

ICECom 2019 - Conference Program

Monday, 30 th September 2019	Hall A
Opening Ceremony (09:00 – 09:10)	

Monday, 30 th September 2019	Hall A
Plenary Session (09:10 – 11:10)	
Chairs: Davor Bonefačić and Juraj Bartolić	

09:10	Boris Tomasic Self-Calibration and Mutual Coupling Compensation in Digital Beamforming Arrays <i>Keynote lecture</i>
10:10	Karu Esselle Leaky-Wave Antennas: From Niche Applications to Mass Market <i>Keynote lecture</i>

Monday, 30 th September 2019	Hall A
Advances in Medical Applications of Electromagnetic Fields (1st part) (11:40 – 13:00)	
Session organizers: Lorenzo Crocco, Alessandro Fanti and Matteo Bruno Lodi	
Chairs: Alessandro Fanti and Matteo Bruno Lodi	

11:40	Giacomo Muntoni, Alessandro Fanti and Giorgio Montisci Multi-disciplinary Approach of Microwave Hyperthermia Treatment
12:00	Eric Lemmer, Daniel Schmiech, Simon Mueller, Aly Marnach, Thull René and Andreas Diewald Development of a 24 GHz Front-End and first test measurements for Breathing and Heartbeat Monitoring inside a Cot
12:20	Jorge Alberto Tobon Vasquez, Rosa Scapaticci, Giovanna Turvani, Gennaro Bellizzi, Nadine Joachimowicz, Bernard Duchêne, Mario Roberto Casu, Lorenzo Crocco, Francesca Vipiana and Enrico Tedeschi Design and Experimental Testing of a Microwave Device for Monitoring Cerebrovascular Diseases
12:40	Igor Bisio, Claudio Estatico, Alessandro Fedeli, Fabio Lavagetto, Gian Luigi Mancardi, Matteo Pastorino, Andrea Randazzo and Andrea Sciarrone A Microwave Imaging System for the Characterization of Brain Stroke: Testing Against Simulated and Experimental Data

Monday, 30 th September 2019	Hall B
Antenna Arrays (11:40 – 13:00)	
Chairs: Sergey Shabunin and Juraj Bartolić	

11:40	Sergey Shabunin, Juraj Bartolic and Danil Trifonov Minimization of the Phase Shifter Control Current in Antenna Arrays with Switchable Radiation Patterns
12:00	Giulia Buttazzoni, Fulvio Babich, Riccardo Tuninato, Francesca Vatta and Massimiliano Comisso Phase-Only Pattern Synthesis with Interference Suppression for Large-Scale Antenna Arrays
12:20	Giada Maria Battaglia, Tommaso Isernia and Andrea Francesco Morabito Optimal Antenna Array Pattern Synthesis via Hybrid Optimization
12:40	Andreas Diewald and Simon Mueller Fast and Easy Implementation of a Leaky Wave Antenna for the 24 GHz ISM Band

Monday, 30 th September 2019	Hall A
Advances in Medical Applications of Electromagnetic Fields (2nd part) (14:30-16:30)	
Session organizers: Lorenzo Crocco, Alessandro Fanti and Matteo Bruno Lodi	
Chairs: Alessandro Fanti and Matteo Bruno Lodi	

14:30	Matteo Bruno Lodi, Andrea Vargiu, Alessandro Fanti, Luca Zanatta and Giuseppe Mazzearella A Mathematical Model for Magnetically Targeted Drug Delivery Using Magnetic Prosthetic Implants for Bone Tissue
14:50	Daniela M. Godinho, João M. Felício, Carlos A. Fernandes and Raquel C. Conceição Feasibility Study of Focal Lens for Multistatic Microwave Breast Imaging
15:10	Michele Alessandro Chiapperino, Claudio Maria Lamacchia, Angelo Palmisano, Pietro Bia, Alessandro Miani and Luciano Mescia Electroporation Modelling Based on the Effective Thickness of Irregularly Shaped Cell Membrane and the Dynamics of Pore Sizes
15:30	Cemanur Aydinalp, Sulayman Joof and Tuba Yilmaz Sensing Depth Analysis of Open-Ended Coaxial Probe for Skin Cancer Detection
15:50	Sassan Schäfer, Simon Mueller, Daniel Schmiech and Andreas Diewald Evaluation of Antenna Pattern for Vital Sign Monitoring of Elderly People
16:10	Lorenz Dirksmeyer, Daniel Schmiech and Andreas Diewald Separation of Two Close Targets in CW-Radar Measurement in the Example of Respiration Monitoring

Monday, 30 th September 2019	Hall B
Microwave and RF Devices and Circuits (14:30-16:30)	
Chairs: Denis Letavin and Ivan Lujo	

14:30	Toshiki Tabei, Zhewang Ma and Masataka Ohira A Compact Wideband Bandstop Filter Using Microstrip Ring Structure
14:50	Francesco Chiadini, Roberta De Simone, Vincenzo Fiumara and Antonio Scaglione Fractal Defected Ground Microstrip
15:10	Denis Letavin Design of a Compact Directional Coupler on a Flexible Substrate
15:30	Denis Letavin Microstrip Matrix Butler Area which is Reduced by the use of Compact Directional Couplers
15:50	Linlin Wu and Kaiyuan Lu Investigate a New Type of Vibration-Driven Based Active Actuator for Capsule Robot
16:10	Ivan Lujo, Marko Bosiljevac and Zvonimir Sipus Comparison of Different Statistical Methods for Specklegram-Based Fiber Optic Vibration Sensor

Monday, 30 th September 2019	Hall A
Measurement Techniques for Antennas and Targets RCS (17:00 -19:00)	
Session organizers: Francesco D'Agostino and Claudio Curcio	
Chairs: Francesco D'Agostino and Claudio Curcio	

17:00	Amedeo Capozzoli, Claudio Curcio and Angelo Liseno Sensitivity Analysis of the Singular Value Optimization Method for Antenna Characterization
17:20	Francesco D'Agostino, Flaminio Ferrara, Claudio Gennarelli, Rocco Guerriero and Massimo Migliozzi Laboratory Tests Validating a Non-Redundant NF/FF Transformation with Spherical Spiral Scan for Non-Centered Mounted Long Antennas
17:40	Pax Wei RCS Measurements on Extended Objects for Radar Field Probes
18:00	Luca Olmi, Pietro Bolli, Luca Carbonaro, Luca Cresci, Andrea Donati, Pasqualino Marongiu, Enzo Natale, Renzo Nesti, Dario Panella and Daniela Mugnai Simulations and Tests of a Super-Resolving Optical Module Using a Satellite Antenna
18:20	Stefania Matteoli, Lorenzo Ciorba, Fabio Paonessa, Giuseppe Virone, Giuseppe Addamo, Oscar A. Peverini, Pietro Bolli, Giuseppe Pupillo, Kristian Zarb Adami, Alessio Magro, Eloy de Lera Acedo, Edgar Colín-Beltrán and Nima Razavi Ghods UAV-based Far-Field Measurements on the SKA Aperture Array Verification System
18:40	Giacomo Muntoni, Luca Schirru, Giorgio Montisci, Tonino Pisanu and Marco Simone The New Space Debris Dedicated Receiving Chain of the Sardinia Radio Telescope

Monday, 30 th September 2019	Hall B
Communication Systems – Characterization and Components (17:00 -19:00)	
Chairs: Sandra Costanzo and Radovan Zentner	

17:00	Martin Erb, Christian Steger, Josef Preishuber-Pflügl and Martin Troyer An Automated Measurement System for Modeling and Characterization of NFC Communication Systems
17:20	Sandra Costanzo, Francesca Venneri and Giuseppe Di Massa Liquid Crystal-Based Reconfigurable Reflectarray Cells for 5G Systems
17:40	Marco Simone An Automatic Design of 5G Antennas through PSO and CST
18:00	Kai Liu, Cheng Tao, Liu Liu and Tao Zhou Low-Complexity Antenna Selection in Low-Resolution Massive MIMO Systems
18:20	Guichao Chen, Kai Liu, Cheng Tao, Liu Liu and Tao Zhou Performance Analysis of Millimeter Wave Massive MIMO System with Low-Precision ADCs
18:40	Goran Belačić and Radovan Zentner Mobile Network based Geolocation Estimation System Consisting of an Online Database and Android Application

Tuesday, 1 st October 2019	Hall A
Numerical Methods and High Performance Computing in Electromagnetics (08:30 -10:10)	
Session organizers: Alessandro Fanti, Angelo Liseno and Santi Concetto Pavone	
Chairs: Alessandro Fanti and Angelo Liseno	

08:30	Dragan Poljak, Anna Susnjara, Vicko Doric, Silvestar Sesnic, Mario Cvetkovic and Hrvoje Dodig On Some Multiphysics Models for Electromagnetic-Thermal-Hydrodynamics (ETHD) Analysis
08:50	Tomoaki Nagaoka GPU Acceleration of Largescale Multiphysics Simulation Coupled Electromagnetic and Thermal Fields
09:10	Amedeo Capozzoli, Claudio Curcio and Angelo Liseno Non-Uniform FFT (NUFFT) Algorithms for Antenna Radiation
09:30	Jorge Alberto Tobon Vasquez, Zhen Peng, Jin-Fa Lee, Giuseppe Vecchi and Francesca Vipiana Mesh Refinement for Surface Integral Equations based on Residual Error Estimation
09:50	Aleksey Karpov, Sergey Knyazev, Lubov Lesnaya and Sergey Shabunin How the Green's Functions May Be Used for Correct Measurements of Homogeneous and Inhomogeneous Dielectric Sheets

Tuesday, 1 st October 2019	Hall B
Radar and Remote Sensing (08:30 – 10:10)	
Chairs: Lara Pajewski and Juraj Bartolić	

08:30	Lara Pajewski and Simone Meschino
	SPOT-GPR Analysis of Ground Penetrating Radar Signals Recorded over the Limestone Region of the IFSTTAR Geophysical Test Site: Preliminary Results
08:50	Riza Erhan Akdogan and Yasemin Altuncu
	Reconstruction of 3D Objects Buried Under Into Half-Space by Using Variational Born Iterative Method
09:10	Ryosuke Kato, Masaharu Takahashi, Nozomu Ishii, Qiang Chen and Hiroshi Yoshida
	Investigation of a 3D Undersea Positioning System Using Electromagnetic Waves
09:30	Manuel Steins and Andreas Diewald
	Digital Doppler Effect Generation with CORDIC Algorithm for Radar Target Simulations
09:50	Lara Pajewski
	An Overview of the Educational Activities on Ground Penetrating Radar Carried out in COST Action TU1208

Tuesday, 1 st October 2019	Hall A
Compact Antennas, Wearable Antennas and Sensors: Design Issues, Modeling and Experimentation (10:40 – 12:20)	
Session organizers: Sandra Costanzo	
Chairs: Sandra Costanzo and Davor Bonefačić	

10:40	Sandra Costanzo and Giovanni Ammendola Compact Textile Wearable Antenna for Security Applications
11:00	Sandra Costanzo and Vincenzo Cioffi Dielectric Models for the Accurate Design of Wearable Diabetes Sensors
11:20	Davor Bonefacic and Juraj Bartolić Effects of Moisture on Resonant and Wideband Textile Antennas
11:40	Hisashi Morishita A Broadband Printed Antenna with Radiation Patterns of Dipole
12:00	Hisashi Morishita A Simple Method for Decoupling of Two PIFAs by Using Parasitic Elements

Tuesday, 1 st October 2019	Hall B
Propagation Measurements and Models (10:40 – 12:20)	
Chairs: Tomaž Javornik and Radovan Zentner	

10:40	Klemen Bregar, Tomaž Javornik, Andrej Hrovat, Mihael Mohorčič and Gorazd Kandus Passive Ultra-Wideband Coarse Localization and Activity Detection System for Assisted Living
11:00	Andrej Hrovat, Ke Guan, Teodora Kocevaska and Tomaž Javornik 3D Indoor Environment Characterization based on Radio Scanning: Initial Idea and Methodology
11:20	Nada Bel-Haj-Maati, Nadine Malhouroux, Patrice Pajusco and Michel Ney Massive MIMO Channel Measurements and Simulations at 3.7 GHz in Outdoor Environment
11:40	Branimir Ivšić, Zvonimir Šipuš, Juraj Bartolić and Josip Babić Modelling of Ultrawideband Propagation Scenarios for Safe Human-Robot Interaction in Warehouse Environment

Wednesday , 2 nd October 2019	Hall A
Fundamental Limits and Optimal Antennas (09:00 – 11:00)	
Session organizers: Anja Skrivervik and Zvonimir Šipuš	
Chairs: Anja Skrivervik and Zvonimir Šipuš	

09:00	Miloslav Capek, Lukas Jelinek, Mats Gustafsson and Vit Losenicky Fundamental Bounds on Dissipation Factor for Wearable and Implantable Antennas
09:30	Mats Gustafsson and Miloslav Capek Physical Bounds on Antennas in Complex Environments
10:00	Andrea Neto, Angelo Freni, and Nuria Llombart The Observable Field: a Review
10:30	Anja Skrivervik, Marko Bosiljevac, Isabel Santos and Zvonimir Šipuš Design of in-Body Antennas Based on Fundamental Radiation Limitations

Wednesday , 2 nd October 2019	Hall B
Active Electromagnetic Structures (9:00 – 11:00)	
Chairs: Silvio Hrabar and Ivan Bonić	

9:00	Silvio Hrabar Active Electromagnetic Structures – Past, Present, and Future <i>Invited introductory talk</i>
9:20	Francesco Chiadini, Roberta De Simone, Vincenzo Fiumara and Antonio Scaglione Temperature Dependent Defect Modes at Terahertz Regime
9:40	Ivan Bonić and Silvio Hrabar Dispersion Analysis of Active Artificial EM Structures using Method of Complex Trajectory
10:00	Leo Vincelj, Silvio Hrabar and Igor Krois Non-linear Model of Negative Impedance Converter for use in non-Foster Circuitry
10:20	Ante Brizic, Silvio Hrabar, Dominik Zanic and Igor Krois Investigation of Imittance Inverter based on Band-pass Non-Foster Negative Capacitor
10:40	Aleksandar Kiricenko and Silvio Hrabar Quadrature non-Foster-inspired Matching of Short Transmitting Dipole: Basic Preliminary Experiments

Wednesday , 2 nd October 2019	Hall A
Biomedical and Electromagnetic Compatibility Issues (11:30 – 13:50)	
Chairs: Masaharu Takahashi and Dragan Poljak	

11:30	Artur de São José, Virginie Deniau, Úrsula Resende and Ricardo Adriano Mitigating Intentional Electromagnetic Interferences over the GSM-R System with Adaptive Filters
11:50	Dragan Poljak, Marin Galić and Lara Pajewski Analytical Calculation of Integral Measures for Quantifying Human Exposure to HF Signals with Continuous Spectra
12:10	Zeynep Macit, Cemanur Aydinalp, Ayse Buse Ozdabak Sert, Fatma Nese Kok and Tuba Yilmaz Microwave Dielectric Properties of Osteosarcoma Cell Line (SAOS-2) Suspensions
12:30	Kazuyuki Saito, Masaharu Takahashi, Tomoaki Nagaoka and Soichi Watanabe SAR Evaluations of Phantom Surface Close to Wireless LAN Router with Beam Steering Technique
12:50	Aly Marnach, Daniel Schmiech, Jonas Berg, Simon Mueller, Candido Vieira and Andreas Diewald Electromotive Dummy for Simulation of Breathing and Heart Beat Physiology
13:10	Aly Marnach, Daniel Schmiech and Andreas Diewald Illumination Coverage Measurement of an I/Q-Radar System for a Baby Incubator
13:30	Antonio Šarolić and Anđela Matković Effect of the Coaxial Dielectric Probe Diameter on Its Permittivity Sensing Depth at 2 GHz – Simulation Study

Wednesday , 2 nd October 2019		Hall B	
Reflectarrays and Metasurfaces (11:30 – 13:30)			
Session organizers: Sandra Costanzo and Francesca Venneri			
Chairs: Zvonimir Šipuš and Zoran Ereš			
11:30	Jordan Budhu and Anthony Grbic		
	A Rigorous Approach to Designing Reflectarrays		
11:50	Muhamamd Usman Afzal, Ali Lalbakhsh, Touseef Hayat and Karu Esselle		
	Recent Progress on Development of Near-Field Structures for Radio-Frequency Front-End Antennas		
12:10	Tamami Maruyama, Qiang Chen and Noriharu Suematsu		
	Applied Reflectarray Based on Metasurface for Wireless Power Transmission Efficiency		
12:30	Dominik Barbarić, Marko Bosiljevac and Zvonimir Šipuš		
	Analysis of Cascaded Curved Metasurfaces with Spatially-Varying Impedance Distribution		
12:50	Damir Zidar and Silvio Hrabar		
	Circuit-Theory Interpretation of Space Harmonics Interaction in Glide-Symmetry Structures		
13:10	Zoran Ereš, Marko Bosiljevac and Zvonimir Šipuš		
	Realization of Gap-Waveguide Leaky Wave Antenna Using Low-Cost Metallization Procedure		

Wednesday , 2 nd October 2019	Hall A
Closing Ceremony (13:50 – 14:20)	