

Commission B, Fields and Waves

Activity report

March–June 2011

1 PIERS2011, Morocco

The 29th PIERS (Progress In Electromagnetics Research Symposium) in Marrakesh, Morocco

PIERS provides an international forum for reporting progress and recent advances in all aspects of electromagnetics. Spectra range from statics to RF, microwave, photonics, and beyond. Topics include radiation, propagation, diffraction, scattering, guidance, resonance, power, energy and force issues, and all applications and modern developments.

1.1 Statistics

Date: 20–23 March, 2011

Venue: Mansour Eddahbi Hotel & Conference Center, Marrakesh, Morocco

Web page: <http://piers.org/piers2011Marrakesh/>

Number of oral presentations: 670

Number of poster presentations: 201

Oral contributions from Japan: 45

Poster contributions from Japan: 16

1.2 Technical sessions

- Advances in Nonlinear Optical Cavity Dynamics
- Extraordinary Transmission: Theory and Experiments
- Near-field Techniques Applied to Based Metamaterial Devices
- Metamaterials and Their Applications
- Emerging Modalities and Novel Applications of Inverse Problems in Electromagnetics
- SMOS Satellite CAL/VAL: CAROLS L Band Radiometer Airborne Campaigns
- Small Antennas
- Electrically Small Antennas for Military Applications
- Biosensing with Nanoplasmonics
- EM Interactions in Biomedical Engineering
- EMC and Mitigation Techniques: Theory and Practice
- Advances in Phase — Space Optics
- Ionospheric Radio Propagation and Effects with Special Emphasis on the Mediterranean and North African Areas
- Biomedical Electromagnetic Instruments, EM Condensed Materials and Imaging
- Theoretical Issues and Experimental Constraints in Active Microwave Imaging
- Time Reversal Methods for Electromagnetic Applications
- Remote Sensing
- Advances in Nano-antennas
- Platform Effects and Mutual Coupling in Large Complex Array Systems

- Novel Mathematical Methods in Electromagnetics
- Instabilities and Solitons in Nonlinear Photonics
- Electromagnetic Modeling, Inversion and Applications
- Microwave/Terahertz Photonics Technologies and Their Applications
- Electromagnetic Nondestructive Evaluation (NDE)
- Emerging Strategies and Innovative Algorithms for the Solution of Inverse Scattering Problems
- Antenna and Array
- Statics and Dynamics of Magnetic Nanostructures: Vortices and Nanomagnonics
- Antenna Channel Interactions in Multipath Wireless Channels
- Electromagnetic Theory and Design on the Optical Dispersive Materials, Invisible Cloak and Photonic Crystals
- Transformation Optics, Metamaterials and Plasmonics
- Sensor-based Structural Damage Detection: Concrete Applications
- Reconfigurable Antennas
- Computational Electromagnetics, Hybrid Methods
- Signals, Waves and Shielding
- Rogue Waves in Nature and Extreme Events
- Microwave and Millimeter Wave Circuits and Devices, CAD
- Electromagnetic Wave Propagation in Dissipative Media
- Electromagnetic Modeling and Imaging of Anisotropic Media
- Electromagnetics in Remote Sensing
- RFID and RFID-enabled Sensors
- Validation of Computational Electromagnetics and Quantitative Comparisons
- Extended/Unconventional Electromagnetic Theory, EHD(Electro-hydrodynamics)/EMHD(Electromagnetohydrodynamics), and Electro-biology
- Anisotropic Media and Liquid Crystals Optics
- Terahertz Radiation Detection and Emission by Field Effect Transistors
- Reduction of the Mutual Coupling and/or Metamaterial Absorbers
- Electromagnetic Research in Photonic Metamaterials
- Advances in Image Processing
- Electromagnetic Scattering over Arid Surfaces: Subsurface and Salt Issues
- Lightning Effects to Tall Structures and Wind Turbines
- Circuits and Devices, CAD
- Material, Design and Drive of Functional Devices
- Smart Materials
- RF and Wireless Communication, Multipath
- Power Electronics
- Universal Soliton Traits across Different Physical Systems: The Case of Conservative and Dissipative Mechanisms

- Optics, Photonic, Nanophotonic and Plasmonics
- Advanced Electromagnetics for Communications in Dissipative Media and Difficult Environments
- Fault Detection, Diagnosis and Tolerant Control
- Electromagnetic Methods and Instruments for Non Destructive Testing Applications of Ground Penetrating Radar
- Radar Signal Processing, Target Recognition and Identification
- Medical Electromagnetics, RF Biological Effect, MRI
- Electromagnetic Simulations and Applications
- Electromagnetic Theory
- Microwave and Millimeter Wave Integrated Circuits Design
- Fiber Optics, Optical Sensors
- Safety and Electromagnetic Compatibility in Ubiquitous Health Environment
- Electromagnetic Property and Measurement
- EM Theory: Waves and Media
- Ground Penetrating Radar (GPR) for Civil Engineering Applications
- Scattering, Rough Surface Scattering and Remote Sensing
- Apparatus for Biological, Medical and Industrial Applications of EM Field
- Nonlinear Dynamics in Magnetically Confined Plasmas and Photonic Systems
- Computational Electromagnetics
- Earth Electromagnetic Environment and Radiowaves Propagation & Scattering: Modelling, Method, Observation and Measurements

1.3 EuCAP2011

The 5th European Conference on Antennas and Propagation

Following the success of previous editions, the European Association on Antennas and Propagation (EurAAP) held the 5th European Conference on Antennas and Propagation, EuCAP 2011, in Rome, Italy, on 11-15 April 2011, at EUR Congressi. EuCAP 2011, supported by the top level Associations in Antennas & Propagation, provides, through its presentations and exhibition, the ideal place for the exchange of scientific and technical information, both at academic and industrial levels, and fosters collaboration and cooperation in the Antenna & Propagation domain both at European and global levels. About 500 high quality papers and 400 poster presentations analysed the impact and role of antennas and propagation technology in present and future applications.

1.4 Statistics

Date: 11–15 April, 2011

Venue: EUR Congressi in Rome, Italy

Web page: <http://www.eucap2011.org/>

Number of oral presentations: 784

Number of poster presentations: 227

Oral contributions from Japan: 42

Poster contributions from Japan: 10

1.5 Technical sessions

- New challenges on Ultra Wide Band antennas & systems
- User mobile terminal antennas
- Metamaterial applications
- New trends on MIMO Systems and smart antennas
- Integral Techniques in Electromagnetics (INTELECT)
- Channel modelling for free space optical links
- Pattern Comparison Techniques
- MIMO Systems: Channel Characterization and Antenna-Channel Interactions
- Research challenges in RF exposure assessment
- Rough surface and random media scattering
- Radar imaging and sensing
- Small antennas
- RFID technologies
- Antenna interactions and coupling
- The future of computational electromagnetics: science or product?
- Innovative array antennas
- Antennas and propagation: automotive applications
- From channel models to channel impacts on wireless communications
- Wireless systems antenna measurements
- Millimeter-wave & integrated antennas and systems
- Propagation models for millimetre and sub millimetre waves
- Propagation in Body Area Networks
- Propagation aspects in Wireless Sensor Networks
- Microwave imaging and sensors for medical applications
- Wearable antennas
- Array antennas
- MIMO, smart and signal processing antennas
- Beamforming, data processing and multiple beam antennas
- Automotive antennas
- Mobile communication
- Advances in indoor and outdoor test ranges
- Planar and conformal antennas
- Propagation models for automatic network planning
- Spectral methods
- Antennas for remote sensing and radio astronomy
- Biological effects of Electromagnetic Fields
- New materials, metamaterials, EBG structures

- Terahertz Antennas & Systems
- Antennas for space applications
- Reflector and lens antennas
- Channel modelling for radio systems from L to W band
- Fast Antenna Near field Measurement Techniques
- Mobile propagation and scattering from buildings and vegetation
- Multiband, wideband, UWB antennas
- Advances in EM field measurements
- Transformation electromagnetics
- Numerical Methods for Challenging Multi-Scale Problems
- Small antennas, RFID tags and sensors
- Body Implanted antennas
- Mobile communication
- RCS reduction, prediction, imaging and related theory
- Propagation for maritime and aeronautical applications
- Time domain methods
- Mobile propagation channel measurements
- Electromagnetic exposures and interactions
- Reflectarrays
- Millimeter/Submillimeter wave and THz technologies
- Innovative design and applications of reconfigurable antennas
- Focusing systems, lenses, and reflectors
- Land Mobile Satellite propagation channel modelling
- General Antenna Measurements
- Multi-dimensional propagation models for next generation systems
- Propagation for fixed satellite services
- Phased-array and adaptive antenna testing
- On-Body Wearable Antennas
- Sensor Networks: Pervasive Electromagnetics for Sensing and Tracking
- Active and integrated antennas
- Inverse problems and optimization techniques
- Measurement algorithms and processing techniques
- Mobile propagation channel modelling
- Other antenna topics
- Numerical methods
- Space application antennas
- Medical applications
- Reconfigurable antennas

- Earth-space propagation effects: measurements, modelling and mitigation
- Antenna diagnostics
- Wireless Power Transmission and Energy Harvesting
- MIMO propagation and system aspects
- Parallelisation and fast solver techniques for numerical methods
- Advances in computerassisted design of antennas including requirements, modelling, algorithms
- Integral equations methods

2 Future Conferences

2.1 APS/URSI2011

The 2011 IEEE International Symposium on Antennas and Propagation and USNC/URSI National Radio Science Meeting

Date: 2–6 July, 2011

Venue: The Spokane Convention Center, Spokane, Washington, U.S.A.

Web page: <http://www.apsursi2011.org/>

2.2 IGARSS2011

2011 IEEE International Geoscience and Remote Sensing Symposium

Date: 24–29 July, 2011

Venue: Vancouver Convention Center, Vancouver, Canada

Web page: <http://igarss11.org/>

2.3 PIERS2011, Suzhou

The 30th PIERS 2011 in Suzhou, China

Date: 12–16 September, 2011

Venue: Grand Metropark Hotel Suzhou, Jiangsu, China

Web page: <http://www.piers.org/piers2011Suzhou/>

2.4 ISAP2011

International Symposium on Antennas and Propagation

Date: 25–28 October, 2011

Venue: Lotte Hotel Jeju, Jeju, Korea

Web page: <http://www.isap2011.org>

2.5 PIERS2012, Kuala Lumpur

The 31st PIERS 2012 in Kuala Lumpur, Malaysia

Date: 27–30 March, 2012

Venue: TBD

Web page: <http://piers.org/piers2012KualaLumpur/>