



XXIII RiNEm – Scientific Program

The awards will be assigned by the following Commissions:

Barzilai prize: Sandra Costanzo, Gaetano Marrocco, Luca Perregrini

Sannino prize: Oscar Antonio Peverini, Nazzareno Pierdicca, Andrea Randazzo

Someda prize: Andrea Galtarossa, Costantino De Angelis, Michele Midrio

Latmiral prize: Ovidio Mario Bucci, Alessandra Costanzo, Maurizio Migliaccio

Sorrentino prize: Pietro Bolli, Lorenzo Crocco, Matteo Pastorino

All the presentations will be held in English

Thursday, 26 November 2020

9:00 Welcome address
G. Mazarella, University of Cagliari, President of SIEM
G. Schettini, “Roma Tre” University, Chair of XXIII RiNEm

09:20 – 12:20 Session 1 – Barzilai Prize

Chairperson: Costanzo Sandra, University of Calabria
Marrocco Gaetano, University of Rome “Tor Vergata”

09:20-09:35
L. Berretti
Synthesis of large linear phased arrays via phase-only technique

09:40-09:55
D. Comite
Decorrelation of scattered signals of opportunity

10:00-10:15
L. De Laurentiis
Shoreline extraction through multipol SAR data-fusion and neural networks combination

10:20-10:35
A. Fedeli, C. Dachena
Towards microwave-based diagnosis of cervical diseases: initial experimental tests

10:40-10:55
D. Bilibashi

Dynamic ray tracing: 3D general algorithm for reflections from moving objects

11:00-11:15

M. Salucci, B. Li , A. Benoni

Smart EM environment: a new player in communication and sensing

11:20-11:35

S. C. Pavone

Asymptotic model, holographic synthesis and fabrication of transverse-polarized Bessel beam launchers for near-field focusing at microwaves

11:40-11:55

G. Guerra

A novel approach to coupled-mode analysis of geometric deformations in reciprocal waveguides

12:00 – 12:20 Coffee Break

12:20 – 14:00 Session 2 – Sannino Prize

*Chairperson: Pierdicca Nazzareno, University of Rome “La Sapienza”
Peaverini Oscar Antonio, CNR IEIIT Torino*

12:20-12:35

F. Benassi

2.45 GHZ energy-autonomous wearable sensor for ethanol detection

12:40-12:55

M. A. Maisto

An analytical approach for measurements' positioning in multimonostatic subsurface imaging

13:00-13:15

R. Palmeri

Design and optimization of EBG devices through inverse design and scattering matrices

13:20-13:35

R. K. Singh, A. Michel

A novel radiation pattern reconfigurable antenna switchable among broadside or conical pattern

13:40-13:55

G. S. Mauro, G. Torrisi

Hollow-core woodpile EBG coupler for dielectric laser accelerators

14:00 – 15:00 Lunch Break

15:00 – 17:20 Session 3 – Someda Prize

*Chairperson: De Angelis Costantino, University of Brescia
Galtarossa Andrea, University of Padova*

15:00-15:15

N. Curreli

Quadratic gain of optical parametric amplification in artificial crystals of WS₂

15:20-15:35

C. De Vita, C. Klitis

Si₃N₄ platform for visible range applications

15:40-15:55

M. Gandolfi, A. Tognazzi, D. Rocco, L. Carletti

Semiconductor metasurface refractive index sensing via optical radiation pattern

16:00-16:15

M. Petrini, M. Milanizadeh

FSR-free coupled microring resonators hitless photonic filter

16:20-16:35

D. Rocco, M. Gandolfi, C. Gigli

Nonlinear metasurfaces for wave control in the optical domain

16:40-16:55

R. Veronese

Exploiting Rayleigh signature for centimeter-resolved mode dispersion measurement in few-mode fibers

17:00-17:15

G. Marcon

A Machine Learning approach to spatially multiplexed distributed optical amplification in fibers

Friday, 27 November 2020

08:40 – 12:00 Session 4 – Latmiral Prize

*Chairperson: Costanzo Alessandra, University of Bologna
Migliaccio Maurizio, University of Napoli - Parthenope*

08:40-08:55

D. Brizzi

An analytical approach for the frequency response homogenization of magnetic metasurfaces

09:00-09:15

G. M. Bianco, G. Marrocco

Numerical and experimental evaluation of radiohelmet-to-UAV LoRa links

09:20-09:35

G. Buonanno, R. Solimene

Global side-lobe characterisation for random periodic arrays

09:40-09:55

E. Akbarisekhravani, G. Leone, R. Pierri

Born scattering by strip geometries: NDF in far-zone

10:00-10:15

A. Benoni, G. Oliveri

MbD paradigm for wide angle scanning phased arrays

10:20-10:35

V. Portosi, A. M. Loconsole, F. Prudenzano

A low-cost microwave needle applicators for cancer ablation

10:40-10:55

M. Wang, L. Crocco, M. Cavagnaro

Design of a vivaldi antenna for microwave imaging systems of ablation monitoring

11:00-11:15

F. Zardi, Y. Zhong, M. Salucci

Multi-resolution Through-the-Wall microwave imaging of strong scatterers

11:20-11:35

R. Moretta, M. A. Maisto, R. Pierri

A sampling strategy of the radiation operator in near-zone based on an asymptotic kernel

11:40-11:55

S. Nappi, G. Marrocco

RFID-Based stress predictive engineering

12:00 URSI Sessions

12:00 Carlo Carobbi, University of Florence, President of URSI Italian Committee
“The International Union of Radio Science (URSI) and its Italian and International Activities”

12:20 “Roberto Sorrentino” Award Session

Session Chair: Giuliano Manara, Secretary URSI Italian Committee

12:20 Introduction to the award session

12:30 Presentations of the three finalist papers (15 minutes plus 5 minutes questions each)

12:30-12:45

N. Curreli

Quadratic gain of optical parametric amplification in artificial crystals of WS₂

12:50-13:05

A. Michel, R. K. Singh

On the Use of Power Transfer Efficiency to Analyze the Performance of a 3D-Printed Wearable UHF RFID Antenna for Smart Gloves

13:10-13:25

J. A. Tobon V., L. Crocco, and F. Vipiana

A 3-D Microwave Imaging System for Brain Stroke Follow-up: Experimental Testing

13:30 Lunch Break

14:15 URSI Special Session

Session Chair: Carlo Carobbi, President URSI Italy

14:15 Giulia Sacco (Winner of the URSI GASS 2020 Student Paper Competition)

An FMCW Radar for Localization and Vital Signs Measurement for Different Chest Orientations

14:45 Giordano Spadacini (Commission E: Electromagnetic Noise and Interference)

The Threat of Radiated Intentional Electromagnetic Interference (IEMI): Deterministic and Statistical Prediction Models for Field Coupling to Cables and Systems

15:15 Federica Poli (Commission D: Electronics and Photonics)

Thermal effects on supermodes in Yb-doped multicore fibers for high-power lasers

15:45 Lorenzo Figini (Commission H: Waves in Plasma)

RF heating and diagnostic systems in magnetic confinement plasma devices for fusion power

16 :15 Coffee Break

16:30 Joint URSI-SIEm Award Ceremony

17:30 Closing of the meeting