1	G22A-H2	G29-307	G22A-013	G22A-020	G22A-120	G22A-122
08:30	UWB 14/1	HPEM 21/3	HPEM 24/2	UWB 15/1	HPEM 22/2	UWB 16/1	UWB 17/1
09:50	Coffee Break						
10:30	UWB 14/2	UXO 4/1		UWB 15/2	HPEM 22/3		
12:20	Farewell						

Workshop

During the conference on Monday, July 12th, an "IEEE Region 8 Workshop on Numerical Field Computation" will take place in Building 09, Room 211 from 13:00 hours to 17:00 hours. The workshop consists of two parts:

- **Part I: Applications of the Principle of Analytic Continuation in Computational Electromagnetics**, Dr. Tapan K. Sarkar, Syracuse University
- **Part II: EMC-Benchmark Examples for the Validation of Numerical Field-Simulation Methods**, Dr. Arnulf Kost, Technical University Cottbus; Dr. Dieter Stoll, Konstanz University of Applied Science; Norbert Henze, University Kassel; Dr. Marco Leone, Siemens AG

This workshop is organized by the IEEE German EMC Chapter. It is free for members and guests of the IEEE EMC-Society. In order to register as a participant please send an E-mail with contact information to Dr. H. Garbe (Heyno.Garbe@ieee.org).

Meetings

Embedded within the conference are the following meetings:

IEEE EMC-Chapter Chair Meeting Thursday, July 15th, 9:00 hours to 17:00 hours in Room 211 of Building 09.

Lunch of the IEEE German EMC Chapter Thursday, July 15th, 12:00 hours to 13:00 hours, in Restaurant "Korfu". Restaurant "Korfu" is one of two restaurants at the corner "Gustav-Adolf-Straße"-Listemannstraße". This is just 100 meters south of the university campus, compare the citymap on page 47 of this program.

Meeting of the Standing AMEREM/EUROEM Committee Thursday, July 15th, 18:00 hours to 20:00 hours in the "Lukasklause". The "Lukasklause" is a historical building close to the Elbe River, about 500 meters east of the conference site. Members of the Standing AMEREM/EUROEM Committee meet at 17:45 hours at the entrance of the main library, Building 30, and walk from there to the "Lukasklause".

HPEM 1: Vulnerability of Systems and Components (Part 1) G26-H1 10:30 – 11:50**Chaired by: R. Stark, J. Latess**

10:30	HPEM 1-1	A Case Study of the Impact of High Power Microwaves on Communication Systems Helmers, S.; Löbmann, M.; Hoffmann, D.; Leone, M.
10:50	HPEM 1-2	HPM Threat to Airborne Systems Rothenhäusler, M.
11:10	HPEM 1-3	HPM PCs Susceptibility Percaille, J.-P.; Chastras, D.; Pouzalgues, R.
11:30	HPEM 1-4	A Methodology for Statistical Characterization of Modeling Parameters for HPM/RF Effects Prediction Sessions, W.; Baedke, M. W.

HPEM 2: Pulsed Power (Part 1) G22A-H2 10:30 – 11:50**Chaired by: A. Larsson, T. Weise**

10:30	HPEM 2-1	Solid-State Marx Bank Modulator for the Next Generation Linear Collider Casey, J. A.; Arntz, F. O.; Gaudreau, M. P. J.; Kempkes, M. A.
10:50	HPEM 2-2	A Compact Former of High-Power Bipolar Subnanosecond Pulses Yankelevich, Y.; Pokryvailo, A.
11:10	HPEM 2-3	Compact, Solid-State High Voltage Radar Modulators Kempkes, M. A.; Gaudreau, M. P. J.; Casey, J. A.; Hawkey, T.; Brown, P.; Mulvaney, J. M.
11:30	HPEM 2-4	MCG - Based Electromagnetic Sources Soshenko, V. A.; Adzhiev, A. H.; Tishchenko, A. S.; Sinkov, V. V.; Novikov, V. E.

UWB 1: Special Session to Honor Carl Baum (Part 1) G29-307 10:30 – 11:50**Chaired by: J. Nitsch, F. Sabath**

10:30	UWB 1-1	Dr. Carl Baum: One Remarkable Career Prather, W. D.
10:50	UWB 1-2	Reminiscences about working with Carl Baum for over 3 decades Giri, D. V.
11:10	UWB 1-3	Carl E. Baum: 40 Years of Leadership in Developing Sensors for Electromagnetic Pulse (EMP) Measurements both Inside and Away from Nuclear Source Regions Giles, J. C.
11:30	UWB 1-4	Exploiting Noisy Transient Response using the Fractional Fourier Transform Jang, S.; Sarkar, T. K.

HPEM 3: EMP Phenomenology, Propagation, Source Region (Part 1) G22A-013 10:30 – 12:30**Chaired by: A. Kälin, J. Shiloh**

10:30	HPEM 3-1	Calculation of Energy Evolved in the Loads of Strip Transmission Line in Action of Pulse Electromagnetic Field Podosenov, S. A.; Sakharov, K. Y.; Sokolov, A. A.
10:50	HPEM 3-2	Influence of Earth Surface on TEM Horn Array Transient Radiation Podosenov, S. A.; Sakharov, K. Y.; Sokolov, A. A.
11:10	HPEM 3-3	Effect of a Cylindrical Density Enhancement on Electromagnetic Wave Radiation from a Modulated Electron Spiral Beam in a Magnetoplasma Zaboronkova, T.; Krafft, C.
11:30	HPEM 3-4	Electromagnetics Associated with Laser Pulse Propagation and Ionization Page, W. E.; Zimmerman, W.
11:50	HPEM 3-5	Excitation and Propagation of Nonlinear Waves of Volume Charge in Metall Conductors Adamenko, S. V.; Novikov, V. E.; Paschenko, A. V.; Shapoval, I. M.
12:10	HPEM 3-6	The Contribution of Hydrodynamics to the Evolution of the Lightning Source Region Gardner, R. L.

Lunch Break**11:50–13:30**

HPEM 4: Hardening and Protection (Part 1)**G22A-020 10:30 – 11:50**

(organized by the German URSI Commission E)

Chaired by: J. L. ter Haseborg,

10:30	HPEM 4-1	Investigation of Limiters for HPM Front Door Protection Nilsson, T.; Jonsson, R.
10:50	HPEM 4-2	Considerations Regarding Reduced Shielding Effectiveness of C4I Enclosures Nyffeler, M.; Tesche, F. M.
11:10	HPEM 4-3	Practical Design of Protection Circuits against Extremely Fast High Power Electromagnetics Krzikalla, R.; ter Haseborg, J. L.
11:30	HPEM 4-4	Grounding Systems Frequency Response Wiater, J.

UXO 1: Defining UXO - Sites, Problems (Part 1)**G22A-120 10:30 – 11:30****Chaired by: I. Kohlberg, H. G. Krauthäuser**

10:30	UXO 1-1	Mined and UXO Areas from Around the World Bertrand, H. E.
10:50	UXO 1-2	Project Network HuMin/MD - Advanced Data Analysis Methods for Metal Detectors Eigenbrod, H.
11:10	UXO 1-3	easyMine: A Comprehensive Approach in UXO/Land Mine Detection Research Böttger, U.; Beier, K.; Biering, B.; Peichl, M.; van Rienen, U.; Schulze, S.; Spyra, W.

HPEM 5: EM Modelling (Part 1)**G22A-122 10:30 – 11:50****Chaired by: H. D. Brüns, J. P. Parmantier**

10:30	HPEM 5-1	Electromagnetic Simulation in Anisotropic and Inhomogeneous Media by Volume Currents in the Moment Method Findelee, C.; Brüns, H.-D.; Singer, H.
10:50	HPEM 5-2	Field Excited Multiconductor Transmission Lines Schlagenhauser, F.
11:10	HPEM 5-3	Field Simulation Based EMC-Optimisation of a Converter Power Stage Design Röhlich, A.
11:30	HPEM 5-4	Reduction of EMI and HERP by the Use of Metal Rods for HF Screening Harms, H.-F.

HPEM 1: Vulnerability of Systems and Components (Part 2) G26-H1 13:30 – 14:50**Chaired by: R. Stark, J. Latess**

13:30	HPEM 1-5	EM Coupling to Military Hardened Systems Weixelbaum, D.; Stark, R. H.; Bohl, J.
13:50	HPEM 1-6	EMI Studies with Complex, Distributed Weapon Systems Stark, R. H.; Weixelbaum, D.; Sonnemann, F.; Mueller, W.; Bohl, J.
14:10	HPEM 1-7	Analytical Estimate of Cell Phone Susceptibility to Radiated Electromagnetic Pulse Scott, W. J.; McAdoo, J.
14:30	HPEM 1-8	Experimental Data on Immunity of Certain Radio Systems Parfenov, Y. V.; Siniy, L. L.; Vodopyanov, G. V.

HPEM 2: Pulsed Power (Part 2) G22A-H2 13:30 – 15:10**Chaired by: A. Larsson, T. Weise**

13:30	HPEM 2-6	Testing of Solid Dielectrics with Application to Compact Pulsed Power Schamiloglu, E.; Gaudet, J. A.; Buchenauer, C. J.; Castro, P.; Roybal, M.
13:50	HPEM 2-7	Renaissance of the Transmission Line Transformer with Modern Cable Technology Lindblom, A.; Bernhoff, H.; Larsson, A.; Appelgren, P.; Isberg, J.
14:10	HPEM 2-8	Study of a Laboratory Pulsed-Power Conditioning System for HPM Applications Nyholm, S. E.; Appelgren, P.; Bjarnholt, G.; Hultman, T.; Larsson, A.
14:30	HPEM 2-9	High Voltage Switching Tubes with a Small Voltage Drop on the Anode Perevodchikov, V.; Murashov, A.; Shapenko, V.; Stalkov, P.
14:50	HPEM 2-5	High-Voltage Pulse Generator of Average Power up to 40 kW and Pulse Repetition Frequency up to 1000 Pulses per Second Boyko, M. I.; Bortsov, A. V.; Evdoshenko, L. S.; Zarochentsev, A. I.; Ivanov, V. M.

UWB 1: Special Session to Honor Carl Baum (Part 2) G29-307 13:30 – 14:50**Chaired by: J. Nitsch, F. Sabath**

13:30	UWB 1-5	E.M. Topology: From Theory to Application Parmantier, J.-P.
13:50	UWB 1-7	The Evolution of Impulse Radiating Antennas Farr, E. G.
14:10	UWB 1-8	Aperture Engineering for Impulse Radiating Antennas Tyo, J. S.
14:30	UWB 1-6	Newest Developments in Transmission-Line Theory and Applications Nitsch, J.; Tkachenko, S.

UWB 2: Propagation (Part 1) G22A-013 13:30 – 14:50**Chaired by: A. Marvin, K. Oughstun**

13:30	UWB 2-1	Propagation of HV Short Pulses Through Wire Transmission Lines Ashkenazy, J.; Pokryvailo, A.; Yankelevich, Y.
13:50	UWB 2-2	Penetration of Ultra Wide Band (UWB) Communication Signals Through Walls Feliziani, M.; Buccella, C.; Manzi, G.
14:10	UWB 2-3	Phase-Space Spectral Analysis of Transient Field Propagation in Anisotropic Medium Melamed, T.
14:30	UWB 2-4	Measurements for UWB MIMO Channel Keignart, J.; Rjeily, C. A.; Delaveaud, C.; Daniele, N.

HPEM 4: Hardening and Protection (Part 2)**G22A-020 13:30 – 14:30**

(organized by the German URSI Commission E)

Chaired by: J. L. ter Haseborg,

13:30	HPEM 4-5	Multi-Channel Coax-EMP-Protector with Superior Performance Kaelin, A. W.
13:50	HPEM 4-6	EMC and Surge Protection Concept for Mobile Power Generators Wolff, G. K.
14:10	HPEM 4-7	The Protection of Ordnance and its Electronic Subsystems against the Threat Imposed by CW and Pulsed Electromagnetic Fields Herlemann, H.; Koch, M.; Bausen, A.; Sabath, F.

HPEM 6: Electromagnetic Topology (Part 1)**G22A-120 13:30 – 14:30****Chaired by: J. Carlsson**

13:30	HPEM 6-1	Modes of Curved Waveguide Structures Courtney, C.; Voss, D.
13:50	HPEM 6-2	The Use of Distributed Ground Plane to Achieve EMC – A Practical Example Undén, G.; Garmland, S.
14:10	HPEM 6-3	Ground Planes in a Controlled Electromagnetic Topology. Karlsson, T.

HPEM 5: EM Modelling (Part 2)**G22A-122 13:30 – 14:50****Chaired by: H. D. Brüns, J. P. Parmantier**

13:30	HPEM 5-5	Frequency Selective RF Shielding of COTS Components Harms, H.-F.
13:50	HPEM 5-6	Practical Use of the MoM-PO Hybrid Technique in Conjunction with Feeding Structures Modelled by Impressed Current Sheets Sabiely, M.; Leugner, D.; Brüns, H.-D.
14:10	HPEM 5-7	Time Domain Model for ELF Radio Noise Nickolaenko, A. P.
14:30	HPEM 5-8	A Network Formulation of the Power Balance Method for High Frequency Coupling Mechanisms Junqua, I.; Parmantier, J.-P.; Issac, F.

HPEM 1: Vulnerability of Systems and Components (Part 3) G26-H1 15:30 – 16:30**Chaired by: R. Stark, J. Latess**

15:30	HPEM 1-9	HEMP Effects Analysis of Network Equipment Grady, B. M.; Latess, J.; Stoudt, D. C.
15:50	HPEM 1-10	HEMP Susceptibility Assessments of Modern Digital Control and Communications Equipment Latess, J.; Grady, B. M.; Stoudt, D. C.
16:10	HPEM 1-11	Prediction of the Operational Readiness of EM Agressed Systems Marijon, R.; Girard, C.; Tabbara, W.

UWB 3: UWB- Interference with Aircraft Systems (Part 1) G22A-H2 15:30 – 16:50**Chaired by: R. Kebel**

15:30	UWB 3-1	General Analysis of Leaky Section Cables for Multi-Band Aircraft Cabin Communications with Different Measurement Techniques Fisahn, S.; Camp, M.; Díaz, N. R.; Kebel, R.; Garbe, H.
15:50	UWB 3-2	Measurement of the Mutual Interference between Bluetooth Devices Schoof, A.; ter Haseborg, J. L.
16:10	UWB 3-3	Simulating the Response of Semi-Shielded Systems: Electromagnetic Topology Technique Kirawanich, P.; Gunda, R.; Kranthi, N.; Islam, N.; Parmantier, J.-P.; Bertuol, S.
16:30	UWB 3-4	Simulation of a Cabin Wireless Lan Antenna Inside an Airbus A340-600 Wide-Body Transport Aircraft Ritter, J.; Kebel, R.

UWB 1: Special Session to Honor Carl Baum (Part 3) G29-307 15:30 – 16:30**Chaired by: J. Nitsch, F. Sabath**

15:30	UWB 1-9	A Differential Geometric Approach to EM Lens Design Stone, A.
15:50	UWB 1-10	New Equation of Motion for Classical Charged Particles Meaning and Implications Mo, C. T. C.
16:10	UWB 1-11	Lightning Model Development: The Contribution to High Power Electromagnetics Gardner, R. L.

UWB 2: Propagation (Part 2) G22A-013 15:30 – 16:30**Chaired by: A. Marvin, K. Oughstun**

15:30	UWB 2-5	A Deterministic Indoor UWB Space-Variant Multipath Radio Channel Modelling Lostanlen, Y.; Gougeon, G.; Corre, Y.
15:50	UWB 2-6	On the Fading Properties of a UWB Link in a Dynamic Environment Pagani, P.; Pajusco, P.
16:10	UWB 2-7	Dynamical Evolution of the Brillouin Precursor in Rocard-Powles-Debye Model Dielectrics Oughstun, K. E.

HPEM 4: Hardening and Protection (Part 3) G22A-020 15:30 – 16:10
(organized by the German URSI Commission E)**Chaired by: J. L. ter Haseborg,**

15:30	HPEM 4-8	RF & Microwave Monolithic without DC Bias Zbitou, J.; Latrach, M.; Toutain, S.
15:50	HPEM 4-9	E3 Characterization Testing of Modular Conductive Tents Crevier, W.; Wild, N.; Gray, T.; Colvin, S.

HPEM 6: Electromagnetic Topology (Part 2)**G22A-120 15:30 – 16:30****Chaired by: J. Carlsson**

15:30	HPEM 6-4	Stochastic Model of Electromagnetic Wave Propagation and Absorption in Turbulent Flow of Slightly Ionized Plasma Spitsyn, V. G.
15:50	HPEM 6-5	Path Loss Prediction in Urban Environment Using a Neural Network Approach Cerri, G.; Leo, R. D.; Pennesi, S.; Russo, P.
16:10	HPEM 6-6	To Estimation of RI Appearance at the Receiver Input Trigubovich, V. B.; Losich, V. A.

HPEM 5: EM Modelling (Part 3)**G22A-122 15:30 – 16:30****Chaired by: H. D. Brüns, J. P. Parmantier**

15:30	HPEM 5-10	Computational Radiated-Susceptibility Analysis on the Printed-Circuit-Board Level Leone, M.
15:50	HPEM 5-9	Block Operations Within the MOM Baganz, N.; Gonschorek, K.-H.
16:10	HPEM 5-11	EM-ANN Usability and Efficiency on Connector Modeling Arnaud, A.; Drissi, M.

HPEM 7: Biological Effects and Medical Application (Part 1) G26-H1 08:30 – 09:50**Chaired by: M. Risling**

08:30	HPEM 7-1	Immunomodulating Effect of Low Intensity Laser Irradiation Cherenkov, D. A.; Glushkova, O. V.; Sinotova, O. A.; Sultanova, A. N.; Novoselova, E. G.
08:50	HPEM 7-2	The Effects of 910-MHz Electromagnetic Field on Rat Brain Collagen Fibril Architecture Tzaphlidou, M.; Fotiou, E.; Korovkin, N. V.
09:10	HPEM 7-3	The Effects of 910-MHz Electromagnetic Field on Rat Brain Collagen Tzaphlidou, M.; Fotiou, E.
09:30	HPEM 7-4	Inactivating and Activating Effects of High Pulse Electric Fields on Microorganisms Boyko, M. I.

UWB 4: Time-Domain Computation Techniques (Part 1) G22A-H2 08:30 – 09:50**Chaired by: T. Sarkar, U. Schenk**

08:30	UWB 4-1	FDTD Simulation of Electromagnetic Radiation from Vertical Dipoles in Inhomogeneous Air-lossy Medium Space Paran, K.; Kamyab, M.
08:50	UWB 4-2	Enhanced Electromagnetic Field Analysis with the Finite Integration Technique Balk, M.; Weiland, T.
09:10	UWB 4-3	Solving Time Domain Electric Field Integral Equation for Thin-wire Antennas using the Laguerre Polynomials Ji, Z.; Sarkar, T. K.; Jung, B. H.; Salazar-Palma, M.
09:30	UWB 4-4	Fast Time Domain Integral Equation Solver for Dispersive Media Bleszynski, E.; Bleszynski, M.; Jaroszewicz, T.

HPEM 8: Antennas (Part 1) G29-307 08:30 – 09:50**Chaired by: F. Sabath, L. Cohen**

08:30	HPEM 8-1	Coupling Between Antennas in a Complex and Electrically Large Environment Adam, J. P.; Geiswiler, J.; Béniguel, Y.
08:50	HPEM 8-2	High Directivity Beam-Forming for Short-Pulse Arrays Foo, S.; Kashyap, S.
09:10	HPEM 8-3	Optimization of Circularly Polarized Radiation of a Tilted Electric Dipole with Rectangular Screen Yeliseyeva, N. P.; Gorobets, N. N.
09:30	HPEM 8-4	A Plasma Antenna for Magnetic Explosion Generators Soshenko, V. A.; Vyazmitinov, I. A.; Puzanov, O. O.; Sinkov, V. V.; Novikov, V. E.

UWB 5: Target Detection & Discrimination (Part 1) G22A-013 08:30 – 09:50**Chaired by: A. Tjihuis, A. Yarovoy**

08:30	UWB 5-1	A Group Theoretical Symmetry Filter for Discrimination of Landmines in the Subsurface Phelan, M.; Gilmore, C.; Jeffrey, I.; Su, H.; LoVetri, J.
08:50	UWB 5-2	Detection and Classification of Targets Behind Walls Chamma, W. A.; Gauthier, S. S.; Kashyap, S.
09:10	UWB 5-3	Application of UWB Near-field Polarimetry to Classification of GPR Targets Yarovoy, A.; Kovalenko, V.; Roth, F.; Ligthart, L. P.
09:30	UWB 5-4	Ultra Wideband Radar for the Search of Avalanche Victims Chamma, W. A.; Mende, H.; Robinson, R.

HPEM 9: Nonlinear Dynamics and Chaos (Part 1) G22A-020 08:30 – 09:50**Chaired by: T. Andreadis, I. Magda**

08:30	HPEM 9-1	Interaction of Microwave with a Stochastic Jumping Phase (MSJP) with Overdense Plasmas or Gases and Electron Collisionless Heating by it Karas', V. I.; Fainberg, Y. B.; Artamoshkin, A. M.; Bingham, R.; Lontano, M.; Levchenko, V. D.; Potapenko, I. F.; Starostin, A. N.
08:50	HPEM 9-2	Intense Electromagnetic Field Interaction with Charged Particles Buts, V. A.
09:10	HPEM 9-3	Stochastic Heating Buts, V. A.
09:30	HPEM 9-4	Nonresonant Interaction of Electromagnetic Waves with Charged Particles Buts, V. A.

UWB 6: Applications of Hyperband Systems and Antennas (Part 1) G22A-120 08:30 – 09:50**Chaired by: F. Sabath, D. Giri**

08:30	UWB 6-1	Measurement of the Pulse Radiation of an IRA in Time Domain Stadtler, T.; ter Haseborg, J. L.; Sabath, F.
08:50	UWB 6-2	Antenna Development for Impulse Radar Applications in Civil Engineering Maierhofer, C.; Kind, T.; Wöstmann, J.; Wiggenhauser, H.
09:10	UWB 6-3	Broad-Band Antenna Characterization for Landmine detection Sato, M.; Savelyev, T.; Kobayashi, T.
09:30	UWB 6-4	Through-the-Wall Imaging using Impulse SAR Tatoian, J.; Franceschetti, G.; Giri, D.; Gibbs, G.

HPEM 10: Lightning - Measurement and Simulation (Part 1) G22A-122 08:30 – 09:50**Chaired by: R. Thottappillil, G. Diendorfer**

08:30	HPEM 10-1	A Study of Conventional Protector Stability to Direct Lightning Strikes Kouprienko, V. M.
08:50	HPEM 10-2	A Simple Model of Repeating Lightning-Leader Pulses Baum, C. E.
09:10	HPEM 10-3	Shielding Characteristics of Transmission Lines: Analysis with a Leader Progression Model Yamada, K.; Ebinuma, Y.; Shindo, T.
09:30	HPEM 10-4	On the Enhancement of Electric and Magnetic Fields from Lightning due to Close-by Metallic Structures Bermudez, J.-L.; Gazizov, T.; Negodyaev, A.; Pavanello, D.; Rachidi, F.; Rubinstein, A.; Rubinstein, M.

HPEM 7: Biological Effects and Medical Application (Part 2) G26-H1 10:30 – 11:50**Chaired by: M. Risling**

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| 10:30 | HPEM 7-5 | Electromagnetic Compatibility in the Medical Facility Environment with UWB Deployments
Cohen, L. S.; Polisky, L. E. |
| 10:50 | HPEM 7-6 | Stress Cellular Response Induced by Weak Microwave Irradiation
Glushkova, O. V.; Novoselova, E. G.; Sinotova, O. A. |
| 11:10 | HPEM 7-8 | Cytokines and Nitric Oxide Production in Immune Cells
Sinotova, O. A.; Novoselova, E. G.; Glushkova, O. V. |
| 11:30 | HPEM 7-7 | Apparatus for Broadband Electromagnetic Pulse Therapy - Principle of Operation, Design and Results of Clinical Approbation
Boyko, M. I.; Bortsov, A. V.; Safronov, I. A. |

UWB 4: Time-Domain Computation Techniques (Part 2) G22A-H2 10:30 – 11:50**Chaired by: T. Sarkar, U. Schenk**

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| 10:30 | UWB 4-5 | A Novel Technique for Accurate Simulation of Pulse Wave Scattering
Velychko, L.; Sirenko, Y. |
| 10:50 | UWB 4-6 | On the Efficient Time Domain Processing of Aperture Antennas
Marrocco, G.; Ciattaglia, M. |
| 11:10 | UWB 4-7 | The Influence of Multitone Disturbances on Nonlinear Systems
Bychkov, Y.; Nitsch, J.; Korovkin, N. V.; Scherbakov, S.; Diomkin, S.; Himeen, A. |
| 11:30 | UWB 4-8 | Suppression of Two-tone Disturbances in Nonlinear Circuits
Solvyeva, E.; Nitsch, J.; Korovkin, N. V. |

HPEM 8: Antennas (Part 2) G29-307 10:30 – 11:50**Chaired by: F. Sabath, L. Cohen**

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| 10:30 | HPEM 8-5 | Introduction to IRAs
Kohlberg, I.; Baum, C. E. |
| 10:50 | HPEM 8-6 | Calibration of a Wideband Hybrid Antenna
Stecher, M.; Klos, B. |
| 11:10 | HPEM 8-7 | Environmental Electromagnetic Fields Produced by Antennas
Singh, H.; Kohlberg, I.; Moore, H.; Boezer, G.; Sarjeant, J. |
| 11:30 | HPEM 8-8 | Pattern Reconfigurable Antenna Design by Using FDTA Method with Floquet's Boundary Condition
Xiao, S.; Yu, C.; Wang, B.-Z. |

UWB 5: Target Detection & Discrimination (Part 2) G22A-013 10:30 – 11:50**Chaired by: A. Tjihuis, A. Yarovoy**

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| 10:30 | UWB 5-5 | Radar Target Detection at Noise and Clutter Background
Koshelev, V. I.; Sarychev, V. T.; Shipilov, S. E. |
| 10:50 | UWB 5-6 | Comparison of Seismic Migration and Stripmap SAR Imaging Methods for GPR Landmine Detection
Gilmore, C.; Su, H.; Jeffrey, I.; Phelan, M.; LoVetri, J. |
| 11:10 | UWB 5-7 | Target Detection and Imaging Using Time-Domain Measurements of Ultra-Wideband Signals
Chen, B.; Cui, H.-L.; Huang, X.; Pastore, R. |
| 11:30 | UWB 5-8 | Ultra Wideband Impulse Radar Data Exploitation
Barrie, G. |

HPEM 9: Nonlinear Dynamics and Chaos (Part 2) G22A-020 10:30 – 11:50**Chaired by: T. Andreadis, I. Magda**

10:30	HPEM 9-5	Super-High Harmonic Excitation by Nonrelativistic Oscillators Buts, V. A.
10:50	HPEM 9-6	Stability of Stationary States and Nonlinear Chaotic Modes in Generators with Virtual Cathode and Feedback Novikov, V. E.; Magda, I. I.; Paschenko, A. V.; Romanov, S. S.; Shapoval, I. M.
11:10	HPEM 9-7	Nonlinear and Chaotic Modes of Oscillations Arising at Propagation of Short Pulses on Non-Uniform Transmission Lines Novikov, V. E.; Magda, I. I.; Paschenko, A. V.; Shapoval, I. M.
11:30	HPEM 9-8	Peculiarities of Particles Motion at Passing Through Stochastic Layer Buts, V. A.; Tolstoluzhsky, A. P.

UWB 6: Applications of Hyperband Systems and Antennas (Part 2) G22A-120 10:30 – 11:50**Chaired by: F. Sabath, D. Giri**

10:30	UWB 6-5	High-Power Microwave System for Stopping Vehicles Tatoian, J.; Giri, D.; Franceschetti, G.; Gibbs, G.
10:50	UWB 6-6	UWB Antenna for Artillery Applications Herlemann, H.; Koch, M.; Sabath, F.
11:10	UWB 6-7	The Application of Wire-Loop Antennas in High-speed UWB Links Krishnan, S.; Li, L.-W.; Leong, M.-S.
11:30	UWB 6-8	Coupled Transmission Lines as a Time-Domain Directional Coupler Baum, C. E.

HPEM 10: Lightning - Measurement and Simulation (Part 2) G22A-122 10:30 – 11:50**Chaired by: R. Thottappillil, G. Diendorfer**

10:30	HPEM 10-5	The Effect of the Measurement Time Constant of Analog Integrators on the Resulting Modeling and Simulation of Lightning Rubinstein, M.; Pavanello, D.; Bermudez, J.-L.; Rachidi, F.; Janischewskyj, W.; Hussein, A. M.; Shostak, V.
10:50	HPEM 10-6	Electromagnetic Environment in the Immediate Vicinity of a Tower Struck by Lightning Pavanello, D.; Rachidi, F.; Rubinstein, M.; Theethayi, N.; Thottappillil, R.
11:10	HPEM 10-7	Lightning Currents Measured at the Peissenberg Telecommunication Tower between 1992 and 1999 Heidler, F.
11:30	HPEM 10-8	Lightning Peak Current Statistics Derived from Lightning Location System Data Diendorfer, G.

HPEM 7: Biological Effects and Medical Application (Part 3) G26-H1 13:30 – 14:50**Chaired by: M. Risling**

13:30	HPEM 7-9	Medical Application of Noise Radiation of IMPATT Diode Savenko, Y.; Zinkovskiy, Y.; Pravda, V.; Bogomolov, N.
13:50	HPEM 7-10	Correction of Immunopatology by Low-Intensity Electromagnetic Microwave Glushkova, O. V.; Novoselova, E. G.
14:10	HPEM 7-11	Microwave Effects on Gene Expression in Connection to Chromosome Conjugation Shckorbatov, Y. G.
14:30	HPEM 7-12	Changes in Mice Exploratory Activity Induced by Low-Level Microwave Exposure Goiceanu, C.; Balaceanu, G.; Danulescu, R.; Gradinaru, F.; Sandu, D. D.

UWB 7: Time-Domain Techniques for the Transient Analysis of Complex Problems (Part 1) G22A-H2 13:30 – 14:50**Chaired by: A. Rubio Bretones, G. Garcìa**

13:30	UWB 7-1	Unified Framework for Numerical Methods to Solve the Maxwell Equations de Raedt, H.; Michielsen, K.; Figge, M. T.
13:50	UWB 7-2	A Hybrid Time-Domain Technique that Combines ADI-FDTD and MoMTD to Solve Complex Electromagnetic Problems Garcia, S. G.; Bretones, A. R.; Rubio, R. G.; Pantoja, M. F.; Martin, R. G.
14:10	UWB 7-3	Unconditionally Stable ADI Finite-Difference Time-Domain Method for Bioelectromagnetic Problems Schmidt, S.; Lazzi, G.
14:30	UWB 7-4	Modeling Propagation of Time-domain Pulses in Cole-Cole Dielectrics Petrooulos, P. G.

HPEM 8: Antennas (Part 3) G29-307 13:30 – 14:10**Chaired by: F. Sabath, L. Cohen**

13:30	HPEM 8-9	Analysis of 4 Element Array Antenna of Stacked Patches Pandey, V. K.; Vishvakarma, B. R.
13:50	HPEM 8-10	The Study of Slot Loaded Patch Antenna Shivnarayan, ; Vishvakarma, B. R.

UWB 5: Target Detection & Discrimination (Part 3) G22A-013 13:30 – 14:50**Chaired by: A. Tjihuis, A. Yarovoy**

13:30	UWB 5-9	Reduction of Clutter in GPR Data by CROW-Search Technique Kovalenko, V.; Yarovoy, A.; Lighthart, L. P.
13:50	UWB 5-10	Echo Cancellation using the Homomorphic Deconvolution Choi, W.; Sarkar, T. K.
14:10	UWB 5-11	Combining Polarimetry with SEM in Radar Backscattering for Target Identification Baum, C. E.
14:30	UWB 5-12	Substructure SEM Baum, C. E.

HPEM 9: Nonlinear Dynamics and Chaos (Part 3)**G22A-020 13:30 – 14:50****Chaired by: T. Andreadis, I. Magda**

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| 13:30 | HPEM 9-9 | Un-Linear Processes in the System “ Ferroelectric Working Body – Spiral MCG - Capacitive Load”
Tret'yakov, D.; Adzhiev, A. H.; Soukatchev, A. |
| 13:50 | HPEM 9-10 | Self-Modulation and Chaos in a Free Electron Laser with Electromagnetic Pumping
Dmitrieva, T.; Ryskin, N. |
| 14:10 | HPEM 9-11 | Problems of Modeling Communication Channels Under Influence of Electromagnetic Fields with Chaotic Spectrum
Leonov, S. J.; Dmitrienko, V. D.; Serkov, A. A. |
| 14:30 | HPEM 9-12 | Techniques for Maintaining Survivability of Electronic Systems Under Electromagnetic Interference of Chaotic Spectrum
Serkov, A. A.; Kravchenko, V. I. |

HPEM 11: Measurement Techniques (Part 1)**G22A-120 13:30 – 14:50****Chaired by: Z. Kancleris, M. Dagys**

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| 13:30 | HPEM 11-1 | Low Invasiveness, High-Bandwidth Vectorial Pigtailed Electro-Optic Sensors for High Power Electromagnetics Measurements
Gaborit, G.; Duvillaret, L.; Breuil, N.; Crabos, B.; Lasserre, J.-L. |
| 13:50 | HPEM 11-2 | High-Sensitivity Electro-Optic Sensors
Wu, D. H.; Wieting, T. J.; Garzarella, A.; Qadri, S. B.; Kendziora, C. |
| 14:10 | HPEM 11-3 | Wide-Band Coaxial-Type Resistive Sensor for HPM Pulse Measurement
Dagys, M.; Kancleris, Z.; Simniikis, R.; Schamiloglu, E.; Agee, F. J. |
| 14:30 | HPEM 11-4 | Characterization of High-Power Pulse Sources with the EMIR Method
Levesque, P.; Lasserre, J.-L.; Paupert, A. |

HPEM 10: Lightning - Measurement and Simulation (Part 3)**G22A-122 13:30 – 15:10****Chaired by: R. Thottappillil, G. Diendorfer**

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| 13:30 | HPEM 10-9 | On Determining the Effective Height of Gaisberg Tower
Theethayi, N.; Diendorfer, G.; Thottappillil, R. |
| 13:50 | HPEM 10-10 | Airbus-A380 Rear Fuselage Induced Lightning Current Simulations
Ritter, J.; Lotz, R.; Ristau, D.; Krüger, H.-W. |
| 14:10 | HPEM 10-11 | Lightning Test and Protection of Aircraft Radome
Nordström, B. |
| 14:30 | HPEM 10-12 | Modelling of the Lightning Swept Stroke During Strikes to Aircraft
Larsson, A. |
| 14:50 | HPEM 10-13 | Transient Voltages Induced in Signal Lines by Direct Lightning Strikes on the High Voltage Substations
Sowa, A.; Wiater, J. |

HPEM 7: Biological Effects and Medical Application (Part 4) G26-H1 15:30 – 16:30**Chaired by: M. Risling**

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| 15:30 | HPEM 7-13 | Scientific Progress with the Effects of High-Power Millimeter Waves upon Tissue, Organs, and Behavior
Scholl, D. M. |
| 15:50 | HPEM 7-14 | Effects of GSM and UMTS-like Basestation Fields on Human Cognitive Functions and Experienced Well-being
Zwamborn, A. P. M.; van Rongen, E. |
| 16:10 | HPEM 7-15 | Polyfrequency Signal Activity. Theoretical Approach.
Ponomarev, V. O.; Karnaukhov, A. V.; Novikov, V. V. |

UWB 7: Time-Domain Techniques for the Transient Analysis of Complex Problems (Part 2) G22A-H2 15:30 – 16:30**Chaired by: A. Rubio Bretones, G. Garçà**

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| 15:30 | UWB 7-5 | Accuracy and Application of a Stable FDTD-TDFEM Hybrid
Rylander, T.; Bondeson, A.; Liu, Y. |
| 15:50 | UWB 7-6 | Efficient FDTD Parallel Processing on Modern PC CPUs
Simon, W.; Lauer, A.; Manteuffel, D.; Wien, A.; Wolff, I. |
| 16:10 | UWB 7-7 | UWB Radio Link Modeling in Indoor Environment
Uguen, B.; Talom, F. T. |

HPEM 12: Simulators and Simulation Techniques (Part 1) G29-307 15:30 – 17:30**Chaired by: B. Kerr, D. Serafin**

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| 15:30 | HPEM 12-1 | Methods and Setups for Testing the Effects of High Power Electromagnetic Pulse Radiation
Kouprienko, V. M. |
| 15:50 | HPEM 12-2 | Up Grade of an 350 kV NEMP HPD Pulser to 1.2 MV
Jung, M.; Weise, T.; Nitsch, D.; Braunsberger, U. |
| 16:10 | HPEM 12-3 | CEG HPM Test Facilities
Chevalier, B.; Sallas, J.; Ringuet, O.; Tarayre, J. |
| 16:30 | HPEM 12-4 | Construction and Characterization of a Table-Top Mode-Stirred Chamber
Plate, S.; Krauthäuser, H. G.; Nitsch, J. |
| 16:50 | HPEM 12-5 | A Coaxial to Waveguide Adaptor Using a Tapered Post and a Disc-Ended Probe
Biglarbegian, B.; Fallahi, R.; Dadashzadeh, G.; Hakkak, M. |
| 17:10 | HPEM 12-6 | Instrumental Tool for System Design and Simulation
Losich, V. A.; Trigubovich, V. B. |

HPEM 13: High Intensity Radiated Fields (Part 1) G22A-013 15:30 – 17:30**Chaired by: N. Carter, D. Jäger**

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| 15:30 | HPEM 13-1 | HIRF Testing of Military A/C in a Large MSC
Schultz, S.; Rothenhäusler, M.; Werner, H. |
| 15:50 | HPEM 13-2 | From Cubic Faraday Cage to HIRF Testing Reverberation Chamber
Piette, M. |
| 16:10 | HPEM 13-3 | Numerical Simulation of Real Antenna Scenario in HIRF Environment
Meier, M.; Rothenhäusler, M. |
| 16:30 | HPEM 13-4 | Laboratory Methods to Radiate High Power, Circularly Polarized Waveforms
McVeety, T.; Courtney, C.; Voss, D. |
| 16:50 | HPEM 13-5 | Low Level Swept Techniques and Convolution with Time Domain Environments
Wraight, A.; Hoad, R.; Morrow, I. |
| 17:10 | HPEM 13-6 | Functional Susceptibility Evaluation of Warfare System to HIRF by Global Illumination (10kHz-18GHz)
Saïdani, A.; Cantaloube, M. |

HPEM 9: Nonlinear Dynamics and Chaos (Part 4)**G22A-020 15:30 – 17:10****Chaired by: T. Andreadis, I. Magda**

15:30	HPEM 9-13	Analysis of Chaos in a Simple Resonant Circuit Crevier, W.
15:50	HPEM 9-14	Theoretical and Experimental Research of Chaotic Dynamics and Structure Formation in Electron Beams with Virtual Cathode Hramov, A. E.; Kalinin, Y. A.; Koronovskiy, A. A.; Trubetskov, D. I.
16:10	HPEM 9-15	Investigation of Chaotic Synchronization of Two Coupled Backward-Wave Oscillators Koronovskiy, A. A.; Hramov, A. E.
16:30	HPEM 9-16	Reduction of the Three-Wave Decay Threshold Depending on the Multiplicity Passage of the Stochastic Layer Lapin, V. G.; Yashina, N. F.
16:50	HPEM 9-17	Analysis of the Adequacy of EMP Simulation Vavriv, L. V.; Serebyrannikov, A. E.

HPEM 11: Measurement Techniques (Part 2)**G22A-120 15:30 – 16:50****Chaired by: Z. Kancleris, M. Dagys**

15:30	HPEM 11-5	Infrared Imaging to Map Power on Target for a Millimeter Wave Source Wilbanks, M. W.; Patterson IV, G. L. P.; Pohle, H.; Clark III, W. T. C.
15:50	HPEM 11-6	Questions of Metrological Maintenance of Measuring and the Check of Parameters of Electromagnetic Impulses of Major Energy Danilenko, K.; Mitrofanov, A.; Molochkov, V. F.; Siny, L.
16:10	HPEM 11-7	Simple Procedure for the Extraction of the Complex Cable Transfer Impedance of Coaxial Cables Sawitzki, A.; Gonschorek, K.-H.
16:30	HPEM 11-8	Characterization of Antennas and Wireless Terminals in Loaded Reverberation Chambers Carlsson, J.; Kildal, P.-S.

UXO 2: Soil, Clutter, and Discrimination (Part 1)**G22A-122 15:30 – 16:50****Chaired by: A. Gregorovic**

15:30	UXO 2-1	Developmental Test Design to Evaluate System Performance Dean, A.
15:50	UXO 2-2	Discrimination of UXO in a Clutter-rich Environment using EMI Data Collins, L.; Hu, W.; Schofield, D.; Carin, L.
16:10	UXO 2-3	Soil Ground Reference Height and Frequency-dependent Magnetic Susceptibility of Soil Gregorovic, A.; Lewis, A. M.; Bloodworth, T. J.
16:30	UXO 2-4	The Possibility of the Determination of Complex Permittivity of Early Age Loss Samples for Industrial Based Applications by using Microwave Free-space Method Hasar, U. C.; Dover, S.; Kharkovsky, S. N.

PS: Plenary Session (Part 1)**G26-H1 08:30 – 10:00****Chaired by: T. Wieting, D. McLemore**

08:30	PS-1	“...it is now discovered and demonstrated, both here and in Europe, that the Electrical Fire is a real Element, or Species of Matter, not <i>created</i> by the Friction, but <i>collected</i> only.” Thoughts on the Fundamentals of Electromagnetics Hehl, F. W.
09:00	PS-2	New developments on integral equation based methods Sarkar, T.
09:30	PS-3	JOLT: A Highly Directive, Very Intensive, Impulse-Like Radiator Giri, D. V.

PS: Plenary Session (Part 2)**G26-H1 10:30 – 12:00****Chaired by: T. Wieting, D. McLemore**

10:30	PS-4	Survey of Ultrawideband Radar Mokole, E. L.
11:00	PS-5	Application of HPM-Technology for Protective Measures Bohl, J.
11:30	PS-6	Nonlinear Effects (Chaos) in Circuits Due to Out-Of-Band RadioFrequencies Waveforms Andreadis, T. D.

Lunch Break**12:00–13:30**

UWB 8: UWB Antennas (Part 1)**G26-H1 13:30 – 14:50****Chaired by: S. Tyo, E. Farr**

13:30	UWB 8-1	Transmission and Reception by UWB Antennas in Time Domain Ghosh, D.; Sarkar, T. K.
13:50	UWB 8-2	Analysis of Transient Radiation from a Dielectric Wedge Antenna Yarovoy, A.
14:10	UWB 8-3	A Lens TEM Horn with an Artificial Dielectric Bigelow, W. S.; Farr, E. G.; Bowen, L. H.; Ellibee, D. E.; Lawry, D. I.
14:30	UWB 8-4	Partial Dielectric Loaded TEM Horn Design for Ultra Wide Band Ground Penetrating Impulse Radar Systems Turk, A. S.; Sahinkaya, D. S. A.

HPEM 14: IEMI Protection Methods (Part 1)**G22A-H2 13:30 – 14:50****Chaired by: W. Radasky, M. Wik**

13:30	HPEM 14-1	Protection Approach for Commercial Buildings against Intentional Electromagnetic Interference (IEMI) Radasky, W. A.
13:50	HPEM 14-2	Technical Means to Study an Immunity of Infrastructure Objects to Intentional Electromagnetic Interference Siniy, L. L.; Efanov, V.; Fortov, V.; Parfenov, Y. V.; Zdoukhov, L.
14:10	HPEM 14-3	Research Concerning the Influence of Ultrawideband (UWB) Electromagnetic Fields on Electronic Cash Machines Parfenov, Y. V.; Zdoukhov, L.; Radasky, W. A.
14:30	HPEM 14-4	Electromagnetic Interference Related Susceptibility of COTS Network Components Hoad, R.; Herke, D.; Watkins, S. P.

UWB 9: UWB Radar Systems (Part 1)**G29-307 13:30 – 14:50****Chaired by: J. Sachs, E. Mokole**

13:30	UWB 9-1	Through-Wall Imaging by means of UWB Radar Zetik, R.; Sachs, J.; Peyerl, P.
13:50	UWB 9-2	Analyzing the Target Recognition Capability of an Ultra-Wideband Radar System Using Time Frequency Algorithms Oßberger, G.; Buchegger, T.; Schimbäck, E.; Stelzer, A.; Weigel, R.
14:10	UWB 9-3	Advances in Ground Penetrating Radar (GPR) For Landmine Detection Weaver, R.
14:30	UWB 9-4	UWB Radar System Sensing of Human Being Buried in Rubbles for Earthquake Disaster Akiyama, I.; Araki, Y.; Isozaki, M.; Ohki, M.; Ohya, A.

UXO 3: UXO & Landmines: Detection, Identification, and Neutralization (Part 1)**G22A-013 13:30 – 14:50****Chaired by: H. Spitzer, U. Böttger**

13:30	UXO 3-1	Quadrupole Terms in Magnetic Singularity Identification, Part 2 Baum, C. E.
13:50	UXO 3-2	EMI Sensor Optimized for UXO Discrimination Riggs, L.; Chilaka, S.; Faircloth, D.; Nelson, H.; Bell, T.; Kingdon, J.; Collins, L.
14:10	UXO 3-3	SAR-GPR System for Landmine Detection and its Evaluation Kobayashi, T.; Feng, X.; Savelyev, T.; Sato, M.
14:30	UXO 3-4	Adaptive Feature-based GPR Signal Processing for Landmine Detection Throckmorton, C.; Torrione, P.; Collins, L.; Lee, W.-H.; Grandhi, R.; Wilson, J.; Gader, P.; Starnes, I.; Frasier, S.; Clodfelter, F.

Coffee Break**14:50–15:30**

HPEM 9: Nonlinear Dynamics and Chaos (Part 5)**G22A-020 13:30 – 14:50****Chaired by: T. Andreadis, I. Magda**

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| 13:30 | HPEM 9-18 | Effects of Production of Electrodynamical Fractal Structures and Extreme Fields in Beam-Plasma Systems under Pulsed Beam Action
Paschenko, A. V.; Adamenko, S. V.; Novikov, V. E.; Shapoval, I. M. |
| 13:50 | HPEM 9-19 | A Model of Non-Thermal Action of a Complex Sequence of Short Electric Pulses on Physical Properties of Oils on the Base of Non-Linear Dynamics of Molecules and Transmission Lines
Novikov, V. E.; Rozdestvenskiy, V. A.; Naboka, A. M.; Magda, I. I.; Paschenko, A. V.; Klepikov, V. F.; Litvinenko, V. I. |
| 14:10 | HPEM 9-20 | Universal Impedance Statistics of Metallic Enclosures
Anlage, S. M.; Hemmady, S.; Zheng, X.; Ott, E.; Antonsen, T. M. |
| 14:30 | HPEM 9-21 | Chaos in Driven Diode and Electrostatic Discharge Protection Circuits
Anlage, S. M.; Firestone, T. M.; Rodgers, J.; Ott, E.; Antonsen, T. M. |

HPEM 11: Measurement Techniques (Part 3)**G22A-120 13:30 – 14:50****Chaired by: Z. Kancleris, M. Dagys**

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| 13:30 | HPEM 11-9 | Evaluation of Stirrer Efficiency in Reverberation Chambers
Lundén, O.; Wellander, N.; Bäckström, M. |
| 13:50 | HPEM 11-10 | Determination of the Number of Statistically Independent Boundary Conditions of Mode-Stirred Chambers
Krauthäuser, H. G.; Winzerling, T.; Nitsch, J.; Eulig, N.; Enders, A. |
| 14:10 | HPEM 11-11 | Parametric Characterization of Reverberation Chambers: A Review
Piette, M. |
| 14:30 | HPEM 11-12 | Influence of Equipment Set-up and Directivity Radiating in Mode Stirred Reverberation Chamber
Maridet, A.; Paladian, F.; Mangeant, F. |

HPEM 15: Space Weather and Geomagnetic Storms (Part 1)**G22A-122 13:30 – 15:10****Chaired by: R. Pirjola, H. Lundstedt**

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| 13:30 | HPEM 15-1 | Space Weather Risk
Pirjola, R.; Kauristie, K.; Lappalainen, H.; Viljanen, A.; Pulkkinen, A. |
| 13:50 | HPEM 15-2 | Discovering Temporal Patterns from Events and other Multivariate Data
Nuñez, M.; Fidalgo, R.; Morales, R. |
| 14:10 | HPEM 15-3 | Further Studies in the Enhancement of Electric Fields Near Oceanic Boundaries
Gilbert, J. |
| 14:30 | HPEM 15-4 | Real-Time Forecast Service for Geomagnetically Induced Currents
Lundstedt, H.; Wintoft, P.; Wik, M.; Eliasson, L. |
| 14:50 | HPEM 15-5 | Electromagnetic Research as Input to Space Weather Monitoring
Korepanov, V. |

UWB 8: UWB Antennas (Part 2)**G26-H1 15:30 – 16:50****Chaired by: S. Tyo, E. Farr**

15:30	UWB 8-5	A Dual-Polarity Impulse Radiating Antenna Bowen, L. H.; Farr, E. G.; Lawry, D. I.
15:50	UWB 8-6	Effect of Reflector Defocus on the Radiation Patterns of Impulse Radiating Antennas Tyo, J. S.; Farr, E. G.; Lawry, D. I.
16:10	UWB 8-7	Characterization of the Radiation Pattern of Reflector IRAs by Time Domain Measurement Techniques Schulze, S.; Krauthäuser, H. G.; Nitsch, J.
16:30	UWB 8-8	Directivity of Parachute Antennas for Microwave Weapons Schenk, U.

HPEM 14: IEMI Protection Methods (Part 2)**G22A-H2 15:30 – 16:50****Chaired by: W. Radasky, M. Wik**

15:30	HPEM 14-5	The Impact of HIPDI as Related to 100BaseTx Ethernet Jeffrey, I.; Gilmore, C.; LoVetri, J.
15:50	HPEM 14-6	Electromagnetic Protection – Shielding Specification Techniques and Measurement Methods Prather, W. D.
16:10	HPEM 14-7	Response of Surge Protective Devices to Very Fast Transient Conducted Pulses Thottappillil, R.; Montano, R.; Månsson, D.
16:30	HPEM 14-8	UG Filtering - An Effective Technology Against IEMI and HPM Recht, E.; Naxon, T.; Cohen, A.

UWB 9: UWB Radar Systems (Part 2)**G29-307 15:30 – 16:30****Chaired by: J. Sachs, E. Mokole**

15:30	UWB 9-5	UWB Radar System for ISAR Imaging Levitas, B.; Matuzas, J.
15:50	UWB 9-6	A High-Voltage UWB Directional Coupler for Radar Farr, E. G.; Atchley, L. M.; Ellibee, D. E.; Baum, C. E.; Lawry, D. I.
16:10	UWB 9-7	UWB Full-Polarimetric Video Impulse Radar for Landmine Detection Yarovoy, A.; Schukin, A.; Kaploun, I.; Ligthart, L. P.

UXO 3: UXO & Landmines: Detection, Identification, and Neutralization (Part 2)**G22A-013 15:30 – 16:30****Chaired by: H. Spitzer, U. Böttger**

15:30	UXO 3-5	Buried Landmine Detection using Spectral Radiometric Microwave Signatures von Chiari, M.; Dill, S.; Peichl, M.; Süß, H.
15:50	UXO 3-6	Standoff Mine Neutralization Technologies and Techniques Sherbondy, K.
16:10	UXO 3-7	Active EM System for Detection of UXO in Urban Area Dudkin, F.; Korepanov, V.

HPEM 9: Nonlinear Dynamics and Chaos (Part 6)**G22A-020 15:30 – 16:50****Chaired by: T. Andreadis, I. Magda**

15:30	HPEM 9-22	Numerical Model of Electromagnetic Wave Interaction with Longitudinal Oscillations of Plasma Spitsyn, V. G.
15:50	HPEM 9-23	Modeling and Measurements of the Linsay Circuit and the Phase-Locked Loop Bacon, L. D.; Salazar, R. A.; Molina, L. L.; Loubriel, G. M.; Patterson, P. E.
16:10	HPEM 9-24	Basic Research in Nonlinear Circuit Response From Electromagnetic Interference* Gaudet, J. A.; Harrison, M. G.; Anlage, S. M.; Lai, Y. C.
16:30	HPEM 9-25	Nonlinear Effects in Ionosphere in the Field Gutman, A. L.; Manko, A. N.

HPEM 11: Measurement Techniques (Part 4)**G22A-120 15:30 – 16:50****Chaired by: Z. Kancleris, M. Dagys**

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| 15:30 | HPEM 11-13 | Comparison Between Experimental and Numerical Modelizations of a Mode-Stirred Reverberation Chamber
Vernet, R.; Girard, S.; Maridet, A.; Bonnet, P.; Paladian, F. |
| 15:50 | HPEM 11-14 | Shielded Closed HIRF/EMC Facility
Bertino, I.; D'Urso, M. |
| 16:10 | HPEM 11-15 | Simple Measurement Techniques for the Shielding Effectiveness of Symmetric Enclosures
Paoletti, U.; Garbe, H.; John, W. |
| 16:30 | HPEM 11-16 | Experimental Test of Signal Classes Identification
Ibatoulline, E. A.; Amro, A. M. |

HPEM 15: Space Weather and Geomagnetic Storms (Part 2)**G22A-122 15:30 – 16:50****Chaired by: R. Pirjola, H. Lundstedt**

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| 15:30 | HPEM 15-6 | Coordinated Approach to Investigation of Space Weather Effects on Human Health and on Biological Systems on Earth.
Cermack, M.; Atkov, O.; Favre, R.; Jansen, F.; Palmer, S.; Pirjola, R.; Rycroft, M. |
| 15:50 | HPEM 15-7 | Spherical Model of Generation of Geomagnetic Perturbations on the Earth's Surface from High Energy Sources
Matronchik, A. Y. |
| 16:10 | HPEM 15-8 | Geophysical Plasma Generation Inside Energy Active Zones
Protasevich, E. |
| 16:30 | HPEM 15-9 | The Ionospheric-Magnetospheric Alfvén Resonator (IMAR) in the Case of a Dipole Geomagnetic Field
Ovchinnikov, A. |

HPEM 16: High Power RF Source Technology (Part 1)**G26-H1 08:30 – 09:50****Chaired by: A. Didenko**

08:30	HPEM 16-1	DIEHL High-Power RF Source Development Staines, D. G.; Urban, D. J.
08:50	HPEM 16-2	HPM Resonators for Indirect Deployment Urban, J.; Staines, G.; Stark, R. H.; Bohl, J.
09:10	HPEM 16-3	Vircator: Status and Perspective. Didenko, A. N.
09:30	HPEM 16-4	Measurement of Reflection and Transmission Properties of Fresh Cement-Based Materials by Using Free-Space Method Kharkovsky, S. N.; Atis, C. D.; Hasar, U. C.; Dover, S.

UWB 8: UWB Antennas (Part 3)**G22A-H2 08:30 – 09:50****Chaired by: S. Tyo, E. Farr**

08:30	UWB 8-9	Resistively Loaded Discones for UWB Communications Bowen, L. H.; Farr, E. G.
08:50	UWB 8-10	Small and Broadband Planar Antennas for UWB Radio Applications Chen, Z. N.
09:10	UWB 8-11	Antipodal Vivaldi Antenna for UWB Applications Qing, X.; Chen, Z. N.
09:30	UWB 8-12	Extending the Bandwidth of Printed Monopole Antennas Dissanayake, T.; Esselle, K.

**HPEM 17 Susceptibility of Components and Electrical
UWB 10: Circuits (Part 1)****G29-307 08:30 – 09:50**

(organized by the IEEE German EMC Chapter)

Chaired by: F. Sonnemann, M. Rothenhäusler

08:30	HPEM 17-1 UWB 10-1	Influence of the Repetition Rate of a Recurrent HPM Perturbing Signal on the Behaviour of a Duffing Oscillator Rabaste, J.; Demko, M.
08:50	HPEM 17-2 UWB 10-2	The Effects and Diagnostic Uses of the Interaction of Radio Frequency Electromagnetic Radiation with Digital Electronic Systems Marvin, A. C.; Flintoft, I. D.; Robinson, M. P.; Fischer, K.
09:10	HPEM 17-3 UWB 10-3	HPM Susceptibility of Electronic Circuit Boards Chevalier, B.; Martin, M.; Brette, R.
09:30	HPEM 17-4 UWB 10-4	Study of HPM Effect on Electronics: Parasitic Reset Chevalier, B.; Hoffmann, P.; Sonnemann, F.

UWB 11: Short-Pulse Measurement Techniques (Part 1)**G22A-013 08:30 – 09:50****Chaired by: T. Ehlen**

08:30	UWB 11-1	A Comparison of Two Sensors used to Measure High-voltage, Fast-risetime Signals in Coaxial Cable Farr, E. G.; Atchley, L. M.; Ellibee, D. E.; Carey, W. J.; Altgilbers, L. L.
08:50	UWB 11-2	Short Pulse Measurements by Field Sensors with Arbitrary Frequency Response Cerri, G.; Herlemann, H.; Primiani, V. M.; Garbe, H.
09:10	UWB 11-3	Time-domain Measurement of Electric Field Emitted from UWB Device within an Arbitrary Bandwidth by using the Complex Antenna Factor Ishigami, S.; Yamanaka, Y.
09:30	UWB 11-4	Measurement System for UWB Applications Levitas, B.; Martyanov, A.; Minin, A.

Coffee Break**09:50–10:30**

HPEM 18: Coupling to Structures & Cables (Part 1)**G22A-020 08:30 – 09:50****Chaired by: L. Jansson**

08:30	HPEM 18-1	Current Distribution in Parallel Wire-Shields Observing the Skin and Proximity Effect Varlamov, Y.; Nitsch, J.; Chechurin, V.; Korovkin, N. V.
08:50	HPEM 18-2	Analytical Solution for the Transfer Impedance of Cylindrical and Plane Parallel-Wire Shields Chechurin, V.; Nitsch, J.; Korovkin, N. V.; Varlamov, Y.
09:10	HPEM 18-3	EMP Coupling on Large Structures. Percaille, J.-P.; Kerhervé, E.; Pouget, I.
09:30	HPEM 18-4	Field Coupling to Printed-Circuit-Board Traces Measured in Reverberation Chamber Silfverskiöld, S.; Bäckström, M.; Lorén, J.

HPEM 19: Electromagnetic Compatibility (Part 1)**G22A-120 08:30 – 09:50****Chaired by: A. Enders, T. Leibl**

08:30	HPEM 19-1	Mitigation of Power Line Interference on Railroad Wayside Signal Systems Perala, R.; Macmillan, R.
08:50	HPEM 19-2	Filter Design Using the Parametric Resonance Phenomenon Adalev, A. S.; Korovkin, N. V.; Hayakawa, M.
09:10	HPEM 19-3	Optimisation of an EMP Test Facility for Large Systems Lange, T.; Löhning, G.; Koch, M.; Schwarz, H.
09:30	HPEM 19-4	Recursive Modeling of Coupling in TEM-Cells Using Fractional Derivative El Abbazi, A.; Haussy, B.; Ramdani, M.; Drissi, M.; Levant, J. L.

UWB 12: Applications of High-Power, Ultra-Wideband and Short-Pulse Electromagnetics to Homeland, Air & Missile Defence (Part 1)**G22A-122 08:30 – 09:50****Chaired by: A. Terzuoli**

08:30	UWB 12-1	Transient Responses of Short-pulse Signals in Scattering Problems Yuan, M.; Taylor, M. C.; Sarkar, T. K.
08:50	UWB 12-2	Radar Signal Polarization Structure Investigation for Object Recognition Koshelev, V. I.; Balzovsky, E. V.; Buyanov, Y. I.; Konkov, P. A.; Sarychev, V. T.; Shipilov, S. E.
09:10	UWB 12-3	Pole Estimation for Target Recognition via Late-time Transients Pascoe, K. J.; Wood, W. D.; Maybeck, P. S.; Wood, A. W.
09:30	UWB 12-4	100 GHz Broadband High Power Antennas Podgorski, A. S.

HPEM 16: High Power RF Source Technology (Part 2) G26-H1 10:30 – 11:30**Chaired by: A. Didenko**

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| 10:30 | HPEM 16-5 | About the Physical Effects VHF Radiation on Semiconductor Diodes
Didenko, A. N.; Shurenkov, V. V. |
| 10:50 | HPEM 16-6 | Application of High Power Microwaves Generated by a Coaxial 2D Bragg Free Electron Maser Driven by an Annular Electron Beam
Kerr, B. A.; Spark, S. N.; Cross, A. W.; Konoplev, I. V.; Phelps, A. D.; McGrane, P. |
| 11:10 | HPEM 16-7 | Novel Crossed-Field Tubes for Compact HPM Systems
Eastwood, J. W.; Hook, M. P. |

UWB 8: UWB Antennas (Part 4) G22A-H2 10:30 – 11:50**Chaired by: S. Tyo, E. Farr**

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| 10:30 | UWB 8-13 | A Coplanar Strip Antenna with Improved Matching
Butrym, A. Y.; Pivnenko, S. |
| 10:50 | UWB 8-14 | A Portable Automated Time-Domain Antenna Range - The PATAR(TM) System: Functions and Operation
Bigelow, W. S.; Bowen, L. H.; Farr, E. G.; Atchley, L. M.; Tran, T. C. |
| 11:10 | UWB 8-15 | Practical Implementation of PxM Antennas for High-Power Applications
McLean, J. S.; Sutton, R. |
| 11:30 | UWB 8-16 | Optical and Acoustic Pulse Radiation Antennas
Vyazmitinova, A.; Magda, I. I.; Pazynin, V. |

HPEM 17 Susceptibility of Components and Electrical UWB 10: Circuits (Part 2) G29-307 10:30 – 11:30

(organized by the IEEE German EMC Chapter)

Chaired by: F. Sonnemann, M. Rothenhäusler

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| 10:30 | HPEM 17-5
UWB 10-5 | Measuring the Upset of CMOS and TTL due to HPM-Signals
Esser, N.; Smalrus, B. |
| 10:50 | HPEM 17-6
UWB 10-6 | Electromagnetic Susceptibility
Bazzoli, S.; Demoulin, B.; Hoffmann, P.; Cauterman, M. |
| 11:10 | HPEM 17-7
UWB 10-7 | Analysis of Opamp Operation under High Power EMI
Fiori, F.; Crovetto, P. S. |

UWB 11: Short-Pulse Measurement Techniques (Part 2) G22A-013 10:30 – 11:30**Chaired by: T. Ehlen**

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| 10:30 | UWB 11-5 | Time Domain Measurements to Validate Test Site Characteristics
Battermann, S.; Garbe, H. |
| 10:50 | UWB 11-7 | Realization of All-Pass-Networks for Linearizing Logarithmic-periodic Dipole Antennas
Hirschmüller, E.; Mönich, G. |
| 11:10 | UWB 11-6 | Dielectric Constant Measurement by a Free-space Method in Time Domain
Ahmadi, A.; Fallahi, R.; Okhovvat, M.; Hakkak, M. |

HPEM 18: Coupling to Structures & Cables (Part 2)**G22A-020 10:30 – 11:50****Chaired by: L. Jansson**

10:30	HPEM 18-5	Scattering-Current Based Procedure for the Transient Analysis of EM Field to Cable Bundles Coupling D'Amore, M.; Sarto, M. S.; Scarlatti, A.
10:50	HPEM 18-6	The Effects of Contents and Apertures on the Structure of Electromagnetic Fields in Enclosed Spaces Marvin, A. C.; Dawson, J. F.; Kebel, R.; Robinson, M. P.
11:10	HPEM 18-7	Interchanging Frequency and Directional Dependencies in Susceptibility Testing Höjjer, M.
11:30	HPEM 18-8	Coupling of Indirect Lightning to Coaxial Cables at Naval Ships Vick, R.

HPEM 19: Electromagnetic Compatibility (Part 2)**G22A-120 10:30 – 11:50****Chaired by: A. Enders, T. Leibl**

10:30	HPEM 19-5	Storing Independent Passive Loggers of a Pulse Magnetic Field Goncharov, V. P.; Ksenofontov, V. A.; Molochkov, V. F.; Filatov, M. M.
10:50	HPEM 19-6	On the Measurement of the Transfer Impedance for Shielded Cables Tkachenko, S.; Korovkin, N. V.; Nitsch, J.; Scheibe, H.-J.
11:10	HPEM 19-7	Time-Domain Modeling of Skin Effect for Improved SI Analysis of Interconnect Systems and Packages Engin, A. E.; Mathis, W.; John, W.; Sommer, G.
11:30	HPEM 19-8	A Recording Technique to Enhance the Dynamic Range of a Time-Domain EMI Measurement System Braun, S.; Russer, P.

HPEM 20: EM Standards & Specifications (Part 1)**G22A-122 10:30 – 12:10****Chaired by: M. Ermel, T. Schrader**

10:30	HPEM 20-1	Status of EU Standardization for Human Exposition Control and its Implications Enders, A.
10:50	HPEM 20-2	Stress Transfer Functions Roemer, B.
11:10	HPEM 20-3	The New Standard IEC 61000-4-20 for Testing with TEM Waveguides Heidemann, M.
11:30	HPEM 20-4	EMC of High Voltage Gas Insulated Substations Under Service Conditions and Tests Kynast, E.; Groiss, A.
11:50	HPEM 20-5	Coaxial Impulse Current Generator for Investigation of Surge Protective Devices Kempen, S.; Peier, D.; Wetter, M.

HPEM 21: High-Power Microwaves (Part 1)**G26-H1 13:30 – 14:50****Chaired by: J. Bohl, S. Nyholm**

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|-------|-----------|--|
| 13:30 | HPEM 21-1 | An Undergraduate High Power Electromagnetic Effects Research
Baker, G.; Rudmin, J.; Olive, N.; Darragh, J. |
| 13:50 | HPEM 21-2 | Microwave Breakdown in Slots
Jordan, U.; Anderson, D.; Kim, A.; Lisak, M.; Bäckström, M.; Lundén, O. |
| 14:10 | HPEM 21-3 | Using Output Reflections for Spectrum Control in the High-Power Microwave Devices
Rozental, R. M.; Ginzburg, N. S.; Sergeev, A. S. |
| 14:30 | HPEM 21-4 | High-Efficiency Operation of the Relativistic X-Band Gyrotron with Strong Output Reflections
Rozental, R. M.; Ilyakov, E. V.; Kulagin, I. S.; Zaitsev, N. I.; Ginzburg, N. S. |

UWB 8: UWB Antennas (Part 5)**G22A-H2 13:30 – 14:30****Chaired by: S. Tyo, E. Farr**

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|-------|----------|--|
| 13:30 | UWB 8-17 | A Portable Automated Time-Domain Antenna Range: The PATAR(TM) System – Performance
Farr, E. G.; Atchley, L. M.; Bowen, L. H.; Bigelow, W. S.; Tran, T. C. |
| 13:50 | UWB 8-18 | Antenna-Aperture Synthesis for Hyperband SAR Antennas
Baum, C. E. |
| 14:10 | UWB 8-19 | Analysis and Optimization of New Ultra Wide Band Antenna to be used in Wireless Communication
Neyestanak, A. A. L.; Kashani, F. H.; Khosroshahy, M. |

**HPEM 17 Susceptibility of Components and Electrical
UWB 10: Circuits (Part 3)****G29-307 13:30 – 14:30**

(organized by the IEEE German EMC Chapter)

Chaired by: H. Garbe, D. Nitsch

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|-------|-------------------------|---|
| 13:30 | HPEM 17-8
UWB 10-8 | UWB, HPM and EMP Susceptibility of Complex PC Systems
Bausen, A.; Maack, J.; Nitsch, D. |
| 13:50 | HPEM 17-9
UWB 10-9 | Classification of the Destruction Effects in CMOS-Devices after Impact of Fast Transient Electromagnetic Pulses
Camp, M.; Korte, S.; Garbe, H. |
| 14:10 | HPEM 17-10
UWB 10-10 | Coupling and Effects of UWB Pulses on Complex Systems
Nitsch, D. |

UWB 13: Pulsed Power (Part 1)**G22A-013 13:30 – 15:10****Chaired by: M. Jung, W. Prather**

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| 13:30 | UWB 13-1 | A Marx-type Electromagnetic Pulse Generator
Ahn, J.; Song, S.; Ryu, J.; Jung, M. |
| 13:50 | UWB 13-2 | Fast Volume Breakdown in Argon and Air at Low Pressures
Crull, E.; Krompholz, H.; Neuber, A.; Hatfield, L. |
| 14:10 | UWB 13-3 | Modeling the Conductivity of a Subnanosecond Breakdown Gas Switch
Chen, J. H.; Buchenauer, C. J.; Tyo, J. S. |
| 14:30 | UWB 13-4 | Compact Megawatt Pulsed Power Modules with Nano- and Picosecond Pulse Width
Efanov, V.; Kricklenko, A.; Komashko, A.; Yarin, P. |
| 14:50 | UWB 13-5 | High Repetition Rate Nano- and Picosecond Pulse Generators
Efanov, V.; Komashko, A. |

Coffee Break**14:50–15:30**

HPEM 18: Coupling to Structures & Cables (Part 3)**G22A-020 13:30 – 14:50****Chaired by: L. Jansson**

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| 13:30 | HPEM 18-9 | Incident Field Excitation of a Random Two-Wire Transmission Line above a Lossy Ground Plane
Pincenti, J. C.; Uslenghi, P. L. E. |
| 13:50 | HPEM 18-10 | Penetration into Nested Cavities through Apertures
Negri, D.; Erricolo, D.; Uslenghi, P. L. E. |
| 14:10 | HPEM 18-11 | The Mutual Impedance between Dipole Antennas within Cavities as Derived from the Reciprocity Theorem
Gronwald, F.; Blume, E. |
| 14:30 | HPEM 18-12 | On the Theory of the Propagation of Current Waves along Smoothly Curved Wires
Tkachenko, S.; Nitsch, J. |

HPEM 19: Electromagnetic Compatibility (Part 3)**G22A-120 13:30 – 14:30****Chaired by: A. Enders, T. Leibl**

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| 13:30 | HPEM 19-9 | Analysis of Effect of External Wave on a Lossless Microstrip Bended Line
Biglarbegian, B. |
| 13:50 | HPEM 19-10 | The Right Pinning to Reduce the Electromagnetic Emission of Integrated Circuits
Deutschmann, B.; Winkler, G.; Ostermann, T.; Tanda, A. |
| 14:10 | HPEM 19-11 | Synthesis of Nonlinear Compensators as Truncated Volterra-Picard Series
Korovkin, N. V.; Nitsch, J.; Solovyeva, E. |

HPEM 22: Numerical Methods (Part 1)**G22A-122 13:30 – 14:50****Chaired by: U. Jakobus, J. Joly**

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| 13:30 | HPEM 22-1 | Application of Fast Integral Equation Techniques to the Numerical Solution of High Frequency Electromagnetic Scattering Problems
Jakobus, U.; van Tonder, J. J. |
| 13:50 | HPEM 22-2 | Capability of a DFDT Code to Analyze the EM Coupling into a System at Microwave Frequencies
Joly, J.-C.; Pecqueux, B. |
| 14:10 | HPEM 22-3 | Eliminating Signal Processing Artifacts due to FFT in the Analysis of Broadband Signal Using the Matrix Pencil Method
Burintramart, S.; Sarkar, T. K. |
| 14:30 | HPEM 22-4 | FDTD Simulation and Spark Voltage Dependence of Electromagnetic Fields Due to Electrostatic Discharge
Fujiwara, O.; Seko, H.; Yamanaka, Y. |

HPEM 21: High-Power Microwaves (Part 2)**G26-H1 15:30 – 16:50****Chaired by: J. Bohl, S. Nyholm**

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| 15:30 | HPEM 21-5 | Design of a 4-Cell Load-Limited Compact MILO
Cousin, R.; Larour, J.; Raymond, P.; Durand, A. J.; Gouard, P. |
| 15:50 | HPEM 21-6 | Threat and Potential Value of RF Weapons
Bohl, J.; Stark, R. H.; Urban, D. J.; Staines, D. G. |
| 16:10 | HPEM 21-7 | Characterization of Modes in Coaxial Vircator
Hao, S.; Zhanfeng, Y.; Guozhi, L. |
| 16:30 | HPEM 21-8 | Relativistic Magnetron with Injected Electron Beam
Fuks, M.; Schamiloglu, E. |

HPEM 23: Hardness Assurance & Maintenance (Part 1)**G22A-H2 15:30 – 17:10****Chaired by: B. Granbom,**

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| 15:30 | HPEM 23-1 | Transfer Function Measurements on a Composite Helicopter between 300 kHz up to 18 GHz
Dupouy, D.; Daudy, Y.; Tauber, W. |
| 15:50 | HPEM 23-2 | Feasibility of Reflectometry Techniques for Cable Bundles Diagnostics aboard Aircraft
D'Amore, M.; Sarto, M. S.; Tamburrano, A. |
| 16:10 | HPEM 23-3 | Electromagnetic Susceptibility of a Structure Composed of Several Shelters Networked in a Complex Manner and Constituting a Command Control Unit
Geiswiller, J.; Asfaux, D.; Béniguel, Y.; Kerhervé, E.; Pecqueux, B.; Joly, J.-C.; Tabbara, W.; Hélier, M.; Lecointe, D. |
| 16:30 | HPEM 23-4 | Successful Certification of WLAN Systems in Commercial Passenger Aircrafts
Schmidt, I.; Junge, A.; Schwark, M.; Pötsch, S.; Enders, A.; Keibel, R. |
| 16:50 | HPEM 23-5 | Lightning- and Radiation Induced Voltages and Currents on Internal Wires Inside a Wing Fuel Tank.
Eriksson, G. |

HPEM 24: New Frontiers in Effects Analysis for Electromagnetic Interference (Part 1)**G29-307 15:30 – 16:50****Chaired by: R. Gardner, C. Ropiak**

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| 15:30 | HPEM 24-1 | On the Derivation of Physical Relations From Effects Data
Gardner, R. L. |
| 15:50 | HPEM 24-2 | Bayesian Data Analysis and Optimal Experimental Design for RF Effects
Clarke, T. J. |
| 16:10 | HPEM 24-3 | EMI Effects Analysis Techniques that Yield Exportable (Test Bed Independent) Results
Ropiak, C.; Hayes, P. |
| 16:30 | HPEM 24-4 | Footprints - A Tool for Visualizing Electromagnetic Radiation Patterns
Vail, P. J. |

UWB 13: Pulsed Power (Part 2)**G22A-013 15:30 – 16:50****Chaired by: M. Jung, W. Prather**

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| 15:30 | UWB 13-6 | Development of Ultra-Wideband Pulsers at the University of Texas at Dallas
Davanloo, F.; Collins, C. B.; Agee, F. J. |
| 15:50 | UWB 13-7 | On the Spectral Variability of Ultra-Wideband High-Power Microwave Sources by Generating Pulse Sequences
Schmitz, J.; Jung, M.; Wollman, G. |
| 16:10 | UWB 13-8 | Compact Photoconductive Switches for Ultra-Wideband High Power Microwave Generation
Islam, N. E.; Nunnally, W.; Tzeremes, G.; Gaudet, J. A. |
| 16:30 | UWB 13-9 | Gigawatt All-Solid-State Nano- and Picosecond Pulse Generators for Radar Applications
Efanov, V.; Kricklenko, A.; Komashko, A.; Yarin, P. |

HPEM 18: Coupling to Structures & Cables (Part 4)**G22A-020 15:30 – 16:30****Chaired by: L. Jansson**

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| 15:30 | HPEM 18-13 | Electromagnetic Field Coupling to a Circular Loop inside a Rectangular Cavity
Tkachenko, S.; Nitsch, J. |
| 15:50 | HPEM 18-14 | Coupling Measurement Technique for Symmetrical Structures Applied to a Generic Missile Mock-up, Called GENEC
Sonnemann, F.; Staines, G.; Braun, C.; Tänzer, A. |
| 16:10 | HPEM 18-15 | Measurement Validation of an ILCM Model of a Generic Missile System
Watkins, S. P.; Hoad, R. |
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HPEM 19: Electromagnetic Compatibility (Part 4)**G22A-120 15:30 – 16:30****Chaired by: A. Enders, T. Leibl**

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| 15:30 | HPEM 19-12 | Experience of the General Estimation of a Power Transformers Technical Condition on the Basis of Own Electromagnetic Radiation Spectrum Analysis
Silin, N.; Popovich, A.; Belushkin, M.; Katanaev, V. |
| 15:50 | HPEM 19-13 | External Magnetic Field Analysis of Electric Machines
Roytgarts, M. |
| 16:10 | HPEM 19-14 | System Power Budget Analysis of Microwave Radio Links
Can, M.; Serbest, A. H. |
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UWB 14: Electromagnetic Theory (Part 1)**G26-H1 08:30 – 10:10****Chaired by: C. Christopoulos**

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|-------|----------|---|
| 08:30 | UWB 14-1 | Embedding Multiple Wires within a Single TLM Node
Sewell, P.; Biwojno, K.; Liu, Y.; Christopoulos, C. |
| 08:50 | UWB 14-2 | Simulation of Nonlinear Integrated Photonics Devices: A Comparison of TLM and Numerical Time Domain Integral Equation Approaches
Benson, T.; Al-Jarro, A.; Sewell, P.; Janyani, V.; Paul, J. D.; Vukovic, A. |
| 09:10 | UWB 14-3 | Circuit Based Full-Wave Models for Non-Uniform Line Structures Created with the Method of Partial Elements
Kochetov, S. V.; Wollenberg, G. |
| 09:30 | UWB 14-4 | On the Non-Uniqueness of the Electric Field Components –Static, Induction or Intermediate, and Radiation - From Extended Source Distributions
Thottappillil, R. |
| 09:50 | UWB 14-5 | Hybrid TLM Partial Wave Expansion Method for Time-Domain Modeling of Wide-band Antenna Structures
Lorenz, P.; Russer, P. |

HPEM 21: High-Power Microwaves (Part 3)**G22A-H2 08:30 – 09:50****Chaired by: J. Bohl, S. Nyholm**

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| 08:30 | HPEM 21-9 | HPM – A Serious Threat to Vital Parts of the Net Centric Warfare Concept
Silfverskiöld, S.; Johannesson, T.; Bäckström, M.; Nyholm, S. E.; Löfstrand, K.-G. |
| 08:50 | HPEM 21-10 | Wide Band Power Circularly Rectenna
Zbitou, J.; Latrach, M.; Toutain, S. |
| 09:10 | HPEM 21-11 | Periodic Waveguide as a Frequency Selective Microwave Power Switch
Pogrebnyak, V. A.; Hasar, U. C.; Güler, M.; Inan, Ö. E.; Eraslan, T.; Küçükaltun, A. N. |
| 09:30 | HPEM 21-12 | A New High-Power Crossed Field Tube
Churyumov, G. I.; Frolova, T. I.; Gritsunov, A. V. |

HPEM 24: New Frontiers in Effects Analysis for Electromagnetic Interference (Part 2)**G29-307 08:30 – 10:10****Chaired by: R. Gardner, C. Ropiak**

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| 08:30 | HPEM 24-5 | Communications-Theoretic Techniques: Keys to Pulsed IEMI Problems? - Conceptual Foundations
Boling, R.; Kohlberg, I. |
| 08:50 | HPEM 24-6 | Communications-Theoretic Techniques: Keys to Pulsed IEMI Problems?
Boling, R.; Kohlberg, I. |
| 09:10 | HPEM 24-9 | HPM Effects on Central Processor Units
Gray, R. F.; Bollen, W. M. |
| 09:30 | HPEM 24-10 | Investigation of Radio Frequency Modeling Techniques for Cavities
Andreadis, T. D.; Starosta, M.; Shue, J.; Grounds, P. W.; Girardi, P. G. |
| 09:50 | HPEM 24-11 | Statistical Approach of Efficiency of HPM Weapons and Systems Vulnerability.
Percaille, J.-P. |

UWB 15: Antennas for UWB Communication (Part 1)**G22A-013 08:30 – 09:50****Chaired by: W. Wiesbeck**

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| 08:30 | UWB 15-1 | Characterisation of UWB Antennas by their Spatio-temporal Transfer Function based on FDTD Simulations
Manteuffel, D.; Kunisch, J.; Simon, W.; Geissler, M. |
| 08:50 | UWB 15-2 | A Novel Methodology Combining Antennas, Propagation and Non-Linear Switching Circuits in Transient Time-Domain Simulation
Zwierzchowski, S.; Okoniewski, M. |
| 09:10 | UWB 15-3 | Characterising Impulse Radiating Antennas by an Intuitive Approach
Sachs, J.; Peyerl, P.; Rauschenbach, P.; Tkac, F.; Zetik, R. |
| 09:30 | UWB 15-4 | Optimal Antenna and Signal Co-design for UWB Antenna Link
Boryszenko, A. O.; Schaubert, D. H. |

Coffee Break**09:50–10:30**

HPEM 22: Numerical Methods (Part 2)**G22A-020 08:30 – 09:50****Chaired by: U. Jakobus, J. Joly**

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| 08:30 | HPEM 22-5 | French/German Simulations of EM Coupling into the GENEC Testobject
Ritter, J.; Joly, J.-C. |
| 08:50 | HPEM 22-6 | Histogram Solution of the Maxwell Equations Inside Rectangular Enclosure which is not Electrically Large
Hämäläinen, J. S.; Järviö, P. S.; Martin, T.; Bäckström, M. |
| 09:10 | HPEM 22-7 | Investigation of Parallel Cluster for the Numerical Simulation of EMC Problems
Schenk, U.; Nitsch, D.; Bausen, A. |
| 09:30 | HPEM 22-8 | Modelling of Electromagnetic Wave Propagation in Periodic Absorbing Media inclusive a Semitransparent Object
Spitsyn, V. G. |

UWB 16: Scattering (Part 1)**G22A-120 08:30 – 10:10****Chaired by: A. Stone, G. Wollenberg**

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| 08:30 | UWB 16-1 | Measurements of Ultra-Wideband Radar Cross Sections of an Automobile at Ka Band
Kobayashi, T.; Takahashi, N.; Yoshikawa, M.; Tsunoda, K.; Tenno, N. |
| 08:50 | UWB 16-2 | Directly Measuring Ocean Forward Scatter with an UWB Radar
Hansen, P.; Scheff, K.; Mokole, E. |
| 09:10 | UWB 16-3 | Some Broadband Calculated RF Scatter from the Trihedral Corner Reflector
Mokole, E.; Taylor, D.; Gold, B.; Sarkar, T. |
| 09:30 | UWB 16-4 | Transient Phase-Space Inhomogeneous Green's Function for Modeling High Contrast Scattering
Melamed, T. |
| 09:50 | UWB 16-5 | Axial Backscattering from a Wide Angular Sector
Baum, C. E. |

UWB 17: UWB Communication (Part 1)**G22A-122 08:30 – 10:10****Chaired by: K. Kyamakya**

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| 08:30 | UWB 17-1 | Study on the Probability of Error in UWB with Multiuser Interferences
Fiorina, J. |
| 08:50 | UWB 17-2 | Contribution to the Study of the Dynamics and Synchronization of Chaotic Modulation in UWB Communication and Positioning Systems
Chedjou, J. C.; Kamanou, S. A.; Kyamakya, K. |
| 09:10 | UWB 17-3 | Differential Modulation in UWB Range Estimation
Schröder, J.; Galler, S.; Kyamakya, K. |
| 09:30 | UWB 17-4 | A Low-Complexity Receiver for Ultra Wide Band Communications
Alesii, R.; Renzo, M. D.; Graziosi, F.; Santucci, F.; Scarano, A.; Tognolatti, P. |
| 09:50 | UWB 17-5 | Performance of a Modified Early-Late Gate Synchronizer for UWB Impulse Radio
Reggiani, L.; Maggio, G. M. |

UWB 14: Electromagnetic Theory (Part 2)**G26-H1 10:30 – 12:10****Chaired by: C. Christopoulos**

10:30	UWB 14-6	Transient Diffraction by Boundary of Two Lossy Dielectrics in a Waveguide Butrym, A. Y.; Zheng, Y.; Tretyakov, O. A.
10:50	UWB 14-7	TEM Field Structure of Electric and Magnetic Fields From a Semi-Infinite Vertical Thin-Wire Antenna Above a Conducting Plane Thottappillil, R.; Uman, M. A.
11:10	UWB 14-8	Impulse Wave Propagation in Transversely Inhomogeneous Closed Waveguide Butrym, A. Y.; Tretyakov, O. A.
11:30	UWB 14-9	Radiation of Oscillating Dipole Moving in Dielectric with Resonance Dispersion Tyukhtin, A. V.
11:50	UWB 14-10	Radiation of Moving Charges in Waveguide Structures Containing Dielectric with Resonance Dispersion Tyukhtin, A. V.

UXO 4: Modeling & Simulation (Part 1)**G22A-H2 10:30 – 11:50****Chaired by: A.P.M. Zwamborn, J. Rehbergen**

10:30	UXO 4-1	Electromagnetic Detection and Identification of Automobiles Hubing, T.; Beetner, D.; Dong, X.; Weng, H.; Noll, M.; Goksu, H.; Moss, B.; Wunsch, D.
10:50	UXO 4-2	Solving Ill-posed Linear Inverse Problems without Regularization Krauthäuser, H. G.; Nitsch, J.
11:10	UXO 4-3	Eddy Current Computation for Small Metal Objects under a Coil Schulze, S.; Glock, H. W.; van Rienen, U.; Ewald, H.
11:30	UXO 4-4	Artificial Neural Networks for Correction of Microwave Images Krell, G.; Michaelis, B.

UWB 15: Antennas for UWB Communication (Part 2)**G22A-013 10:30 – 11:50****Chaired by: W. Wiesbeck**

10:30	UWB 15-5	Antenna Effects and Modelling in UWB Impulse Radio Roblin, C.; Sibille, A.
10:50	UWB 15-6	UWB Beamforming in Realistic Channel Scenarios Kaiser, T.; Buchholz, C.; Yang, G.
11:10	UWB 15-7	An Ultra Wideband Aperture Coupled Bow Tie Antenna for Communications Soergel, W.; Waldschmidt, C.; Wiesbeck, W.
11:30	UWB 15-8	Small Patch Antennas for Ultra-Wideband Wireless Body Area Network Klemm, M.; Tröster, G.

HPEM 22: Numerical Methods (Part 3)**G22A-020 10:30 – 11:10****Chaired by: U. Jakobus, J. Joly**

10:30	HPEM 22-9	Numerical Assessment of Coupling in the 500MHz-10GHz Band Using an Inverse Approach with FDTD- Application to GENEC Rouvrais, N.; Therond, F.; Joly, J.-C.; Pecqueux, B.; Beniguel, Y.
10:50	HPEM 22-10	The Method of Auxiliary Sources for Solving Some Electrodynamics Problems Zaridze, R. S.; Ghvedashvili, G. N.; Tavzarashvili, K. N.; Kakulia, D. G.

Special Events

Welcome Reception will take place Sunday, July 11th in the upper floor of the main cafeteria, Building 27, from 18:30–21:00 hours. At the same time the registration desks will be open and you already can pick up your conference bag.

Opening of the Technical Exhibition will take place Monday, July 12th at 13:15 hours in the entrance area of the main library, Building 30. The opening will be held by the Minister of Economic Affairs of the State Saxony-Anhalt.

Opening Ceremony will take place Monday, July 12th in the Johannis Church. The Johannis Church is located at the “Jakobstraße”, about 800 meters south of the university campus. With its two towers it is easy to spot. We recommend to walk there. You can also take tram line 8,9, or 10 from station “Universität” to station “Alter Markt” and then turn left. The opening ceremony begins at 19:30 hours, doors open at 19:00 hours. Refreshments will be served at the end of the opening ceremony.

Mayor’s Reception will take place Tuesday, July 13th in the “Kaiser-Otto-Hall” of the Culture Historical Museum. The beginning is at 19:00 hours. Due to space limitations this reception is on invitation only for those who actively took part in the organization of EUROEM 2004. The Culture Historical Museum is located at the “Otto-von-Guericke Straße”. To arrive there from the conference site you can take the tram line 9 or 10 from station “Universität” south towards the center of the city and exit at station “Domplatz”. Then turn right into “Danzstraße” and walk about 100 meters, you will find the Culture Historical Museum to the left.

Banquet will take place Wednesday, July 14th in the Millennium Tower which is part of the “Elbauenpark”. Buses are chartered to leave from the hotels “Ratswaage”, “Maritim”, and “Intercity Hotel” at 18:30 hours. They will take you to the entrance of the “Elbauenpark” from where you can walk to the Millenium Tower. The program of this social event will start at 19:00 hours *in front* of the Millennium Tower with a demonstration of Otto-von-Guericke’s historical experiments.

Symposium Tours

During the conference the following tours will be offered:

“Highlights of Magdeburg” Monday, July 12th

Departure time: early afternoon

Description: This is a guided walking tour to the main highlights of Magdeburg rather than a full day excursion. You will see the gothic Magdeburg cathedral and the Monastery of Our Lady, the oldest surviving building in town. Along the way we pass some other sights and learn about the history of Magdeburg and its people.

Price: Some moderate fee. To sign up for this tour please check for information at the registration desk upon your arrival during sunday afternoon or monday morning.

“Medieval Cities and the Harz Mountains” Tuesday, July 13th

Departure time from Magdeburg: 8:00 a.m.

Return time to Magdeburg: around 5:30 p.m.

Description: From Magdeburg the bus takes us about 80 km southwest towards the Harz National Park. We visit Wernigerode as an outstanding example of a truly historic European city. Many original and beautifully restored buildings that form enchanting alleys await you. After a guided walking tour we enter the Harz National Park and get on the “Harzer Schmalspurbahn”, a narrow-gauge railway, which takes us on top of the “Brocken”, the highest peak of the Harz. Here we enjoy lunch and visit the “Brockenmuseum” and its affiliated garden. We continue and leave the Brocken by rail to arrive at the historic railway station in the small city Schierke. From there we return by bus to Magdeburg.

Price: 65.00 Euros including lunch, guided tours, and railway tickets

“Lutherstadt Wittenberg - home of Martin Luther and the protestant movement” Wednesday, July 14th

Departure time from Magdeburg: 8:00 a.m.

Return time to Magdeburg: around 5:30 p.m.

Description: After a 90 km bus trip we arrive in Wittenberg and first enjoy a coffee break. Afterwards we tour Martin Luther’s home which contains the largest collections on Martin Luther and the protestant movement. Martin Luther spent about 40 years in this former cloister. We continue to have lunch and then move on to explore the city. A guide takes us to the famous castle church, the market place, and other historic sites like the “Melanchthonhaus” and the “Leucorea”. Finally, we return by bus to Magdeburg.

Price: 60.00 Euros including lunch and guided tours

“Potsdam and Cecilienhof” Thursday, July 15th

Departure time from Magdeburg: 8:00 a.m.

Return time to Magdeburg: around 6:00 p.m.

Description: We travel by bus on the highway to Potsdam and discover Potsdam’s highlights along an extended sightseeing tour. This includes “Cecilienhof” where Truman, Churchill, and Stalin met at the Potsdam Conference following World War II. Nearby to Cecilienhof we take a break and enjoy lunch. Afterwards it is time to visit the “New Palace” within the Sanssouci Park. Having felt the atmosphere of this former summer residency of Frederick the Great we relax within a historic tavern. From there we return to Magdeburg.

Price: 70.00 Euros including lunch and guided tours

If you are interested in one or more of these excursions please book as early as possible since the number of participants for each tour is limited. We have to reserve the right to cancel an excursion in case of an insufficient number of participants.

List of Exhibitors

The following companies and institutions take part in the Technical Exhibition:

- ABB AG Corporate Research Center Germany
- Autoflug GmbH
- Diehl Munitionssysteme
- Diversified Technologies, Inc.
- EADS Military Aircraft Division
- EM Software & Systems GmbH
- emv GmbH
- Farr Research, Inc.
- Federal Office of Defense Technology and Procurement (BWB)
- FID GmbH
- Rheinmetall Defence Electronics GmbH, Bremen
- Rheinmetall W&M, Unterlüß
- Regional Companies of the State Saxony-Anhalt

Registration

Registration for the conference should be done via Internet at <http://www.euroem.org>. Upon arrival in Magdeburg on-site registration is possible at the registration desks. These are located right next to the technical exhibition in Building 30, compare the map on page 48.

Registration Fees

Full (HPEM, UXO)	590 Euro
Full (UWB)	665 Euro
Student	100 Euro
Additional UWB Book	110 Euro
Banquet Ticket	75 Euro

Full rate (HPEM,UXO) includes the conference program, the book of abstracts, the welcome reception, the opening ceremony, refreshments during coffee breaks, and admission to all sessions.

Full rate (UWB) includes all the above plus the UWB book.

Student rate includes admission to all sessions and is granted to holders of a valid student ID that are not older than 30 years.

Banquet tickets are limited and sold on a first-come first-served basis.

Conference Secretariat

EUROEM 2004
c/o Mrs. Susan Kassebaum
Otto-von-Guericke-University Magdeburg, IGET
Universitätsplatz 2
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Email: magdeburg@euroem.org
WWW: www.euroem.org
Phone: +49-391-6718868
Fax: +49-391-6711236

Accommodations

Hotel Ratswaage

Ratswaageplatz 1
39104 Magdeburg
Tel.: +49 391 5926 0
Fax: +49 391 5619615
Email: Hotel@ratswaage.de
WWW: www.ratswaage.de
conference rates :
single: 75,00 EUR
double: 90,00 EUR

Intercity Hotel

Bahnhofstr. 69
39104 Magdeburg
Tel.: +49 391 5962 0
Fax: +49 391 5962 499
Email: magdeburg@intercityhotel.de
WWW: www.intercityhotel.de
conference rates:
single: 55,00 EUR
double: 66,00 EUR

Residenz Joop (Hotel Garni)

Jean-Burger-Str. 16
39112 Magdeburg
Tel.: +49 391 6262 0
Fax: +49 391 6262 100
WWW: www.residenzjoop.de
conference rates:
single: 89,00 EUR
double: 109,00 EUR

Hotel Maritim

Otto-von-Guericke-Str. 87
39104 Magdeburg
Tel.: +49 391 5949 0
Fax: +49 391 5949 990
Email: reservierung.mag@maritim.de
WWW: www.maritim.de
conference rates:
single standard: 73,00 EUR
double standard: 92,00 EUR
single comfort: 93,00 EUR
double comfort: 112,00 EUR

Herrenkrug Parkhotel

Herrenkrug 3
39114 Magdeburg
Tel.: +49 391 8508 0
Fax: +49 391 8508 501
Email: HerrenkrugHotel@t-online.de
WWW: www.herrenkrug.de
conference rates:
single: 88,00 EUR
double: 118,00 EUR

All rates include breakfast.



Travel Information - How to reach Magdeburg

The following information is complemented by the map on page 47.

By Air: The closest international airports are the ones in Berlin (Schoenefeld, Tegel, Tempelhof), Hannover, and Leipzig/Halle. To continue your travel from one of these airports you probably will use a train or rent a car. Travelling by train is easy since all of the above airports are connected to main train stations by public transport. For detailed information please refer to the following websites:

- Berlin airports: <http://www.berlin-airport.de/PubEnglish/index.html>
- Hannover airport: <http://www.hannover-airport.de/>
- Leipzig/Halle airport: <http://www.leipzig-halle-airport.de/en/home/index.html>

By Rail: The main train station “Magdeburg Hauptbahnhof” is well embedded within the German railway system and therefore can be easily reached from other European cities by rail. It is located in the center of the city, see the map on page 47. For more information on the German railway system please refer to

- http://www.bahn.de/pv/view/int_guest/subhome/international_guests.shtml

By Car: Magdeburg is connected to the “Autobahn”-system by the principal highways “A2” and “A14”.

- If you approach from east (Berlin) or west (Hannover) on highway “A2” you can take the exit “Magdeburg-Zentrum” to merge on a four-lane motorway “B189/B71” (two lanes each direction). Stay on the motorway and cross the northern suburbs of Magdeburg. Then look out for the exit “Zentrum, Hauptbahnhof, Damaschkeplatz” which leads to the main train station and the center of Magdeburg.
- If you approach from south (Leipzig) on highway “A14” we recommend to take the exit “Hannover(A2)/Berlin/Magdeburg-Sudenburg/Magdeburg-Zentrum” and follow the four-lane motorway “B81/B71” (two lanes each direction). Stay on the motorway and cross the southern suburbs on Magdeburg. In order to reach the center of Magdeburg you can take the exit “Zentrum/Hauptbahnhof/Ernst-Reuter-Allee”.

Magdeburg Downtown

A map of Magdeburg Downtown is provided on page 47. Central points of the city center are the main train station and the Johannis Church. The campus of the Otto-von-Guericke-University, which hosts EUROEM 2004, is immediately north of the city center. From the train station the conference hotels “Hotel Maritim” and “Intercity Hotel” are in close walking distance. If in doubt you can ask for directions at the information desk next to the main entrance. In principle, the “Ratswaage Hotel” is in walking distance, as well, but if you carry luggage you might want to use a taxi. From the train station we also recommend to take a taxi to arrive at the “Residenz Joop”. To reach the “Herrenkrug Parkhotel” you can either take a taxi or tram line 6 to station “Herrenkrug”. If you stay in the guest house of the university you either take a taxi or tram line 8,9, or 10 to station “Universität”. The guest house is part of Building 18 on the university campus. It is shown on the campus map on page 48 of this program.

Notes

Notes

Maps

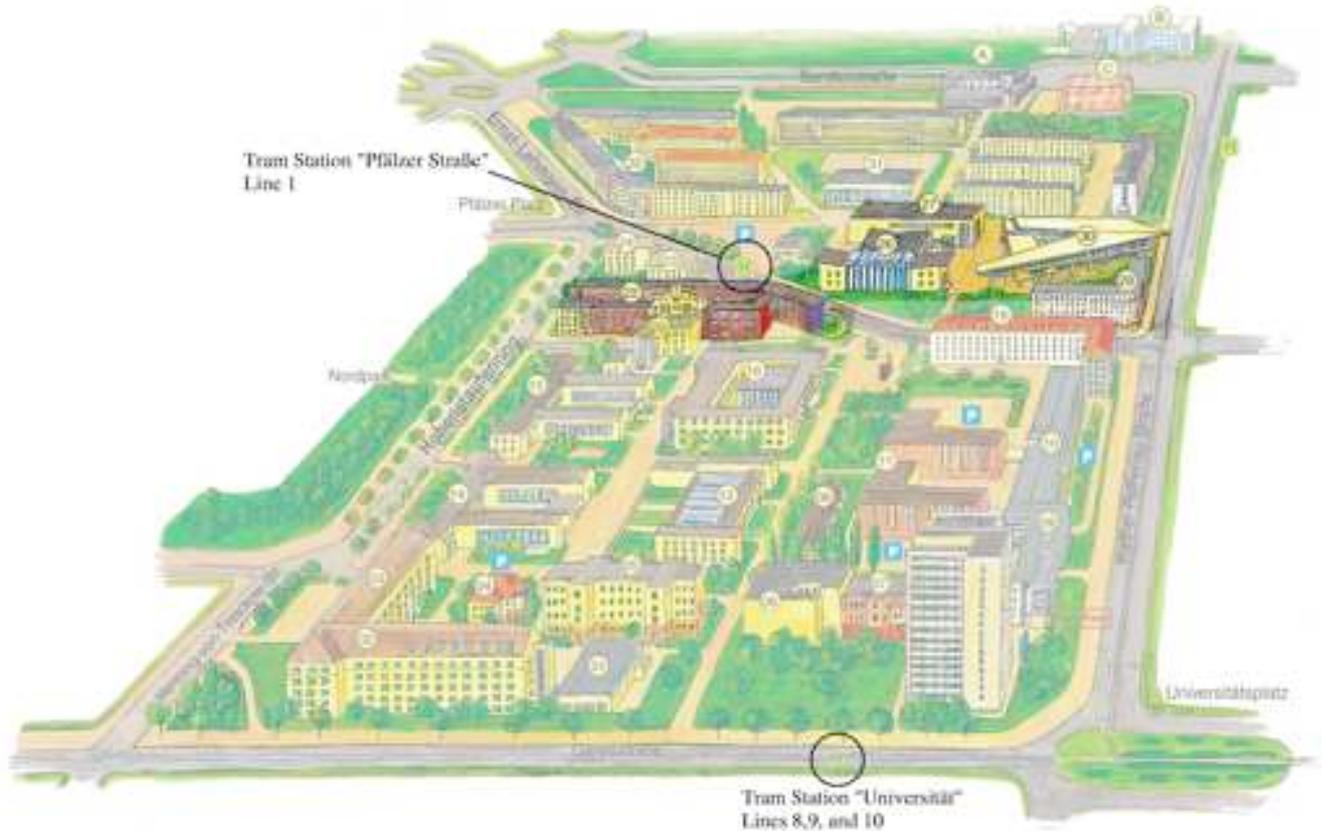
How to reach Magdeburg



Magdeburg Downtown

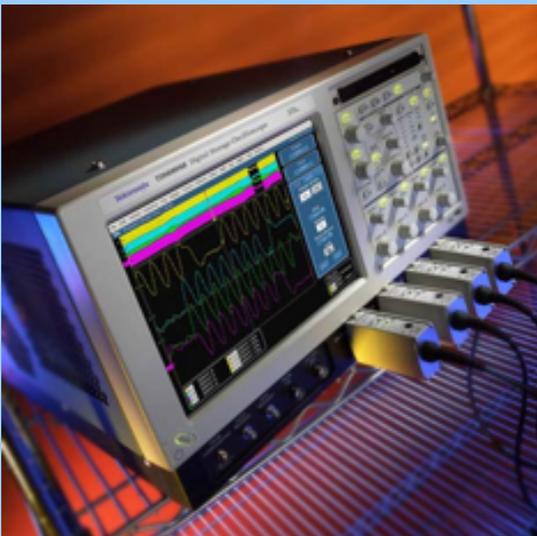


Campus of the Otto-von-Guericke-University Magdeburg



Tektronix Advances Market Leadership With New Ultra High-Performance Oscilloscope

8 GHz Oscilloscope Featuring Unique Pinpoint™ Triggering and 7HP SiGe Probing Enables Designers To Stay Ahead of Rapid Technology Advancements



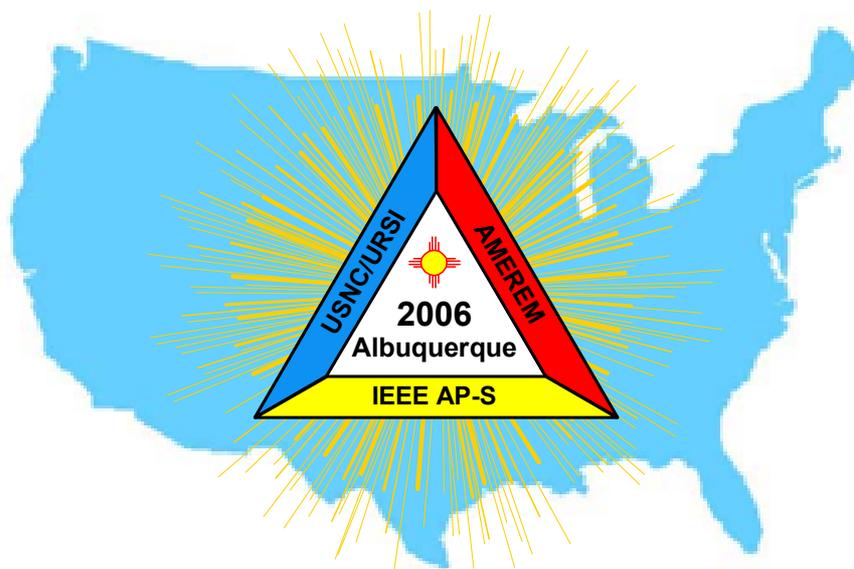
Tektronix, a leading worldwide provider of test, measurement and monitoring instrumentation, announced the availability of its new 8 GHz bandwidth Digital Storage Oscilloscope (DSO) Series featuring industry-leading signal fidelity with unique Pinpoint™ triggering, four channels of concurrent high resolution waveform capture, and a new differential probing solution using IBM's 0.18um Silicon Germanium (7HP SiGe) technology.

With rapidly increasing bit and clock rates in complex digital architectures, customers working with leading-edge applications such as XAUI, PCI-Express and Infiniband in the communications, computer, and semiconductor industries are tasked with connecting, triggering, acquiring and analysing fast, multiple, complex, signals simultaneously. The new Tektronix TDS6000B Series includes industry-leading features and performance at all stages of a customer's high-speed design and validation processes, including ultra-high bandwidth, the best signal fidelity, leading acquisition performance, broadest trigger features, and the most

extensive range of optional analysis and compliance solutions. The combination of the TDS6000B Series oscilloscope and the new 7HP SiGe P7380SMA differential probe offers design engineers the best performance and highest measurement accuracy available on the market today, giving them the tools they need to stay ahead of rapid technology advancements in today's competitive markets.

AMEREM 2006

to be held in conjunction with IEEE AP-S
and UNSC/URSI 2006 Symposium



Albuquerque, New Mexico, **USA**
July 2006

THEMES

HPEM / NEM and Related Topics

UWB/SP and Related Topics

UXO and Related Topics

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World Wide Web home page for AMEREM 2006:

<http://unm.eece.edu/APS2006/AMEREM.html>



Werner von Siemens
(1816-1892)



WWW.EUROEM.ORG

