2026 IEEE International Conference on Computational Electromagnetics

Technical Program

April 10-12, 2026

Crowne Plaza Shanghai Nanjing Road

Shanghai, China

https://iccem2026.tongji.edu.cn/

2026 Shanghai
ICCEM 10 - 12 April

2026 IEEE International Conference on Computational Electromagnetics (ICCEM 2026) will be organized by Tongji University, Shanghai, China, on April 10-12, 2026

For more information about ICCEM 2026, please visit the website at https://iccem2026.tongji.edu.cn/

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CONFERENCE VENUE

Crowne Plaza Shanghai Nanjing Road

No. 700 Jiujiang Road / No.719 Nanjing Road East, Huangpu District, 200001 Shanghai, P.R, China

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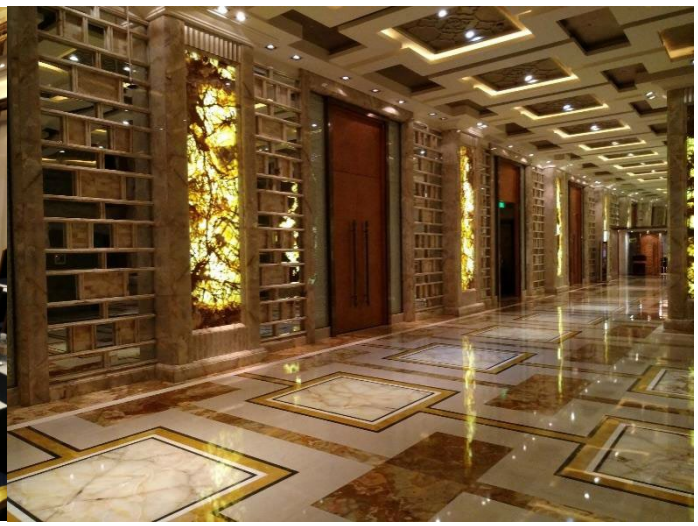
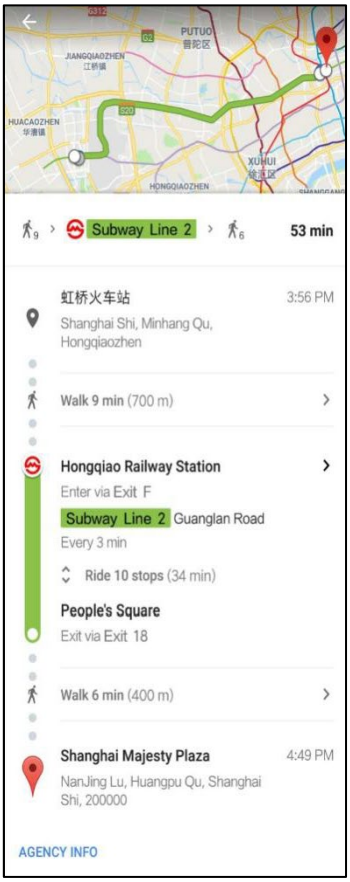
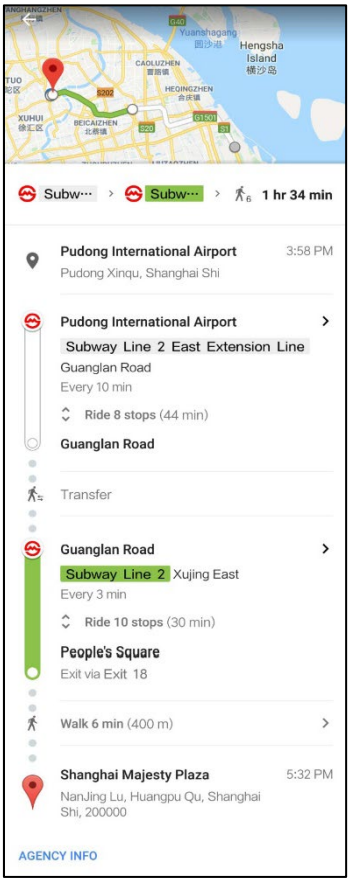
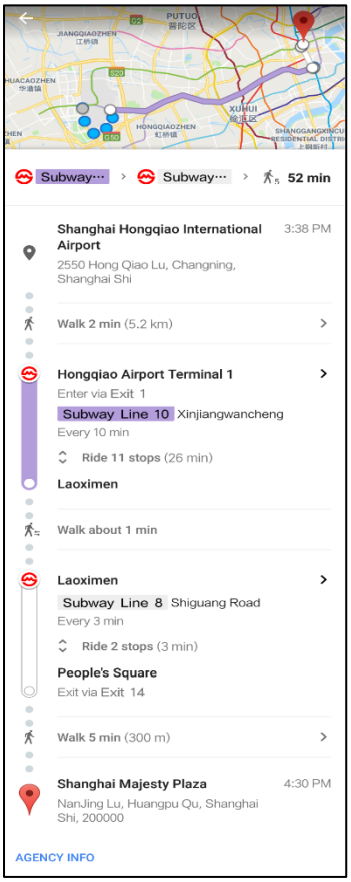


TRANSPORTATION

Shanghai has two major airports, Hongqiao international airport and Pudong international airport. The two airports, located in the east and west of Shanghai, respectively, are about 50 kilometers apart. Also, the public transportations have been well developed in Shanghai and you may reach any place by them.







CONFERENCE AT A GLANCE

Tuesday, April 9

Registration	**12:00-21:00**

Friday, April 10

Registration	**07:30-18:00**
AM:	
Opening Speech, *Meisong Tong, Tongji University*	**07:50-08:00**
Session: Keynote Speech *Chairs: Meisong Tong, Tongji University; Gaobiao Xiao, Shanghai Jiaotong University*	**08:00-12:20** ***Banquet AB, 5th Floor***
Keynote Speech I, *Leung Tsang, University of Michigan* *Multiple Scattering of Waves with Applications in Microwave Remote Sensing, Metasurfaces and Photonic Crystals*	**08:00-08:40**
Keynote Speech II, *Christophe Fumeaux, The University of Queensland* *From Mode to Beams: Simulation, Design and Implementation of Multi-Mode Antennas for Beamforming*	**08:40-09:20**
Keynote Speech III, *Andrea Massa, University of Trento* *Computational Electromagnetics for Smart EM Environments*	**09:20-10:00**
Tea Break	**10:00-10:20**
Keynote Speech IV, *Francesco Andriulli, Politecnico di Torino* *Complexity Breaking Complexities in Computational Electromagnetics: Best Practices for Leading through Difficult (Computational) Times*	**10:20-11:00**
Keynote Speech V, *Roberto Graglia, Politecnico di Torino* *Toward Seamless Refinement: Unifying Hybrid Elements and High-Order Singular Bases for 3D p/h-Conformity*	**11:00-11:40**
Keynote Speech VI, *Levent Sevgi, Istanbul Technical University* *From Engineering Electromagnetics to Electromagnetic Engineering: Teaching/Training Next Generations*	**11:40-12:20**
Lunch	**12:20-13:40**

PM:

Session: Keynote Speech(Online，Zoom Room:842 260 16929 Password: 927626) *Chairs: Meisong Tong,Tongji University; Gaobiao Xiao, Shanghai Jiaotong University*	**13:40-15:40** ***Vienna Hall, 3th Floor***
Keynote Speech VII, *Branislav M. Notaros, Colorade State University* *Higher Order Computational Electromagnetics: From Intellectual Curiosity to Practical Tools and Applications*	**13:40-14:20**
Keynote Speech VIII, *Weng Cho Chew, Purdue University* *Making Classical Electromagnetic Solution to be Quantum Compliant (Online)*	***14:20-15:00***
Keynote Speech IX, *C. J. Reddy, Altair Engineering* *Pushing the Boundaries of Computational Electromagnetics – Application to Antenna Designs, Placement, Co-site Interference Simulations and Digital Twins (Online)*	**15:00-15:40**
Session: DL Workshop Asia Series *Chair: Levent Sevgi, Istanbul Technical University*	**14:00-18:25** **Lyon Hall, 3th Floor**
DL Workshop Asia Series I, *Richard W. Ziolkowski, The University of Arizona* *Electrically Small Antennas: Advances in Efficiency, Bandwidth, and Directivity*	**14:00-14:45**
DL Workshop Asia Series II, *Özlem ÖZGÜN, Faculty of Engineering Hacettepe University* *Advanced Computational Electromagnetics: Beyond the Standard Numerical Modeling Techniques*	**14:45-15:30**
Tea Break	**15:40-16:10**
DL Workshop Asia Series III, *Maokun Li, Tsinghua University* *Electromagnetic Sensing and Imaging (for general audience)*	**16:10-16:55**
DL Workshop Asia Series IV, *Eng Leong Tan, Nanyang Technological University* *Explicit, Implicit and Fundamental Schemes for FDTD Methods in Electromagnetics Computation and Education*	**16:55-17:40**
DL Workshop Asia Series V: *Levent Sevgi, Istanbul Technical University* *Antennas, Arrays & Calibration: Beam Forming and Beam Steering*	**17:40-18:25**

Technical Sessions (Oral & Best Paper Award Competition)	**14:00-18:10**
Session: Integrated EM Sensing and Propagation Modeling for Intelligent Vehicular Networks ***Session Chairs:*** *Xia Wu, Tongji University; Xiuzhu Ye, Beijing Institute of Technology*	**16:10-18:10** **Vienna, 3rd Floor**
Session: Advances in Multiphysics Modeling and Simulation for Computational Electromagnetics: From Algorithms to Engineering Applications ***Session Chairs:*** *Ping Li, University of Electronic Science and Technology of China; Kai-Kun Niu, Anhui University*	**14:00-15:40** **Leeds Hall, 3rd Floor**
Session: RF Acoustic Devices for 5G/6G Applications and Space-Time Coding Metamaterials and Their Applications ***Session Chairs:*** Guo-Min Yang, Fudan University; Session Xiaoyi Wang, Tongji University; Xin Ou, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences	**16:10-18:10** **Leeds Hall, 3rd Floor**
Session: Advances on metasurfaces and applications of antennas ***Session Chairs:*** *Zhangjie Luo, Southeast University; Yongtao Jia, Xidian University; Sijia Li, Air Force Engineering University*	**14:00-15:20** **Sydney Hall, 3rd Floor**
Session: AI enhanced forward simulation and inverse problems ***Session Chairs:*** *Yunyun Hu, Tongji University; Qingtao Sun, Eastern Institute of Technology; Yiqian Mao, Southeast University*	**15:20-17:50** **Sydney Hall, 3rd Floor**
Session: Ulrich L. Rohde Innovative Conference Paper Awards & Best Student Paper Awards Competition ***Session Chairs:*** *Amir Boag, Tel Aviv University; Vladimir Okhmatovski University of Manitoba*	**14:00-17:30** **Marseilles Hall, 3rd Floor**
Interactive Forum (Poster)	**16:00-18:00**
Welcome Reception	**18:30-21:00**

Saturday, April 11

Registration	**08:00-18:00**
AM:	
Technical Sessions (Oral & Best Student Paper Award Competition)	**08:10-12:00**
Session: Best Student Paper Awards Competition ***Session Chairs:*** *Amir Boag, Tel Aviv University; Vladimir Okhmatovski, University of Manitoba*	**08:10-11:40** **Vienna, 3rd Floor**
Session: High-Performance Electromagnetic Computation and Multiphysics Simulations ***Session Chairs:*** *Juan Chen, Xi'an Jiaotong University; Zi He, Nanjing University of Science and Technology; Huan Huan Zhang, Xidian University; Meng Meng Li, Nanjing University of Science of Technology*	**08:10-12:00** **Lyon Hall, 3rd Floor**
Session: Electromagnetic scattering and inversion in complex environments ***Session Chairs:*** *Hongxia Ye, Fudan University; Anxue Zhang, Xi'an Jiaotong University; Yumao Wu, Fudan University*	***08:10-09:50*** ***Leeds Hall, 3rd Floor***
Session: Advances in Intelligent Electromagnetic Computation and Optimization Techniques ***Session Chairs:*** *Feng Xu, Fudan University; Shilei Fu, Fudan University*	***10:20-11:40*** ***Leeds Hall, 3rd Floor***
Session: Computational methods in analysis and design of metasurfaces ***Session Chairs:*** *Jun Wei Wu, Southeast University; Yunjing Zhang, Soochow University; Han Ru Shao, University of Electronic Science and Technology of China*	***08:10-12:00*** ***Sydney Hall***
Session: Self-Powered Wireless Sensing Technologies for Smart Environments ***Session Chairs:*** *Lei Guo, Dalian University of Technology*	***08:10-12:00*** **Marseilles Hall, 3rd Floor**
Tea Break	**09:50-10:20**
Interactive Forum (Poster)	**10:00-12:00**
Lunch	**12:00-14:00**

PM:

Technical Sessions (Oral)	**14:00-18:10**
Session: Electromagnetic Computation and Applications ***Session Chairs:*** *Siyuan He, Wuhan University; Qi Huang, National Key Laboratory of Scattering and Radiation; Zhidan Bian, Wuhan University*	**14:00-15:40** **Vienna Hall, 3rd Floor**
Session: Millimeter-wave Antenna Array ***Session Chairs:*** *Zhijiao Chen, Beijing University of Posts and Telecommunications; Yizhu Shen, Southeast University*	**16:10-18:10** **Vienna Hall, 3rd Floor**
Session: Advanced method for RF, Microwave, and Millimeter Wave Devices and Circuits ***Session Chairs:*** *Xingang Ren, Anhui University; Meng Kong, Hefei Normal University; Gang Wang, Anhui University*	**14:00-17:50** **Lyon Hall, 3rd Floor**
Session: Advanced Electromagnetic Computation, Optimization and Scattering-Functional Design ***Session Chairs:*** *Pengfei Gu, Nanjing University of Science and Technology; Zi He, Nanjing University of Science and Technology*	**14:00-18:10** **Leeds Hall, 3rd Floor**
Session: Time-Domain Computational Electromagnetics: Theory, Methods, and Applications ***Session Chairs:*** *Bing Wei, Xidian University; Lixia Yang, Anhui University*	**14:00-18:10** **Sydney Hall, 3rd Floor**
Session: Advances in Multi-Mode Antennas for 5G/B5G Communication ***Session Chairs:*** *Lei Guo, Dalian University of Technology; Wen-Wen Yang, Nantong University*	**14:00-17:50** **Marseilles Hall, 3rd Floor**
Tea Break	**15:40-16:10**
Interactive Forum (Poster)	**16:00-18:00**
Celebration Banquet and Best Paper Award Ceremony	**18:30-21:00**

Sunday, April 12

Registration	**08:00-18:00**
AM:	
Technical Sessions (Oral)	**08:10-12:00**
Session: Advanced Techniques in Multiphysics Modeling and Applications ***Session Chairs:*** *Yang Bao, Nanjing University of Posts and Telecommunications; Ting Wan, Nanjing University of Posts and Telecommunications*	**08:10-11:40** **Vienna Hall, 3rd Floor**
Session: Integral Equation-based Computational Techniques ***Session Chairs:*** *Amir Boag, Tel Aviv University; Vladimir Okhmatovski, University of Manitoba*	**08:10-11:00** **Lyon Hall, 3rd Floor**
Session: Numerical Methods in Electromagnetics and EM measurements ***Session Chairs:*** *Ming-Da Zhu, Xidian University; Yi-Xuan Zhang, Xidian University*	**08:10-11:20** **Leeds Hall, 3rd Floor**
Session: Trustworthy Electromagnetic Computation and Applications ***Session Chairs:*** *Jun Hu, University of Electronic Science and Technology of China*	**08:10-11:00** **Sydney Hall, 3rd Floor**
Session: Quantum Technologies Related to Electromagnetics ***Session Chairs:*** *Vladimir Okhmatovski, University of Manitoba; Chao-Fu Wang, Nanjing University of Science and Technology*	**08:10-12:00** **Marseilles Hall, 3rd Floor**
Tea Break	**09:50-10:20**
Interactive Forum (Poster)	**10:00-12:00**
Lunch	**12:00-14:00**

PM:

Technical Sessions (Oral)	**14:00-18:10**
Session: Advances in Electromagnetic Wave Propagation and Scattering: Methods, Models, and Applications ***Session Chairs:*** *Hao Qin, Sichuan University; Xinyue Zhang, University College Dublin; Xingqi Zhang, University of Alberta*	**14:00-15:40** **Vienna Hall, 3rd Floor**
Session: Advanced Computational Electromagnetics: Methods and Applications ***Session Chairs:*** *Xiaomin Pan, Beijing Institute of Technology; Shunchuan Yang, Beihang University*	**16:10-18:10** **Vienna Hall, 3rd Floor**
Session: AI-Driven Innovations in Electromagnetic Materials, Devices, and Computational Methods ***Session Chairs:*** *Menglin Zhai, Donghua Univerisity; Wu Yang, Southeast University*	**14:00-16:10** **Lyon Hall, 3rd Floor**
Session: Oral Session ***Session Chairs:*** *Meisong Tong, Tongji University; Li Zhang, Shanghai Polytechnic University*	**16:30-18:10** **Lyon Hall, 3rd Floor**
Session: Analysis of Electromagnetic Properties of Moving Targets ***Session Chairs:*** *Gaobiao Xiao, Shanghai Jiao Tong University; Lei Kuang, East China Normal University*	**14:00-16:50** **Leeds Hall, 3rd Floor**
Session: Advanced Numerical Strategies for Multiscale Electromagnetics and Multiphysics Coupling ***Session Chairs:*** *Wei E. I. Sha, Zhejiang University; Ming-Lin Yang, Beijing Institute of Technology*	**14:00-16:50** **Sydney Hall, 3rd Floor**
Session: Scientific Computing and Machine Learning in Geophysical Electromagnetic Prospecting ***Session Chairs:*** *Decheng Hong, Jilin University; Dikun Yang, Southern University of Science and Technology*	**14:00-15:40** **Marseilles Hall, 3rd Floor**
Session: Advances of EMplus and AI Technology in Interdisciplinary Research ***Session Chairs:*** *Naixing Feng, Anhui University; Yuxian Zhang, Anhui Unversity*	**16:10-18:10** **Marseilles Hall, 3rd Floor**
Tea Break	**15:40-16:10**
Interactive Forum (Poster)	**16:00-18:00**

CHAIRS' WELCOME

General Chairs

Meisong Tong, Tongji University

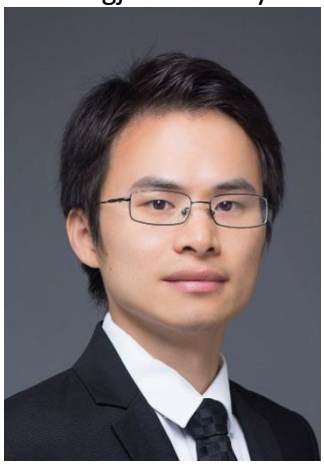
Guido Lombardi
Politecnico di Torino

Siyuan He
Wuhan University

Lei Qiu
Tongji University

Qing He
Tongji University

Xiaoyi Wang
Tongji University



Feng Xu
Fudan University

Chairs' Message

Dear Colleagues and Friends:

On behalf of the conference organizing committee, it is our great pleasure to invite you to come to the wonderful modernized city, Shanghai, China, for attending the 2026 IEEE International Conference on Computational Electromagnetics at Crowne Plaza Shanghai Nanjing Road on April 10-12, 2026. We will present and discuss the state-of-the-art research progresses and achievements on computational electromagnetics and its applications, and other achievements within the interest of IEEE Antennas and Propagation Society.

The conference is co-sponsored by the IEEE Antennas and Propagation Society (IEEE AP-S) and Tongji University, Shanghai, China. The conference will feature a diverse range of keynote talks, technical sessions, and interactive posters covering various topics related to antennas and propagation. The conference will also include two (2) Ulrich L. Rohde Innovative Conference Paper Awards on Computational Techniques in Electromagnetics which are open to all attended authors and six (6) Best Student Paper Awards which are only for attended students. Moreover, the conference will involve some well-known exhibitors to show their newest products and technologies related to antennas and propagation.

Shanghai is the largest modernized city in China and it is also the economic and technological center. There are many universities, research institutions, and industrial entities related to antennas and propagation. We hope our conference will provide a wonderful platform linking China to the whole world by sharing the research achievements in the field of antennas and propagation. We also believe that the conference will become an important event in promoting the rapid development on the theory and technology of antennas and propagation for the benefit of humanity.

We look forward to welcoming you to Shanghai in April 2026 and hope your conference experience will become both pleasant and memorable.

General Co-Chairs of ICCEM 2026

Prof. Meisong Tong, Tongji University, Shanghai, China General Chair
Prof. Guido Lombardi, Politecnico di Torino, Torino, Italy
Prof. Siyuan He, Wuhan University, Wuhan, China
Prof. Lei Qiu, Tongji University, Shanghai, China
Prof. Qing He, Tongji University, Shanghai, China
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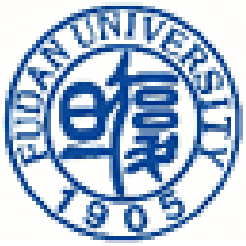

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Zhijiao Chen	Beijing University of Posts and Telecommunications

KEYNOTE SPEECHES

Friday, April 10, Banquet AB, 5th Floor

Keynote Speech I: Multiple Scattering of Waves with Applications in Microwave Remote Sensing, Metasurfaces and Photonic Crystals, Leung Tsang, University of Michigan, Ann Arbor, MI, USA

Leung Tsang *is a Professor of EECS, University of Michigan, Ann Arbor, USA. He is the lead author of four books: Theory of Microwave Remote Sensing and Scattering of Electromagnetic Waves (Volumes 1, 2, and 3). Dr. Tsang was the Editor-in-Chief of the IEEE TGRS from 1996 to 2000 and the President of the IEEE Geoscience and Remote Sensing Society (GRSS) in 2006 – 2007. He has been the Chair of PIERS since 2008. He was the recipient of the Distinguished Achievement Award from GRSS, the Golden Florin Award, the William Pecora Award co-sponsored by USGS and NASA, the IEEE Electromagnetics Award, and the van de Hulst Light Scattering Award. He is a Fellow of IEEE, Fellow of the Optical Society of America and a member of the U.S. National Academy of Engineering*.

ABSTRACT

Multiple scattering of waves is a complex phenomenon that exists in physical system. The Multiple scattering theory (MST) was initially studied by Foldy, Lax, Korringa and Ishimaru. Past theoretical work was based on analytic methods such as vector radiative transfer theory, Feynman diagrams, higher order Kirchhoff theory, AIEM etc. Our group recently advanced MST through efficient three-dimensional full-wave numerical solutions of 3D Maxwell's equations. Surface scattering simulations are based on the multilevel SMCG method. Volume scattering simulations are based on fast solutions of Foldy Lax multiple scattering equations. Accuracies of results have been validated by comparisons with commercial softwares. This paper reviews the recent results in: 1) Surface scattering by soil fractal surfaces and high wind ocean surfaces , with rms heights up to 3 wavelengths , showing backscattering enhancement and large cross polarization , 2) Volume scattering by forests and crop fields with several hundred trees and more than a thousand crops in the domain 3) wave scattering by metasurfaces with thousands of scatterers above a substrate and 4) band diagrams of photonic crystals with complex scatterers.

Keynote Speech II: Making Classical Electromagnetic Solution to be Quantum Compliant, Weng Cho Chew, Purdue University, West Lafayette, IN, USA

Weng Cho Chew received all his degress from MIT, between 1973-1980. He worked at Schlumberger-Doll Research between 1981-1985 where he was program leader and department manager. Then he joined U of Illinois, 1985-2017. He was Dean of Engineering, Hong Kong U, 2007-2011. In 2017, he joined Purdue U as a Distinguished Professor.

At UIUC, he was Director, Electromagnetics Laboratory, 1995-2007, Founder Professor of Engineering, 2000-2005, YT Lo Chair Professor, 2005-2009, then Distinguished Ann and George Fisher Professor, 2013-2017. He has published over 1,000 journal and conference papers, books, and lecture notes. He is an ISI highly cited author.

Moreover, he is a fellow of IEEE, OSA, IOP, EM Academy, HKIE, and winner of IEEE Graduate Teaching Award, Electromagnetics Award, CT Tai Distinguished Educator Award, best paper awards, IBM, ACES CEM awards, and SPWLA Pioneer Award. He is a member of US National Academy of Engineering, and is the Editor-in-Chief of PIER, and has both industry and academic experience. He is the President of IEEE Antennas and Propagation Society for 2018. His research interests are in wave physics and mathematics of inhomogeneous media, and fast algorithms for scattering and radiation problems. He originated several fast algorithms for electromagnetics scattering and multiple-scattering inverse problems. His research group solved dense matrices for scattering problems with tens of millions of unknowns first time ever. His recent interests are in multi-physics phenomena including quantum effects.

ABSTRACT

Classical electromagnetics has been with us for over 150 years. We can view 1865 as the harbinger of classical electromagnetics during when Maxwell added the displacement current to complete the four Maxwell's equations. It was in 1927 that Dirac introduced the quantum version of electromagnetics which he also called quantum electrodynamics (QED). We have called this quantum electromagnetics in line with the quantum optics community where we are more interested in developing quantum technologies, and the wavelengths can be many atomic spacing large.

Classical electromagnetics followed by computational electromagnetics have been with us for decades. With it, we have sleuth of modern technologies that have transformed our modern world. The most obvious is the emergence of wireless communications and the development of microchips and nanotechnologies.

While quantum electromagnetics has not been with us for as long, its potential for impact is tremendous. Thus, it presages ways to convert a classical solution into one that is quantum compliant. With this pathway, we can exploit the wealth of knowledge in classical electromagnetics, especially computational electromagnetics, to model quantum systems.

In this talk, we will discuss such possibilities, and how classical solutions can be used to model quantum weirdness.

Keynote Speech III: Higher Order Computational Electromagnetics: From Intellectual Curiosity to Practical Tools and Applications, Branislav M. Notaros, Colorade State University, Fort Collins, Colorado, USA

Branislav M. Notaros is a Professor of Electrical and Computer Engineering, Director of Electromagnetics Laboratory, and University Distinguished Teaching Scholar at Colorado State University. His research contributions are in computational and applied electromagnetics, antennas, and propagation. He was the recipient of the 1999 IEE Marconi Premium, 2005 IEEE MTT-S Microwave Prize, 2022 IEEE Antennas and Propagation Edward E. Altshuler Prize Paper Award, 2019 ACES Technical Achievement Award, 2014 Carnegie Foundation Colorado Professor of the Year Award, 2015 ASEE ECE Distinguished Educator Award, 2015 IEEE Undergraduate Teaching Award, and many other research and teaching awards. He is Fellow of IEEE "for contributions to higher order methods in computational electromagnetics" and Applied Computational Electromagnetics Society (ACES). Prof. Notaros serves as Immediate Past President of the IEEE Antennas and Propagation Society (AP-S) and ACES, Immediate Past Chair of the USNC-URSI Commission B, and Track Editor of the IEEE Transactions on Antennas and Propagation. He served as General Chair of the IEEE APS/URSI 2022 Denver Conference and several other conferences.

ABSTRACT

This keynote talk presents an overview of higher order computational electromagnetics (CEM), which historically was mainly an intellectual curiosity, and discusses advancements that have made it a practical tool for antennas and propagation (AP) developments and applications. Higher order CEM uses higher order current/field basis functions defined on large (e.g., on the order of a wavelength in each dimension) curvilinear geometrical elements, which greatly reduces the number of unknowns for a given problem and enhances the accuracy and efficiency of the analysis. Although it has been around for almost 60 years, there has been a gap between the academic and scientific interest in higher order CEM techniques, which evidently show great numerical potential, and their actual use in electromagnetics research and engineering applications. One way to contribute to closing this gap is to make higher order CEM methodologies, elements, and approximation functions more comprehensible and approachable, and more easily and confidently used by both CEM developers and practitioners, with as much automation and certainty as possible. To this end, this talk discusses a synergistic combination of error estimation and control, meshing, adaptive refinement, hp-methods, and uncertainty quantification for higher order CEM. We go from theoretical backgrounds and numerical implementations to practical applications of higher order CEM in AP designs and systems.

Keynote Speech IV: From Mode to Beams: Simulation, Design and Implementation of Multi-Mode Antennas for Beamforming, Christophe Fumeaux, The University of Queensland, Brisbane, Australia

Christophe Fumeaux received his Ph.D. degree from ETH Zurich, Switzerland, in 1997. From 1998 to 2008, he held various positions at the University of Central Florida, the Swiss Federal Office of Metrology, and ETH Zurich. From 2008 to 2023, he was a Professor with The University of Adelaide. In 2023, he joined the School of Electrical Engineering and Computer Science at The University of Queensland, as Chair Professor in Optical and Microwave Engineering. His main research interests concern applied electromagnetics, antenna engineering, and the application of RF design principles across the electromagnetic spectrum.

Prof. Fumeaux was the recipient of the ETH Medal for his doctoral dissertation. He was the recipient of the 2018 Edward E. Altshuler Prize, the 2014 IEEE Sensors Journal and the 2004 ACES Journal best paper awards. He was the recipient of the University of Adelaide 2018 Stephen Cole the Elder Award for Excellence in PhD Supervision. From 2017 to early 2023, he served as the Editor-in-Chief for the IEEE Antennas and Wireless Propagation Letters. He was 2025 President of the IEEE Antennas and Propagation Society and he is currently serving as IEEE AP-S Vice-President of Publications. He is a Fellow of the IEEE.

ABSTRACT

The growing demands of modern wireless communication technologies impose new challenges on antenna design and simulation. Antenna systems of increasing complexity, capable of delivering multiple dynamically accessible functionalities, are now essential to enhance capacity and support diverse roles in contemporary communications and sensing platforms.

This presentation focuses on the concept of multiport, multimode antennas, in which several independent radiating modes operating within the same frequency band are generated in a shared physical volume. These uncorrelated modes, tightly packed within a compact form factor, can significantly improve the agility and capacity of communications links through pattern diversity or Multiple Input Multiple Output (MIMO) operation.

Within this framework, the talk will outline techniques for efficiently realizing multiple independent modes in a limited volume. It will then illustrate how computational tools and global optimization algorithms can be leveraged to enable advanced beamforming by exploiting a large number of co located radiating modes. This approach supports full hemisphere beam steering and nulling with high consistency and across any polarization. The presented concept offers promising new opportunities for future distributed sensing and communication systems.

Keynote Speech V: Pushing the Boundaries of Computational Electromagnetics – Application to Antenna Designs, Placement, Co-site Interference Simulations and Digital Twins, C. J. Reddy, Altair Engineering, Troy, MI, USA

C.J. Reddy *is Siemens Fellow at Siemens Digital Industries Software. He served as Vice President, Business Development-Electromagnetics for Americas at Altair from 2014 to 2025 and transitioned to Siemens, with the acquisition of Altair by Siemens. Dr. Reddy was awarded the Natural Sciences and Engineering Research Council (NSERC) of Canada Visiting Fellowship to work at Communications Research Center in Ottawa during 1991-1993 and was awarded the US National Research Council (NRC) Resident Research Associateship in 1993 to work at NASA Langley Research Center in Hampton, Virginia. He also worked as Research Professor at Hampton University from 1995 to 2000. Dr. Reddy was the President of Applied EM, Inc (2000-2017) where he led several Phase I and Phase II SBIR projects for the DoD and NASA. He was also the President of EM Software & Systems (USA) Inc (2002-2014) and led the marketing of the EM Simulation tool, Feko in North America. EM Software & Systems (USA) Inc was acquired by Altair in 2014. Dr. Reddy is a Fellow of IEEE, Fellow of ACES (Applied Computational Electromagnetics Society) and a Fellow of AMTA (Antenna Measurement Techniques Association). Dr. Reddy is a co-author of the book, "Antenna Analysis and Design Using FEKO Electromagnetic Simulation Software," published in June 2014 by SciTech Publishing (now part of IET). Dr. Reddy served as an Associate Editor for IEEE Open Journal of Antennas of Propagation and IEEE Transactions on Antennas and Propagation. He served as the Chair of IEEE Antennas and Propagation Society (APS) Young Professionals Committee during 2021-2024 and served on the AP-S AdCom during 2023-2024. Dr. Reddy is appointed to IEEE Fellows Committee by IEEE Board of Directors for the terms 2020-2021 and 2022-2023. Currently, Dr. Reddy is serving as the 2026 IEEE AP-S President. Dr. Reddy is inducted into IEEE Heritage Circle by the IEEE Foundation for establishing the "IEEE AP-S CJ Reddy Travel Grant for Graduate Students."*

ABSTRACT

Simulation-driven design changed product development forever, enabling engineers to reduce design, iterations, and prototype testing. Increasing scientific computing power expanded the opportunity to apply analysis, making large design studies possible within the timing constraints of a program. This talk will focus on advanced CEM simulation tools that incorporate numerical methods, such as Method of Moments (MoM), Multilevel Fast Multipole Method (MLFMM), Finite Element Method (FEM), Finite Difference Time Domain (FDTD), Physical Optics (PO), Ray Lunching Geometrical Optics (RL-GO), and Uniform Theory of Diffraction (UTD). As the complexity of connected devices increases each day, designers are taking advantage of AI/ML to generate trained models for their physical antenna designs and perform fast and intelligent optimization on these trained models. Using the trained models, different optimization algorithms and goals can be run quickly, in seconds, that can be utilized for comparison studies, stochastic analysis for tolerance studies etc. Use of cloud computing combined with AI/ML, many design iterations can be performed in a short period and reducing the time to market. This talk will also focus on future trends in cloud computing for physics-based simulations and the emerging topics such as Digital Twins.

Keynote Speech VI: Computational Electromagnetics for Smart EM Environments, Andrea Massa, University of Trento, Trento, Italy

Andrea Massa *(IEEE Fellow, IET Fellow, Electromagnetic Academy Fellow) has been a Full Professor of Electromagnetic Fields @ University of Trento since 2005.*

At present, Prof. Massa is the director of the network of 19 federated laboratories "ELEDIA Research Center" located in Brunei, China, Czech, Ethiopia, France, Greece, Italy, Japan, Peru, USA, Tunisia with more than 150 researchers. Moreover, he is holder of a Chang-Jiang Chair Professorship @ UESTC (Chengdu – China), Visiting Research Professor @ University of Illinois at Chicago (Chicago – USA), Distinguished Visiting Professor @ Tsinghua (Beijing - China), and Visiting Professor as well as IAS Distinguished Scholar @ Tel Aviv University (Tel Aviv – Israel). He has been holder of a Senior DIGITEO Chair at L2S-CentraleSupélec and CEA LIST in Saclay (France), UC3M-Santander Chair of Excellence @ Universidad Carlos III de Madrid (Spain), , and Professor @ CentraleSupelec (Paris - France), Adjunct Professor at Penn State University (USA), Guest Professor @ UESTC (China), and Visiting Professor at the Missouri University of Science and Technology (USA), the Nagasaki University (Japan), the University of Paris Sud (France), the Kumamoto University (Japan), and the National University of Singapore (Singapore). He has been appointed IEEE AP-S Distinguished Lecturer (2016-2018) and served as Associate Editor of the "IEEE Transaction on Antennas and Propagation" (2011-2014).

His research activities are mainly concerned with inverse problems, antenna analysis/ synthesis, radar systems and signal processing, cross-layer optimization and planning of wireless/RF systems, system-by-design and material-by-design (metamaterials and reconfigurable-materials), and theory/applications of optimization techniques to engineering problems (coms, medicine, and biology).

Prof. Massa published more than 1000 scientific publications among which more than 400 on international journals (>19.500 citations – h-index = 71 [Scopus]; > 15.000 citations – h-index = 65 [ISI-WoS]; > 31.000 citations – h-index = 97 [Google Scholar]) and more than 600 in international conferences where he presented more than 255 invited contributions (> 70 invited keynote speaker) (www.eledia.org/publications). He has organized more than 90 scientific sessions in international conferences and has participated to several technological projects in the national and international framework with both national agencies and companies (22 international prj, > 5 M€; 21 national prj, > 5 M€; 10 local prj, > 2 M€; 67 industrial prj, > 10 M€; 6 university prj, > 300 K€).

ABSTRACT

The evolution of wireless communication systems towards 6G and beyond is driving a fundamental paradigm shift: the transition from traditional, passive wireless channels to Smart Electromagnetic Environments (SEME). Unlike conventional networks that treat the physical propagation channel as a static and uncontrollable entity, a SEME actively molds and

controls electromagnetic (EM) wave propagation to drastically enhance network performance. At the core of this technological revolution is Computational Electromagnetics (CEM). However, transforming the SEME concept into a tangible reality introduces unprecedented computational and design complexities that cannot be tackled by traditional engineering approaches alone.

More specifically, the successful realization of a Smart EM Environment fundamentally relies on the synergistic integration of advanced EM predictors and robust optimizers. A dual-scale computational framework is strictly required, operating simultaneously at the microscopic level (device design) and the macroscopic level (network planning and deployment).

At the device level, the combination of accurate CEM predictors (ranging from rigorous full-wave solvers to fast AI-driven surrogate models) and powerful optimization algorithms is essential for the synthesis of key enabling technologies. Modern networks rely on highly complex, multi-scale devices, including Smart Programmable Electromagnetic Surfaces (SP-EMS), Reconfigurable Intelligent Surfaces (RIS), Smart Repeaters, Integrated Access and Backhaul (IAB) nodes, and next-generation Base Transceiver Stations (BTS). Optimizers are deployed to systematically explore vast architectural design spaces, tuning unit cells, meta-atoms, and array configurations. Concurrently, predictors evaluate the scattering and radiation properties in real-time, ensuring that the designed devices can dynamically manipulate EM waves with high fidelity, high energy efficiency, and low latency.

Beyond the synthesis of individual hardware components, the predictor-optimizer synergy is critical during the macroscopic network planning and deployment phase. Fast and accurate EM predictors—such as advanced ray-tracing models integrated with machine learning—are necessary to evaluate the propagation characteristics of complex, electrically large urban or indoor environments. When coupled with system-level optimizers, these predictive tools enable the strategic placement, orientation, and real-time configuration of RIS, IAB nodes, and BTS across the territory.

The ultimate goal of combining CEM predictors and optimizers is to solve highly complex, multi-objective engineering problems. By accurately modeling the physical environment and intelligently deploying customized network nodes, it becomes possible to strictly minimize energy consumption and deployment costs (CAPEX and OPEX). Simultaneously, this methodology allows operators to maximize overall EM coverage, signal-to-interference-plus-noise ratio (SINR), and the Quality of Service (QoS) perceived by the end-users. Ultimately, an advanced computational framework driven by the continuous loop of accurate prediction and smart optimization is the absolute cornerstone for designing sustainable, cost-effective, and high-performance Smart EM Environments.

Keynote Speech VII: Complexity Breaking Complexities in Computational Electromagnetics: Best Practices for Leading through Difficult (Computational) Times, Francesco Andriulli, Politecnico di Torino, Turin, Italy

Francesco P. Andriulli received the Laurea in electrical engineering from the Politecnico di Torino, Italy, in 2004, the MSc in electrical engineering and computer science from the University of Illinois at Chicago in 2004, and the PhD in electrical engineering from the University of Michigan at Ann Arbor in 2008. From 2008 to 2010 he was a Research Associate with the Politecnico di Torino. From 2010 to 2017 he was an Associate Professor (2010-2014) and then Full Professor with the École Nationale Supérieure Mines-Télécom Atlantique (IMT Atlantique), Brest, France. Since 2017 he has been a Full Professor with the Politecnico di Torino, Turin, Italy. His research interests are in computational electromagnetics including frequency- and time-domain integral equation solvers, well-conditioned formulations, fast solvers, low-frequency electromagnetic analyses, and modeling techniques for antennas, wireless components, microwave circuits, and biomedical applications with a special focus on brain imaging.

Prof. Andriulli received several best paper awards at conferences and symposia (URSI NA 2007, IEEE AP-S 2008, ICEAA IEEE-APWC 2015) also in co-authorship with his students and collaborators (EMTS 2025, ICEAA IEEE-APWC 2021, EMTS 2016, URSI-DE Meeting 2014, ICEAA 2009) with whom received also a second prize conference paper (URSI GASS 2014), a third prize conference paper (IEEE – APS 2018), seven honorable mention conference papers (ICEAA 2011, URSI/IEEE – APS 2013, 4 in URSI/IEEE – APS 2022, URSI/IEEE – APS 2023) and other three finalist conference papers (URSI/IEEE-APS 2012, URSI/IEEE-APS 2007, URSI/IEEE-APS 2006, URSI/IEEE – APS 2022)). Moreover, he received the 2014 IEEE AP-S Donald G. Dudley Jr. Undergraduate Teaching Award, the triennium 2014-2016 URSI Issac Koga Gold Medal, and the 2015 L. B. Felsen Award for Excellence in Electrodynamics.

Prof. Andriulli is a Fellow of the IEEE and of the International Union of Radio Science (URSI), and a member of Eta Kappa Nu, Tau Beta Pi, and Phi Kappa Phi. He serves as the 2026 President-Elect of the IEEE Antennas and Propagation Society and served as IEEE AP-S Vice-President of Publications 2025, as Editor-in-Chief of the IEEE Antennas and Propagation Magazine, Track Editor for the IEEE Transactions on Antennas and Propagation and as an Associate Editor for the IEEE Antennas and Wireless Propagation Letters, IEEE Access, URSI Radio Science Letters, and IET-MAP.

ABSTRACT

Computational Electromagnetics (CEM) is a scientific discipline positioned at the intersection of electrical engineering, high-performance computing, and applied mathematics. It is primarily concerned with the modeling and simulation of complex electromagnetic phenomena that arise in advanced technological and scientific contexts. Historically, CEM has provided the predictive framework underlying a wide spectrum of applications in electrical and electronic engineering, optics, wireless communications, geophysical exploration, and biomedical systems.

In recent years, the scope of CEM has broadened significantly, engaging with an expanding range of interdisciplinary fields, including information retrieval, computational neuroscience, machine learning, and brain-computer interfaces. A pervasive trend across these domains is

the substantial growth in the dimensionality and scale of the problems to be addressed, driven by system miniaturization and increased component density. This evolution has led to escalating levels of computational complexity and, consequently, increased cost and effort associated with electromagnetic modeling, design, and simulation.

This talk will provide a comprehensive overview of the major challenges both longstanding and emerging, facing the field of CEM, with examples spanning from canonical problems to those of "Holy Grail"-like complexity. Emphasis will be placed on recent research efforts aimed at achieving paradigm shifts in simulation methodologies, with the objective of overcoming the computational bottlenecks inherent in conventional approaches and enabling significant performance gains. Applications discussed will include brain imaging and modeling, electromagnetic dosimetry, epilepsy diagnosis, and the development of brain-computer interfaces.

Keynote Speech VIII: Toward Seamless Refinement: Unifying Hybrid Elements and High-Order Singular Bases for 3D p/h-Conformity, Roberto Graglia, Politecnico di Torino, Torino, Italy

Roberto D. Graglia received the Laurea degree (summa cum laude) in Electronic Engineering from the Politecnico di Torino, Italy, in 1979, and the Ph.D. degree in Electrical Engineering and Computer Science from the University of Illinois Chicago (UIC), USA, in 1983. From 1980 to 1981, he was a Research Engineer at CSELT (now Telecom Italia Lab S.p.A.) in Torino, and from 1981 to 1983 he served as a Teaching and Research Assistant at UIC. He was a Lecturer at the Politecnico di Torino from 1984 to 1991 and a Researcher with the Italian National Research Council (CNR) from 1985 to 1992, where he led several international projects. He was also an Associate Visiting Professor at UIC in 1991 and 1993.

In 1992, Prof. Graglia joined the Department of Electronics and Telecommunications at the Politecnico di Torino as an Associate Professor and has been a Full Professor of Electrical Engineering since 1999.

Prof. Graglia has authored more than 220 publications in international journals and conference proceedings. He has been a member of the Editorial Board of Electromagnetics (Taylor & Francis) since 1997 and was one of three Guest Editors of the first ever Special Issue of the IEEE Transactions on Antennas and Propagation dedicated to Advanced Numerical Techniques in Electromagnetics (March 1997). He has served as Associate Editor for several leading IEEE journals, including the IEEE Transactions on Antennas and Propagation, IEEE Transactions on Electromagnetic Compatibility, and IEEE Antennas and Wireless Propagation Letters. He has also served the International Union of Radio Science (URSI) for its triennial International Symposia on Electromagnetic Theory.

Since 1999, Prof. Graglia has been the General Chairperson of the International Conference on Electromagnetics in Advanced Applications (ICEAA), and since 2011 he has also served as General Chairperson of the IEEE APS Topical Conference on Antennas and Propagation in

Wireless Communications (IEEE APWC). He was the 2015 President of the IEEE Antennas and Propagation Society (AP S), completing nine years on the IEEE AP S Administrative Committee. During his presidency, he initiated the IEEE Journal on Multiscale and Multiphysics Computational Techniques.

Prof. Graglia has been an IEEE AP S Distinguished Lecturer since 2009 and a Life Fellow of the IEEE since 1998. He is the recipient of the 2021 Harrington Mittra Award in Computational Electromagnetics and the 2025 IEEE AP S Distinguished Achievement Award. He is also a resident elected member of the Accademia delle Scienze di Torino, founded by Giuseppe Luigi Lagrange in 1783.

ABSTRACT

Multiscale and multiphysics numerical solvers for the analysis of complex three-dimensional (3D) structures must be able to handle hybrid meshes consisting of tetrahedra, hexahedra, prisms, and quadrilateral-based pyramids, even in the presence of curved geometries. Such meshes are widely adopted because they exploit the specific advantages of each element type. In structured or mildly curved regions, hexahedra and prisms typically offer higher accuracy and better computational efficiency, whereas tetrahedra naturally accommodate highly complex geometries. Prisms are also particularly effective in boundary-layer discretizations, where anisotropic refinement is required.

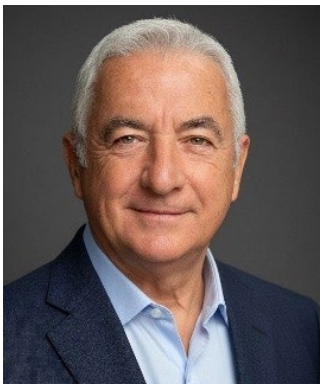
Pyramids, on the other hand, play a crucial role as transition elements: they are the only elements capable of consistently bridging mesh regions with triangular faces to those with quadrilateral faces. This transition cannot be achieved using prisms alone, which map triangles to triangles and quadrilaterals to quadrilaterals, keeping quadrilateral faces aligned with the extrusion direction and triangular faces transverse to it.

Over the past thirty years, together with several collaborators, we have developed interpolatory vector bases and high-order hierarchical vector bases for all major two- and three-dimensional element types, including—more recently—complete high-order bases for pyramidal elements. The inclusion of pyramidal bases has enabled unrestricted and conforming h-refinement across hybrid meshes.

For surface elements, we have also introduced singular additive bases specifically designed to capture field singularities at edges and corners with high fidelity.

This presentation will review the main results obtained so far and outline several promising directions for future developments in applied electromagnetics.

Keynote Speech IX: From Engineering Electromagnetics to Electromagnetic Engineering: Teaching/Training Next Generations, Levent Sevgi, Istanbul Technical University, Türkiye



Prof. Dr. Levent Sevgi *is a Fellow of the IEEE (since 2009) and the recipient of IEEE APS Chen-To Tai Distinguished Educator Award (2021). He was with Istanbul Technical University (1991 – 1998), TUBITAK-MRC, Information Technologies Research Institute (1999 – 2000), Weber Research Institute / NY Polytechnic University (1988 – 1990), Scientific Research Group of Raytheon Systems Canada (1998 – 1999), Center for Defense Studies, ITUV-SAM (1993 – 1998 and 2000 – 2002) and with University of Massachusetts, Lowell (UML) MA/USA as a full-time faculty (2012 – 2013), DOGUS University (2001-2014), Istanbul OKAN (2014 - 2021), and ATLAS (2022-2024) Universities.*

He served four years (2020-2023) as an IEEE AP-S Distinguished Lecturer. Since Jan 2024 he has been the chair of the IEEE AP-S DL Committee. He served one-term in the IEEE AP-S AdCom (2013-2015) and one-term and as a member of IEEE AP-S Field Award Committee (2018-2019). He had been the writer/editor of the "Testing ourselves" Column in the IEEE AP Magazine (2007-2021), a member of the IEEE AP-S Education Committee (2006-2021), He also served in several editorial boards (EB) of other prestigious journals / magazines, such as the IEEE AP Magazine (2007-2021), Wiley's International Journal of RFMiCAE (2002-2018), and the IEEE Access (2017-2019 and 2020 - 2022). He is the founding chair of the EMC TURKIYE International Conferences (www.emcturkiye.org).

He has been involved with complex electromagnetic problems for nearly four decades. His research study has focused on electromagnetic radiation, propagation, scattering and diffraction; RCS prediction and reduction; EMC/EMI modelling, simulation, tests and measurements; multi-sensor integrated wide area surveillance systems; surface wave HF radars; analytical and numerical methods in electromagnetics; FDTD, TLM, FEM, SSPE, and MoM techniques and their applications; bio-electromagnetics. He is also interested in novel approaches in engineering education, teaching electromagnetics via virtual tools. He also teaches popular science lectures such as Science, Technology and Society.

He has published many books / book chapters in English and Turkish, over 180 journal/magazine papers / tutorials and attended more than 100 international conferences / symposiums. His three books Complex Electromagnetic Problems and Numerical Simulation Approaches, Electromagnetic Modeling and Simulation and Radiowave Propagation and Parabolic Equation Modeling were published by the IEEE Press - WILEY in 2003, 2014, and 2017, respectively. His fourth and fifth books, A Practical Guide to EMC Engineering (Sep 2017) and Diffraction Modeling and Simulation with MATLAB (Feb 2021) were published by ARTECH HOUSE.

His h-index is 39, with a record of 5300+ citations (source: Google Scholar, Nov 2025).

ABSTRACT

The role of Electromagnetic (EM) fields in our lives has been increasing. Communication, remote sensing, integrated command/ control/surveillance systems, intelligent transportation systems, medicine, environment, education, marketing, and defense are only a few areas where EM fields have critical importance. We have witnessed the transformation

from Engineering Electromagnetics to Electromagnetic Engineering for the last few decades after being surrounded by EM waves everywhere. Among many others, EM engineering deals with broad range of problems from antenna design to EM scattering, indoor – outdoor radiowave propagation to wireless communication, radar systems to integrated surveillance, subsurface imaging to novel materials, EM compatibility to nano-systems, electroacoustic devices to electro-optical systems, etc. The range of the devices we use in our daily life has extended from DC up to Terahertz frequencies. We have had both large-scale (kilometers-wide) and small-scale (nanometers) EM systems. A large portion of these systems are broadband and digital and must operate in close proximity that results in severe EM interference problems. Engineers must take EM issues into account from the earliest possible design stages. This necessitates establishing an intelligent balance between strong mathematical background (theory), engineering experience (practice), and modeling and numerical computations (simulation).

This Distinguished/keynote lecture aims at a broad-brush look at current complex EM problems as well as certain teaching / training challenges that confront wave-oriented EM engineering in the 21st century, in a complex computer and technology-driven world with rapidly shifting societal and technical priorities.

ORAL PRESENTATIONS

Friday, April 10, 07:50-12:20
Friday, April 10, 13:40-18:25

Saturday, April 11, 08:10-12:00
Saturday, April 11, 14:00-18:10

Sunday, April 12, 08:10-12:00
Sunday, April 12, 14:00-18:10

Friday, April 10	**07:50-12:20**
FR-OP.1A	**Banquet Room AB, 5th Floor**

Opening Speech **07:50-08:00**
Meisong Tong, Tongji University, China

Session: Keynote Speeches
Session Chair: Meisong Tong, Tongji University, China; Gaobiao Xiao, Shanghai Jiaotong University, China

FR-OP.1A.1 **08:00-08:40**
Multiple Scattering of Waves with Applications in Microwave Remote Sensing, Metasurfaces and Photonic Crystals
Leung Tsang, University of Michigan, Ann Arbor, MI, USA

FR-OP.1A.3 **08:40-09:20**
From Mode to Beams: Simulation, Design and Implementation of Multi-Mode Antennas for Beamforming
Christophe Fumeaux, The University of Queensland, Brisbane, Australia

FR-OP.1A.4 **09:20-10:00**
Computational Electromagnetics for Smart EM Environments
Andrea Massa, University of Trento, Trento, Italy

Tea Break **10:00-10:20**

FR-OP.1A.5 **10:20-11:00**
Complexity Breaking Complexities in Computational Electromagnetics: Best Practices for Leading through Difficult (Computational) Times
Francesco Andriulli, Politecnico di Torino, Turin, Italy

FR-OP.1A.6 **11:00-11:40**
Toward Seamless Refinement: Unifying Hybrid Elements and High-Order Singular Bases for 3D p/h-Conformity
Roberto Graglia, Politecnico di Torino, Torino, Italy

FR-OP.1A.7 **11:40-12:20**
From Engineering Electromagnetics to Electromagnetic Engineering: Teaching/Training Next Generations
Levent Sevgi, Istanbul Technical University, Türkiye

Friday, April 10 **13:40-18:10**

FR-OP.1P **Vienna, 3rd Floor**

Session: Keynote Speeches(Online)

Session Chair: Meisong Tong, Tongji University, China; Gaobiao Xiao, Shanghai Jiaotong University, China

FR-OP.1P.1 **13:40-14:20**

Higher Order Computational Electromagnetics: From Intellectual Curiosity to Practical Tools and Applications

Branislav M. Notaros, Colorade State University, Fort Collins, Colorado, USA

FR-OP.1P.2 **14:20-15:00**

Making Classical Electromagnetic Solution to be Quantum Compliant

Weng Cho Chew, Purdue University, West Lafayette, IN, USA

FR-OP.1P.3 **15:00-15:40**

Pushing the Boundaries of Computational Electromagnetics – Application to Antenna Designs, Placement, Co-site Interference Simulations and Digital Twins

C. J. Reddy, Altair Engineering, Troy, MI, USA

Tea Break **15:40-16:10**

Session: Integrated EM Sensing and Propagation Modeling for Intelligent Vehicular Networks

Session Chairs: Xia Wu, Tongji University; Xiuzhu Ye, Beijing Institute of Technology

FR-OP.1P.4 **16:10-16:30**

Evaluating Indirect Effects of Lightning on Vehicle Engines via Signal Measurement Loops

Bowen Wang, AECC Commercial Aircraft Engine Co., Ltd.

FR-OP.1P.5 **16:30-16:50**

Radiated EMI Susceptibility of a 77-GHz PMCW Radar: Anechoic vs. Reverberation Chamber Analysis

Syed Imran Haider, Zhejiang University, ZJU-UIUC Institute

FR-OP.1P.6 **16:50-17:10**

RG-BEV: A Height-Prior Guided Framework for Roadside 3D Object Detection

Yuxuan Liu, Xia Wu, Tongji University

FR-OP.1P.7 **17:10-17:30**

Uncertainty-Guided Evidential Deep Learning Schemes in Full-Wave Inverse Scattering Problems

Li Tingyu, Song Rencheng, Beijing Institute of Technology

FR-OP.1P.8 **17:30-17:50**

Wideband Millimeter-Wave Short-Range Imaging: A K-space Spectral Integration Approach and Comparative Analysis

Ji Yuanchen, Zhang Xinhui, Beijing Institute of Technology

FR-OP.1P.9 **17:50-18:10**

FDTD-Driven Phase-Error-Aware Calibration of Maglev Tunnel MIMO Channel Models

Meng Lan, Jianfeng Liu, Meng Mei, Zhongwei Xu, Tongji University

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Friday, April 10 **14:00-18:25**

FR-OP.2P **Lyon Hall, 3th Floor**

Session: IEEE AP-S DL Workshop Asia Series

Session Chair: Levent Sevgi, Istanbul Technical University

FR-OP.2P.1 **14:00-14:45**

Electrically Small Antennas: Advances in Efficiency, Bandwidth, and Directivity

Richard W. Ziolkowski, Department of Electrical and Computer Engineering, The University of Arizona, Tucson, AZ 85721, USA

FR-OP.2P.2 **14:45-15:30**

Advanced Computational Electromagnetics: Beyond the Standard Numerical Modeling Techniques

Özlem ÖZGÜN, Department of Electrical and Electronics Engineering Vice Dean, Faculty of Engineering Hacettepe University, Ankara, TURKEY

Tea Break **15:40-16:10**

FR-OP.2P.3 **16:10-16:55**

Electromagnetic Sensing and Imaging (for general audience)

Maokun Li, Tsinghua University, China

FR-OP.2P.4 **16:55-17:40**

Explicit, Implicit and Fundamental Schemes for FDTD Methods in Electromagnetics Computation and Education

Eng Leong Tan, Nanyang Technological University, Singapore

FR-OP.2P.5 **17:40-18:25**

Antennas, Arrays & Calibration: Beam Forming and Beam Steering

Levent Sevgi, ITU - Istanbul Technical University

Friday, April 10 **14:00-18:10**

FR-OP.3P **Leeds Hall, 3rd Floor**

Session: Advances in Multiphysics Modeling and Simulation for Computational Electromagnetics: From Algorithms to Engineering Applications

Session Chairs: Ping Li, University of Electronic Science and Technology of China; Kai-Kun Niu, Anhui Univeisty

FR-OP.3P.1 **14:00-14:20**

A Parallel Robin Transmission Condition-Enhanced Discontinuous Galerkin Method for Transient Thermo-Mechanical Analysis of 3-D Integrated Circuits

Tianxiang Song, Shanghai Jiao Tong University

FR-OP.3P.2 **14:20-14:40**

A Structure-Preserving UPML Formulation for Multisymplectic FDTD Methods

Zhipeng Chen, Linqing Li, Kaikun Niu, Zhixiang Huang, Xianliang Wu, Anhui Unversity

FR-OP.3P.3 **14:40-15:00**

Accelerating MLFMA Aggregation/Disaggregation Operations through Component-Separated Tucker Compression

HaoHui Ge, Yang Liu, Institute of Applied Physics and Computational Mathematics, Beijing, China

FR-OP.3P.4 **15:00-15:20**

Deep Unrolled Newton Method for Electromagnetic-Thermal Multiphysics Analysis

Zengkai Wu, Ping Li, Shanghai Jiao Tong University

FR-OP.3P.5 **15:20-15:40**

Massive Curved Mesh Generation Framework for Complex Geometries

Shu-Jie Li, Hang Si, Beijing Computational Science Research Center

Tea Break **15:40-16:10**

Session: RF Acoustic Devices for 5G/6G Applications and Space-Time Coding Metamaterials and Their Applications

Session Chairs: Guo-Min Yang, Fudan University; Session Xiaoyi Wang, Tongji University; Xin Ou, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences

FR-OP.3P.6 **16:10-16:30**

Scattering Model Inspired HRRP Spoofing with Time-Frequency Domain Analysis

Yiwei Wang, Yonggeng Zhu, Mengmeng Li, Dazhi Ding, Nanjing University of Science and Technology

FR-OP.3P.7 **16:30-16:50**

Target Geometric Parameter Recognition Basedon Coupled Microstrip Dipole Antennas

Xinshun Li, Xiao Yu Li, Xiaojun Chu, Tongji University; Xiaoyi Wang, Tongji University & Southeast University

FR-OP.3P.8 **16:50-17:10**

Joint Estimation of DOA and PolarizationInformation Based on a Miniaturized Dual-Polarized Spherical Array

Haojie Zhang, Xiao Yu Li, Xiaojun Chu, Tongji University; Xiaoyi Wang, Tongji University & Southeast University

FR-OP.3P.9 **17:10-17:30**

Wideband SAW Filter Using Simultaneous Excitation SH-LL Modes for 5G Applications

Hangyu Qian, Zonglin Wu, Wenfeng Yao, Shijia Li, Yang Feng, Guo-Min Yang, Fudan University; Feihong Bao, The Yangtze Delta Region Institute (Huzhou) University of Electronic Science and Technology of China

FR-OP.3P.10 **17:30-17:50**

Narrow Dummy Fingers for Transverse Energy Leakage Suppression in TF-SAW Resonators

Zonglin Wu, Wenfeng Yao, Hangyu Qian, Jie Zou, Guo-Min Yang, Fudan University; Shuxian Wu, University of Pennsylvania; Feihong Bao, The Yangtze Delta Region Institute (Huzhou) University of Electronic Science and Technology of China

FR-OP.3P.11 **17:50-18:10**

High coupling C-band SAW Resonator on $LiNbO_3/SiO_2$/Diamond substrate for 5G applications

Qiong Wu, Yang Chang, Tianxiang Wu, Qiaozhen Zhang, Shanghai Normal University

Friday, April 10	**14:00-18:10**
FR-OP.4P	**Sydney Hall, 3rd Floor**

Session: Advances on metasurfaces and applications of antennas

Session Chairs: Zhangjie Luo, Southeast University; Yongtao Jia, Xidian University; Sijia Li, Air Force Engineering University

FR-OP.4P.1 **14:00-14:20**

Design and Experiment of Millimeter-Wave Quasi-Optical Mode Converter Antenna for Gyrotron Application

Qili Huang, Linlin Hu, Lijun Yi, Shenggang Gong, Yi Jiang, Peng Hu, Luqi Zhang, Dimin Sun, Guowu Ma, Xiao Jin, Institute of Applied Electronics, China Academy of Engineering Physics

FR-OP.4P.2 **14:20-14:40**

A Frequency- and Code-Division Multiplexing Scheme Using Time-Coding Metasurface

Qirui Wang, Zhangjie Luo, Fan Yang, Tie Jun Cui, southeast university

FR-OP.4P.3 **14:40-15:00**

Control of scattering fields based on phase and amplitude codings with programmable metasurfaces

Yuhao Wu, Sijia Li, Zhe Cheng, Liqiu Hu, Zhibo Huang, Ming Liu, Air Force Engineering University

FR-OP.4P.4 **15:00-15:20**

A Sparse Programmable Metasurface for Beam Scanning

Zhangjie Luo, southeast university

Session: AI enhanced forward simulation and inverse problems

Session Chairs: Yunyun Hu, Tongji University; Qingtao Sun, Eastern Institute of Technology; Yiqian Mao, Southeast University

FR-OP.4P.5 **15:20-15:40**

Electromagnetic Equivalent Source Reconstruction via Subspace Projection and Neural Learning

Jiexin Hu, Hangzhou Dianzi University

Tea Break **15:40-16:10**

FR-OP.4P.6 **16:10-16:30**

A Physics-Driven Unet for Electromagnetic Inverse Scattering Problems

Hui Wang, Qing He, Meisong Tong, Qingtao Sun, Tongji University

FR-OP.4P.7 **16:30-16:50**

A machine learning approach for near-field prediction of array structures

Ao Di Yang, Jian Wei You, Southeast University

FR-OP.4P.8 **16:50-17:10**

Deep learning method for electromagnetic scattering with wavelet transform-based feature fusion and complex-valued neural network

Junjie Yan, Li Luo, Yingjia Li, Xunjie Xu, Yi Qian Mao, School of Information Science and Engineering, Southeast University

FR-OP.4P.9 **17:10-17:30**

Retrieval of Second-Order Nonlinear Media Based on Contrast Source Inversion Method

Shi Qiang Wu, Bo O. Zhu, Mei Song Tong, Nanjing University

Friday, April 10 **14:00-17:30**

FR-OP.5P **Marseilles Hall, 3rd Floor**

Ulrich L. Rohde Innovative Conference Paper Awards & Best Student Paper Awards Competition

Session Co-Chairs: Amir Boag, Tel Aviv University; Vladimir Okhmatovski University of Manitoba

FR-OP.5P.1 **14:00-14:20**

Novel Non-Iterative Numerical Quadratures for Singularities in Multiphysics Formulations and Basis Functions

Guido Lombardi, Politecnico di Torino, Italy

FR-OP.5P.2 **14:20-14:40**

Fast Electromagnetic Modeling of Interconnect and Packaging Structures Based on the Method of Moments with Dual Basis Function

Shan Xue, Yi Cheng Liang, Mei Song Tong, Tongji University, China

FR-OP.5P.3 **14:40-15:00**

A Theoretically Stable FDTD(2,4) Method Based on Projection SBP-SAT Technique

Weibo Wu, Wei-jie Wang, Xingqi Zhang, Xinyue Zhang, Beihang University

FR-OP.5P.4 **15:00-15:20**

An Integral-Operator-Based 3D T-Matrix Framework for Many-Body Scattering with Arbitrary Volumetric Current Excitations

Zhukang Wang, Jinyan Ma, Jiahui Wang, Jiarun Hu, Da Li, Said Mikki, Er-Ping Li, Zhejiang University

FR-OP.5P.5 **15:20-15:40**

Enhanced Fast Modelling of Electromagnetic Scattering From Multiple Objects Based on CM and MLFMA

Zhaoyuan Wang, Jihong Gu, Chao-Fu Wang, Jiamin Shi, Dazhi Ding, Nanjing University of Science and Technology

Tea Break **15:40-16:10**

FR-OP.5P.6 **16:10-16:30**

Quantum Unified Theory of Characteristic Modes Framework for Modelling Large Finite Arrays

Chao-Fu Wang, Jihong Gu, Dazhi Ding, Nanjing University of Science and Technology, China; Guangshang Cheng, Yuwei Du, Zhixiang Huang, Anhui University, China

FR-OP.5P.7 **16:30-16:50**

Fast Direct Solution with Directional Equivalence Sources for Wideband Electromagnetic Scattering Problems

Yuhan Zuo, Francesca Vipiana, Dazhi Ding, Nanjing University of Science and Technology

FR-OP.5P.8 **16:50-17:10**

A Novel Source Transfer Overlapping Domain Decomposition Method for Large-scale Modeling

Zhanwen Wang, Zhejiang University

FR-OP.5P.9 **17:10-17:30**

Implicit-Explicit Wave Equation-Based Hybrid Element-Level and Subdomain-Level DGTD Method

Youshen Tian, Wen Chen, The Hong Kong Polytechnic University; Heng Cao, Shanghai Jiao Tong University; Lixiao Wang, Qingtao Sun, Qing Huo Liu, Eastern Institute of Technology

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Saturday, April 11 **08:10-12:00**

SA-OP.1A **Vienna Hall, 3rd Floor**

Best Student Paper Awards Competition

Session Co-Chairs: Amir Boag, Tel Aviv University; Vladimir Okhmatovski University of Manitoba

SA-OP.1A.1 **08:10-08:30**

Accurate Solution of Time-domain Volume Integral Equations for Transient Electromagnetic Scattering by Chiral Objects

Yi Cheng Liang, Shan Xue, Mei Song Tong , Tongji University

SA-OP.1A.2 **08:30-08:50**

A Stable and Efficient FDTD Subgridding Method for Thin PEC Sheet Structures

Langran Deng, Shunchuan Yang, Beihang University

SA-OP.1A.3 **08:50-09:10**

An Iterative ACA-Accelerated Framework for Broadband Analysis of Platform-Mounted Antennas

Zhou Xu, Xidian University

SA-OP.1A.4 **09:10-09:30**

Brief Comparison of the Marching-on in Time Algorithms for the Electromagnetic Scattering of Uniformly Moving PEC Objects

Guomin Liu, Gaobiao Xiao, Mengxia Hu, Junwei Zhu, Shanghai Jiao Tong University

SA-OP.1A.5 **09:30-09:50**

Parameterized Construction of Polygonal Vector Basis Functions via Geometric-Encoded PINNs

Liu-Hua Chen, Bi-Yi Wu, and Xin-Qing Sheng, Beijing Institute of Technology, China

Tea Break **09:50-10:20**

SA-OP.1A.6 **10:20-10:40**

Research on Characteristic Mode Analysis Method Based on Partially Overlapping Basis Functions

Yaji Zuo,Nanjing University of Science and Technology; Mingxuan Zhan ,Nanjing University of Science and Technolog

SA-OP.1A.7 **10:40-11:00**

A Trustworthy Multilevel Fast High Frequency Method for Multi-layer Coated Scatterers

Han Kun Ma, Yu Mao Wu, Fudan University

SA-OP.1A.8 **11:00-11:20**

An Efficient Method for Wideband Electromagnetic Scattering Analysis of Periodic Array

Yuwei Du, Anhui University

SA-OP.1A.9 **11:40-12:00**

An Adaptive Refinement Method for Wideband Electromagnetic Analysis Using Integral Equations

Haojie Cao, Ran Zhao, Lin Lei, Ming Jiang, Xiong Yang, School of Electronic Science and Engineering

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Saturday, April 11 **08:10-12:00**

SA-OP.2A **Lyon Hall, 3rd Floor**

Session: High-Performance Electromagnetic Computation and Multiphysics Simulations

Session Chairs: Juan Chen, Xi'an Jiaotong University; Zi He, Nanjing University of Science and Technology; Huan Huan Zhang, Xidian University; Meng Meng Li, Nanjing University of Science of Technology

SA-OP.2A.1 **08:10-08:30**

Mechanism and Simulation of Ion Energy Distribution Control via Bias Voltage in Low-Temperature RF Capacitively Coupled Plasmas

Yan Zhang, Hongxuan Mu, Zhenzi Feng, Junlong Liu, Zhigang Huang, Beihang University

SA-OP.2A.2 **08:30-08:50**

A Dynamic Group Target Recognition Method Based on Time-Varying Parametric Scattering Model

Jiayi Shi, Nanjing University of Science and Technolog

SA-OP.2A.3 **08:50-09:10**

PCB Board-Level Thermal Conduction Simulation and Temperature Prediction via Deep Energy Method

Fei Fei Yuan, Qing Nan Fan,Huan Huan Zhang, Bian Wu, Ying Liu, Xidian University; Peng Liu, The Research Institute for Special Structures of Aeronautical Composites AVIC

SA-OP.2A.4 **09:10-09:30**

A Fast Prediction Method for Temperature Field of Heatsinks in Electronic Devices Based on Graph Neural Networks

Hong Bin Zhang, Zheng Lang Jia, Huan Huan Zhang, Bian Wu, Ying Liu, Xidian University; Peng Liu, The Research Institute for Special Structures of Aeronautical Composites AVIC

Tea Break **09:50-10:20**

SA-OP.2A.6 **10:20-10:40**

An FLOD-FDTD Method for Electromagnetic – Thermal Coupled Simulation of Heterogeneous Materials

Yaohui Tang, Guoda Xie, Guilin Hou, Zhixiang Huang , xianliang Wu, Anhui University

SA-OP.2A.7 **10:40-11:00**

Stability and Accuracy Analysis of Modified Conformal FDTD Methods for Electromagnetic Simulations

Guilin Hou, Haifeng Fang, Guoda Xie, Zhixiang Huang, Anhui University ; Yiru Liang, Xidian University

SA-OP.2A.8 **11:00-11:20**

Resonance Order Analysis of Surface Plasmon-Polariton Waves for SERS Periodic Slot Waveguide Design

Ziyu Wang, Shi Pu, Linghao Xiong, Tianyi Lou,Xuehua Zhang, Jingxing Guo, Si Hao, Wuhan University of Technology ; Chen Wang, Altair Engineering Software

SA-OP.2A.9 **11:20-11:40**

A Heterogeneous High-Order Finite-Difference Time-Domain Method on Supercomputing Platforms

Junfei Chen, Nanjing University of Science and Technology

SA-OP.2A.10 **11:40-12:00**

ELF Propagation Characteristic in Magnetized Ionosphere with Implicit GPU-FDTD

Songming Zou, Kuisong Zheng, Zhewen Chen, Junke Wang, Zhancao Guo, Northwestern Polytechnical University; Shitian Zhang, China Research Institute of Radio Wave Propagation

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Saturday, April 11 **08:10-12:00**

SA-OP.3A **Leeds Hall, 3rd Floor**

Session: Electromagnetic scattering and inversion in complex environments

Session Chairs: Hongxia Ye, Fudan University; Anxue Zhang, Xi'an Jiaotong University; Yumao Wu, Fudan University

SA-OP.3A.1 **08:10-08:30**

Multipath Exploitation in Highly Reflective Environments for Enhanced Microwave Imaging via Inverse Source Reconstruction

Quanfeng Wang, Thomas F. Eibert, Technical University of Munich; Mei Song Tong, Tongji University

SA-OP.3A.2 **08:30-08:50**

The surface current reconstruction method based on EFIO and multibranch RWG basis function

Rui Liu, Dejiang Shang, Chao Zhang, Boxuan Shi, Harbin Engineering University; Gaobiao Xiao, Shanghai Jiao Tong University

SA-OP.3A.3 **08:50-09:10**

An Efficient Differentiable Model Based on the High Frequency Scattering Method to Optimize the Surface Reflectivity of Coated Target

Xiao Jie Zhang, Yu Ying Dou, Yu Mao Wu, Fudan University

SA-OP.3A.4 **09:10-09:30**

Cluster-Level Bayesian Constraints for SMRT Forward Modeling of Antarctic Sea-Ice Brightness Temperatures Using AMSR2 and SMOS

WanJun Jiang, HongXia Ye, Fudan University

SA-OP.3A.5 **09:30-09:50**

A Denoising Diffusion Probabilistic Model for Extracting Sparse Parameters of the Attributed Scattering Center

Xianying Luo, Yanan Lu, Yumao Wu, Fudan University

Tea Break **09:50-10:20**

Session: Advances in Intelligent Electromagnetic Computation and Optimization Techniques

Session Chairs: Feng Xu, Fudan University; Shilei Fu, Fudan University

SA-OP.3A.6 **10:20-10:40**

Mixture of Experts and Ensembles of Deep Neural Networks for Antenna Modeling

Darko Ninković, Dragan Olćan, University of Belgrade; Shaik Basheeruddin Shah, Ahmed Altunaiji, Nazar Ali, Khalifa University of Science and Technology

SA-OP.3A.7 **10:40-11:00**

A DeepONet-Assisted Multi-Objective Optimization Framework for Efficient Design of CNTFETs

Yunlin Zou, Shuo Zhang, Hao Xie, Zhun Wei, Wen-Yan Yin, Zhejiang University

SA-OP.3A.8 **11:00-11:20**

Physics-Informed Intelligent Inversion of Radar Targets Using Electromagnetic Scatterer Dictionary and Interpretable Neural Networks

Xiuxiu Chen, Shilei Fu, Feng Xu,Fudan University; Jizhou Yu, Beijing Institute of Radio Measurement

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Saturday, April 11 **08:10-12:00**

SA-OP.4A **Sydney Hall, 3rd Floor**

Session: Computational methods in analysis and design of metasurfaces

Session Chairs: Jun Wei Wu, Southeast University; Yunjing Zhang, Soochow University; Han Ru Shao, University of Electronic Science and Technology of China

SA-OP.4A.1 **08:10-08:30**

Extracting The Equivalent Circuit Model of Frequency Selective Surfaces For Wideband Analysis Under Arbitrary Incidence

Jiaqi Ding, Shandong Normal University

SA-OP.4A.2 **08:30-08:50**

An Efficient and Physics-Compatible Approach for Single- and Dual-Polarized RIS Design

Lu Yingjuan, Cheng Qiang, Southeast University

SA-OP.4A.3 **08:50-09:10**

A Simple and Efficient Beamforming Approach for Millimeter-Wave Reconfigurable Intelligent Surfaces Using the Branch and Bound Algorithm

Tian Xie, Jun Wei Wu, Southeast University

SA-OP.4A.4 **09:10-09:30**

Random Quantization and Statistical Synthesis for Low-Bit Digital Metasurfaces

Cai Yu Qian, Jun Wei Wu, Southeast University

SA-OP.4A.5 **09:30-09:50**

Analyzing Periodic Arrays using Fast Characteristic Mode Method

Hanru Shao, Yangtze Delta Region Institute (Huzhou), University of Electronic Science and Technology of China (UESTC)

Tea Break **09:50-10:20**

SA-OP.4A.6 **10:20-10:40**

Efficient DOA Estimation via Compressive Sensing and Space-Time-Coding Metasurfaces

Hui Xu, Jun Wei Wu, Tie Jun Cui, Southeast University; Hui Xu, Tie Jun Cui, Zhangjiang Laboratory

SA-OP.4A.7 **10:40-11:00**

Stacked Intelligent Metasurface Achieving Sharp Frequency Filtering with Polarization and Spectral Reconfigurability

Weiren Zhu, Shanghai Jiao Tong University

SA-OP.4A.8 **11:00-11:20**

Accelerating DGTD Simulation of Plasma Scattering Using CNN-Based Surrogate Model

Shijie Bi, Yuhang Zhu, Inner Mongolia University; Yin Li, Peng Cheng Laboratory

SA-OP.4A.9 **11:20-11:40**

Design of Wideband Ridged Waveguide Slot Array Antenna and Its Decoupling Technique for Ku-Band Satellite Application

Yan Qu, Space Antenna Research Institute, Academy of Space Information System; Honghui Jiang, Mengyang Huangfu, Shanghai University ; Qi Zheng, Xi'an University of Architecture and Technology

SA-OP.4A.10 **11:40-12:00**

A Flexible Time-Modulated Metasurface for Radar Stealth

Xu Qing Xiong, Yun Jing Zhang, Soochow University; Ling Hui Kong, Qianyuan Laboratory; Mei Song Tong, Tongji University

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Saturday, April 11 **08:10-12:00**

SA-OP.5A **Marseilles Hall, 3rd Floor**

Session: Self-Powered Wireless Sensing Technologies for Smart Environments(*Featured Session)

Session Chairs: Lei Guo, Dalian University of Technology

SA-OP.5A.1 **08:10-08:30**

Microwave Biomedical Radar for Healthcare Applications(*Invited)

Changzhan Gu, Shanghai Jiao Tong University

SA-OP.5A.2 **08:30-08:50**

Space-Time Metasurface Antennas for Integrated Sensing and Communication(*Invited)

Gengbo Wu, City University of Hong Kong

SA-OP.5A.3 **08:50-09:10**

Toroidal Pulses and Their Applications in Wireless Sensing(*Invited)

Ren Wang, Bing-Zhong Wang, University of Electronic Science and Technology of China

SA-OP.5A.4 **09:10-09:30**

A Parity-Time Symmetric Wireless Sensing System with an Integrated Reader(*Invited)

Ke Yin, Lu Tan, Yang Yang, Huacheng Zhu, Sichuan University

SA-OP.5A.5 **09:30-09:50**

Energy Harvesting Techniques for Self-Power IoT Sensors(*Invited)
Jun-Hui Ou, Xiu Yin Zhang, South China University of Technology

Tea Break **09:50-10:20**

SA-OP.5A.6 **10:20-10:40**
Synergistic Regulation of Energy and Information: An Integrated Radiation-Scattering Metasurface Paradigm for 6G(*Invited)
Jiaqi Han, Yajie Mu, Long Li, Xidian University

SA-OP.5A.7 **10:40-11:00**
Topological clothing for wireless bioelectronics(*Invited)
Zhipeng Li, University of Science and Technology of China

SA-OP.5A.8 **11:00-11:20**
Rectifying Metasurface for Harvesting Electromagnetic and Optical Energy
Junfei Ji, Fan Yu, Zhoulin Fan, Xuexia Yan, Shanghai University

SA-OP.5A.9 **11:20-11:40**
Exploiting New Degrees of Freedom: Unlocking Next-Gen Sensing & Communication Modalities(*Invited)
Jingzhi Zhang, University of Electronic Science and Technology of China

SA-OP.5A.10 **11:40-12:00**
Wireless Energy Harvesting Enabled Electromagnetic Wave Polarization Detection: A Review(*Invited)
Yan Zhang, Jiahong Xing, Southeast University; Runze Huang, Huawei Ltd. Co.

Saturday, April 11 **14:00-18:10**
SA-OP.1P **Vienna Hall, 3rd Floor**

Session: Electromagnetic Computation and Applications
Session Chairs: Siyuan He, Wuhan University; Qi Huang, National Key Laboratory of Scattering and Radiation; Zhidan Bian, Wuhan University

SA-OP.1P.1 **14:00-14:20**
Quantitative Evaluation of Phase Perturbation Effects in UAV-Towed VLF Distributed Arrays Using Monte Carlo Methods
Haitao Chen, Longjun Zhou, Wuhan Maritime Communication Research Institute & Hubei Provincial Key Laboratory for Low-Frequency Electromagnetic Communication Technology; Jie Yu, Wuhan Maritime Communication Research Institute

SA-OP.1P.2 **14:20-14:40**

Phaseless Source Reconstruction Method Over Arbitrary Equivalent Surfaces Using Rooftop Basis Functions

Yuyang Wang, Shandong Normal University

SA-OP.1P.3 **14:40-15:00**

Frequency-Reconfigurable Compact Antenna Design for Dual-Band Connectivity in Sub-6 GHz and mmWave ISM Bands

Ayesha Iqbal, Mirza Shujaat Ali, Muhammad Ali Imran, Masood Ur Rehman, University of Glasgow; Abdul Jabbar, Loughborough University

SA-OP.1P.4 **15:00-15:20**

Surface Roughness Impacts on Phase Shift and Insertion Loss of 60 GHz Liquid Crystal Coaxial Delay Line Based on Groisse's Model

Jinfeng Li, Beijing Institute of Technology & Imperial College London; Haorong Li, Beijing Institute of Technology

SA-OP.1P.5 **15:20-15:40**

Calculation of Multi-Conductor Inductance Matrix Based on the Finite Element Method

Shi Tong Zhang, Guang Hao Liu, Ningbo University

Tea Break **15:40-16:10**

Session: Millimeter-wave Antenna Array

Session Chairs: Zhijiao Chen, Beijing University of Posts and Telecommunications; Yizhu Shen, Southeast University

SA-OP.1P.6 **16:10-16:30**

W-band Sparse Slot Array for Circular Shaped Monopulse Antenna

Yutong Liu, Zhijiao Chen, Beijing University of Posts and Telecommunications

SA-OP.1P.7 **16:30-16:50**

Design of a Low-cost and Low-loss Glass-based Antenna-in-Package

Zhichen Zhuang, Lixing Chen, Yuhang Dou, Miao Zhang, Xiamen University

SA-OP.1P.8 **16:50-17:10**

A Holographic Metasurface Antenna Based on a Two-state Unit Cell for Beam Steering

Hui Lu, Song Xue, Yizhu Shen, Southeast University

SA-OP.1P.9 **17:10-17:30**

Non-Drilled Half-Mode Vivaldi Photonic Antenna
Zhenni Kuang, Zhijiao Chen, Zhanyu Yang, Hao Feng, Beijing University of Posts and Telecommunications

SA-OP.1P.10 **17:30-17:50**
Progress in mmWaveTHz High-Performance Antenna-in-Package Technologies From Antenna Design to System Integration
Yafei Wu, Gang Zhuang, Yu Jian Cheng, University of Electronic Science and Technology of China

SA-OP.1P.11 **17:50-18:10**
A Compact Broadband High-Isolation Dual Circularly Polarized Antenna Array
Meng-Liang Wang, Shu-Min Jiang, Jian Wang, Ningbo University

Saturday, April 11 **14:00-18:10**
SA-OP.2P **Lyon Hall, 3rd Floor**

Session: Advanced method for RF, Microwave, and Millimeter Wave Devices and Circuits
Session Chairs: Xingang Ren, Anhui University; Meng Kong, Hefei Normal University; Gang Wang, Anhui University

SA-OP.2P.1 **14:00-14:20**
A Phased-Array FPGA-based phase computation method for satellite communications
Xinyu Huang, Xianliang Wu, Bo Wu, Anhui University

SA-OP.2P.2 **14:20-14:40**
A Polarization-Reconfigurable Low-RCS Metasurface Antenna(*Invited)
Wenxin Cai, Renyu Wang, Xingang Ren, Anhui University; Qi Shao, Meng Kong, Hefei Normal University

SA-OP.2P.3 **14:40-15:00**
A Symplectic Discontinuous Galerkin Time-Domain Algorithm for Debye Dispersive Media
Chenfeng Wang, Guilin Hou, Guoda Xie, Zhixiang Huang, Anhui University; Ran Zhao, University of Electronic Science and Technology of China

SA-OP.2P.4 **15:00-15:20**
A 38 GHz Aperture-Coupled Slotted Patch Antenna with 3D-Printed Lens for Miniaturized Beam-Scanning Subarrays(*Invited)
Ruoxi Xu, Xianliang Wu, Gang Wang, Anhui University

SA-OP.2P.5 **15:20-15:40**

Design and Co-Optimization of a 27–31 GHz CPW-Based Integrated Filtering Power Divider
Deshun Huang, Yue Ma, Yong Cai, Ming Zhang, Xinyu Huang, Gang Wang, Xianliang Wu, Anhui University

Tea Break **15:40-16:10**

SA-OP.2P.6 **16:10-16:30**
A Comparison of Gummel and Fully Coupled Iterations in Power BJT Simulation(*Invited)
Yeqiang Yan, Xingang Ren, Zhaosheng Xia, Zhixiang Huang, Anhui University

SA-OP.2P.7 **16:30-16:50**
A Dual-Band 28/38-GHz mmWave Antenna for 5G Wireless Communications
Akhtar Khan, Shakeel Ahmad, Mei Song Tong, Tongji University

SA-OP.2P.8 **16:50-17:10**
Wideband Sub-6 GHz MIMO Antenna With Isolation Enhancement Using an Epsilon-Negative Metamaterial Fence Wall
Shakeel Ahmad, Akhtar Khan, Mei Song Tong, Tongji University

SA-OP.2P.9 **17:10-17:30**
A Versatile Single-Layered FSS for UWB Interference Suppression in Communication Systems
Akhtar Khan, Shakeel Ahmad, Mei Song Tong, Tongji University

SA-OP.2P.10 **17:30-17:50**
Cluster-Aware Multicast Precoding in Cell-Free Massive MIMO for Scalable 6G Networks
Muhammad Arslan, Ajay K. Poddar, Ulrich L. Rohde, Mei Song Tong

SA-OP.2P.11 **17:50-18:10**
3D Spectral-Element Forward Modeling for Airborne Electromagnetic Methods Considering Induced Polarization Effect
Beirong Liu, Huang Xin, Xiaoyue Cao, Liangjun Yan, Yangtze University

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Saturday, April 11 **14:00-18:10**
SA-OP.3P **Leeds Hall, 3rd Floor**

Session: Advanced Electromagnetic Computation, Optimization and Scattering-Functional Design
Session Chairs: Pengfei Gu, Nanjing University of Science and Technology; Zi He, Nanjing University of Science and Technology

SA-OP.3P.1 **14:00-14:20**

Efficient Broadband Electromagnetic Scattering Analysis Based on Compressive Sensing and ACA

Wu Chenggang, Zhonggen Wang, Anhui University of Science and Technology; Chenlu Li, Hefei Normal University; Zhenzhen Chen, Hefei University

SA-OP.3P.2 **14:20-14:40**

Miniaturized Artificial Magnetic Conductor Design for Specific Absorption Rate Reduction in UHF Band Wearable Antennas

Mehmet Doğan, Istanbul Technical University & Pharus Tech Inc.; Mesut Kartal, Istanbul Technical University

SA-OP.3P.3 **14:40-15:00**

Sparse design of spherical phased array based on sector partitioning

Yu Qiao, Pengfei Gu, Siyu Wu, Qianlei Zhuang, Dazhi Ding, Nanjing University of Science and Technology

SA-OP.3P.4 **15:00-15:20**

Regulation Technique of Near-field Angular Glint Based on the Shooting and Bouncing Method

Yuzhe. Luan, Mingrou. Shi, Zi. he, Dazhi.Ding, Nanjing University of Science and Technology; Hongcheng. Yin, Science and Technology on Electromagnetic Scattering Laboratory

SA-OP.3P.5 **15:20-15:40**

Temporal Correlation Analysis of Dynamic Nonlinear Oil-Covered Sea Surfaces With TSSA-MF

Yuqiao Zhao, Zi he, Dazhi Ding, Nanjing University of Science and Technology

Tea Break **15:40-16:10**

SA-OP.3P.6 **16:10-16:30**

Design of a Novel Tightly Coupled Ultra- Wideband Transmit-Array Based on a Modified Vivaldi Antenna

Xinyue Zhou, Pengfei Gu, Zihao Cao, Dazhi Ding, Nanjing University of Science and Technology

SA-OP.3P.7 **16:30-16:50**

A Novel Matrix Grid-Offset Mapping Method for Beam Pattern Synthesis of Rectangular Planar Array

Yong Chen, Pengfei Gu, Hao Wen, Zhenhong Fan, Dazhi Ding, Nanjing University of Science and Technology

SA-OP.3P.8 **16:50-17:10**

A Physics-Informed Convolutional Neural Network Approach for Radiation Pattern Synthesis of Linear Antenna Arrays

Zhixing Zhong, Pengfei Gu, Hao Wen, Zhenhong Fan, Dazhi Ding, Nanjing University of Science and Technology

SA-OP.3P.9 **17:10-17:30**

Super-array-Based Design of Irregular Subarrays for Modular Phased Arrays

Sheng Zhang, Pengfei Gu, Yue Zhang, Zhenhong Fan, Dazhi Ding, Nanjing University of Science and Technology

SA-OP.3P.10 **17:30-17:50**

Hybrid Active Sampling Framework Based on FLOO and GPR

Min Zhao, Zi He, Dazhi Ding, *Nanjing University of Science and Technology*

SA-OP.3P.11 **17:50-18:10**

Design of a Wideband Low-RCS Antenna Based on Multiple Mechanisms

Jiayue Yang, Meiqin Lv, Juzheng Han, Pengfei Gu, Dazhi Ding, Nanjing University of Science and Technology

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Saturday, April 11 **14:00-18:10**

SA-OP.4P **Sydney Hall, 3rd Floor**

Session: Time-Domain Computational Electromagnetics: Theory, Methods, and Applications

Session Chairs: Bing Wei, Xidian University; Lixia Yang, Anhui University

SA-OP.4P.1 **14:00-14:20**

Electromagnetic Simulation Techniques for Vulkan-Capable Devices

Poman So, University of Victoria

SA-OP.4P.2 **14:20-14:40**

Study on Uncertainty of Electromagnetic Scattering from Dusty Plasma Based on S-FDTD Method

Gongyu Wang, Wei Chen, Lixia Yang, Anhui University

SA-OP.4P.3 **14:40-15:00**

VLF radiation field from towed thin-wire antenna based on dipole approximation
Songming Zou, Zhancao Guo, Kuisong Zheng, Qiang Wu, Northwestern Polytechnical University; Shitian Zhang, China Research Institute of Radio Wave Propagation

SA-OP.4P.4 **15:00-15:20**
Rapid RCS Prediction for UAV Wing Structural Deformation Based on Artificial Neural Network
Xinyi Yu, Jianwei You, Southeast University

SA-OP.4P.5 **15:20-15:40**
A Simplified 3D Simulation Method for High-Power Microwave Gas Breakdown
Zhiqi Zhu, Yong Bo, Lixia Yang, Xianmin Guo, Dawei Li, Anhui University; Moupin Jin, East China Research Institute of Electronic Engineering

Tea Break **15:40-16:10**

SA-OP.4P.6 **16:10-16:30**
Research on Fast Calculation Method of CNTD-FDTD for the Lossy Flat-Plate Model
Xue-Qi Zheng, Zheng-Yu Huang, Bao-Yue Yan, Nanjing University of Aeronautics and Astronautics

SA-OP.4P.7 **16:30-16:50**
Two-dimensional AI-based Electromagnetic Field Modeling Based on Proper Orthogonal Decomposition
Chengyu Zhang, Xuan Zheng, Jianwei You, Southeast University

SA-OP.4P.8 **16:50-17:10**
Hybrid Explicit-Implicit DGTD and FEM for Electromagnetic-Thermal Coupled Simulation of Antennas
Ling Zhao, Yong Bo, Lixia Yang, Zhen Wang, Anhui University; Wei Ding, University of Electronic Science and Technology of China; Moupin Jin, East China Research Institute of Electronic Engineering

SA-OP.4P.9 **17:10-17:30**
Towards Native AI Algorithms for Intelligent Computational Electromagnetics
Xuan Zheng, Tian Jian Peng, Jian Wei You, Southeast University

SA-OP.4P.10 **17:30-17:50**

S2cGAN: A Novel cGAN-based network for generating radar backscatter from soil surface
Dong Zhu, Chao Liu, Lixia Yang, Anhui University

SA-OP.4P.11 **17:50-18:10**
A TE Plane-Wave Source Implementation in DGTD for a Layered Half-Space
Qian Yang, Bing Wei, Linqian Li, Xidian University

Saturday, April 11 **14:00-17:50**
SA-OP.5P **Marseilles Hall, 3rd Floor**

Session: Advances in Multi-Mode Antennas for 5G/B5G Communication
Session Chairs: Lei Guo, Dalian University of Technology; Wen-Wen Yang, Nantong University

SA-OP.5P.1 **14:00-14:20**
A Novel Liquid Crystal Polymer-Based Circularly Polarized Antenna for GPS Applications
Chi Zhang, Jianying Zhao, Li Zhang, Shanghai Polytechnic University

SA-OP.5P.2 **14:20-14:40**
A Compact Frequency-Scanning Coupled-Patch Antenna with High Scanning Rate for Integrated Sensing and Communication
Shuguang Xiao, Yu Chen, Yingjie Cui, Zhili Zhao, Hui Tang, Kuandong Gao, Zhou Wu, Ming Liu, Haixin Zou, Mingxiang Guan, Shenzhen University of Information Technology; Dehong Tian, Hefei IC Valley Microelectronics Co., Ltd; Ping Zou, AI Speech Co., Ltd

SA-OP.5P.3 **14:40-15:00**
A Nonlinear-Frequency-Scanning Coupled-Patch Array Antenna for Secure Communication
Shuguang Xiao, Yu Chen, Yingjie Cui, Zhili Zhao, Hui Tang, Kuandong Gao, Zhou Wu, Ming Liu, Haixin Zou, Mingxiang Guan, Shenzhen University of Information Technology; Dehong Tian, Hefei IC Valley Microelectronics Co., Ltd; Ping Zou, AI Speech Co., Ltd

SA-OP.5P.4 **15:00-15:20**
Mapping Rules between Sectorial and Eclipsed Dipoles: Analytical and Numerical Results(*Invited)
Xue-Ying Lin, Chun-Xing He, Wen-Jun Lu, Nanjing University of Posts and Telecommunications

SA-OP.5P.5 **15:20-15:40**

Comparative Analysis of Multiband THz Patch Antennas with Asymmetrical Rectangular Slots for 6G Networks
Baris Gurcan Hakanoglu, Atilim University

Tea Break **15:40-16:10**

SA-OP.5P.6 **16:10-16:30**
Design of Ultrawideband Leaf Shape Slot Antenna Using Theory of Characteristics Modes
M.Sai Debasisa Patra, Sambhudutta Nanda, School of Electronics Science VIT-AP University; Esambati Muni Venkata Tharun,AIML Engineering Apollo University; Bappadittya Roy, M.Mahesh, School of Electronics Science VIT-AP University

SA-OP.5P.7 **16:30-16:50**
A Compact Vertically Polarized Omnidirectional Glass Dielectric Resonator Antenna for Tri-band Wi-Fi Applications
Zeming Hu, Dalian University of Technology; Lei Guo, Dalian University of Technology & Southeast University

SA-OP.5P.8 **16:50-17:10**
A Dual-Source Energy-Harvesting Sensor Node Enabled by Solar and RF Power for Battery-Free IoT Applications
Dongxiang Zhang, Xiaopeng Yao, Dalian University of Technology; Lei Guo, Dalian University of Technology & Southeast University; Ke Wu, École Polytechnique de Montréal

SA-OP.5P.9 **17:10-17:30**
A Compact Dual-Band Antenna Integrated into the Camera Module for Wi-Fi 7 Mobile Devices
Hu-Jian Zou, Gu Liu, Nantong University; Wen-Wen Yang, Nantong University & State Key Laboratory of Millimeter Waves; Jian-Xin Chen, Nantong University

SA-OP.5P.10 **17:30-17:50**
A Wideband Hybrid-FSS-Based Antenna with Wideband Electromagnetic Transparency for Shared-Aperture Array
Le Zhang, Gu Liu, Ling-Ling Yang, Nantong University; Wen-Wen Yang, Nantong University & State Key Laboratory of Millimeter Waves; Jian-Xin Chen, Nantong University

Sunday, April 12 **08:10-11:40**
SU-OP.1A **Vienna Hall, 3rd Floor**

Session: Advanced Techniques in Multiphysics Modeling and Applications

Session Chairs: Yang Bao, Nanjing University of Posts and Telecommunications; Ting Wan, Nanjing University of Posts and Telecommunications

SU-OP.1A.1 **08:10-08:30**

Transient Electromagnetic-thermal Coupling Analysis for Eddy Current Thermal Effect

Jiawei Chen, Hongyu Yang, Qinyu Shi, Jiarui Yan, Ting Wan, Yang Bao, Nanjing University of Posts and Telecommunications

SU-OP.1A.2 **08:30-08:50**

Design of a Terahertz Circularly Polarized OAM Array Antenna with Graphene

Ziyuan Chen, Quanquan Wang, Nanjing University of Posts and Telecommunications; Yue Chen, Yunpeng Lyu, Xiangyang Branch, China Telecom Group Co., Ltd.

SU-OP.1A.3 **08:50-09:10**

A Kriging Accelerated 3D Simulation Model for Efficient Eddy Current B Scan

Yanjie Wu, Runze Liu, Wenhe Duan, Mengqi Cai, Nanjing University of Posts and Telecommunications; Hossein Taheri, Georgia Southern University; Yang Bao, Nanjing University of Posts and Telecommunications & Fujian Special Equipment Inspection and Research Institute

SU-OP.1A.4 **09:10-09:30**

Intelligent Prediction of Electromagnetic Fields in Waveguides Using Physics Driven Neural Network

Hao Chen, Jian Zhu, Ting Wan, Nanjing University of Posts and Telecommunications

SU-OP.1A.5 **09:30-09:50**

Ray Tracing Combined with Machine Learning for Radio Wave Propagation Prediction

Peibo Wang, Xin Wang, Ting Wan, Nanjing University of Posts and Telecommunication

Tea Break **09:50-10:20**

SU-OP.1A.6 **10:20-10:40**

Liquid Crystal High-Aspect-Ratio Coplanar Phase Shifters with Diverse Alignments for 28/40 GHz

Jinfeng Li, Beijing Institute of Technology & Imperial College London; Haorong Li, Beijing Institute of Technology; Haorong Li, Beijing Institute of Technology

SU-OP.1A.7 **10:40-11:00**

One sentence placement: Natural-Language-Driven Component Placement for instant Signal Integrity/Power Integrity Feedback

Aggrey Shitsukhane, Technical University of Mombasa; Michelle Keah, Technical University of Mombasa

SU-OP.1A.8 **11:00-11:20**

A New Method for Programmable Metasurface-Aided Microwave Computational Imaging Using Amplitude-Only Measurements

Hang Zhao, Fang-Fang Wang, Nanjing University of Posts and Telecommunications

SU-OP.1A.9 **11:20-11:40**

Laser Emission from High-Q Quasi-Bound States in Asymmetric Metasurfaces

Fang Ming, Yu Hang Fei, Xu Ke, Fang Min, Huang Zhixiang, Anhui University

SU-OP.1A.10

Passive UHF RFID Tag with Highly Isotropic Response and Small Electrical Size

Javier Araque, Universidad Nacional de Colombia

Sunday, April 12 **08:10-11:00**

SU-OP.2A **Lyon Hall, 3rd Floor**

Session: Integral Equation-Based Computational Techniques

Session Chairs: Amir Boag, Tel Aviv University; Vladimir Okhmatovski, University of Manitoba

SU-OP.2A.1 **08:10-08:30**

Integral Equation-Based Analysis of Wave Propagation in Resonating Parallel-Plate Waveguides

Gokhan Apaydin, Uskudar University; Levent Sevgi, Istanbul Technical University

SU-OP.2A.2 **08:30-08:50**

Physics-informed Transformer Residual Learning for Accelerating CFIE-based 3D EM Modeling

Haoran Sun, Maokun Li, Fan Yang, Shenheng Xu, Tsinghua University

SU-OP.2A.3 **08:50-09:10**

A Half-Space A-Φ Integral Equation Formulation for Low-Frequency Problems

Gengyao Li, Jimin Wang, Yongpin Chen, University of Electronic Science and technology of China

SU-OP.2A.4 **09:10-09:30**

Magnetic Current Multipole-based Generalized Source Integral Equation (GSIE)

Richard Kalhöfer, Kiel Universit; Yossi Dahan, Yaniv Brick, Ben-Gurion University of the Negev; Amir Boag, Tel Aviv University; Ludger Klinkenbusch, Kiel University

SU-OP.2A.5 **09:30-09:50**

An Efficient Electromagnetic Modeling Method for Parameter Extraction of On-Chip Interconnects

Zhe Yu Luo, Yu Mao Wu, Fudan University

Tea Break **09:50-10:20**

SU-OP.2A.6 **10:20-10:40**

A Spectral Integral Method for Non-smooth Multilayered Bodies of Revolution

Huimin Kang, Qing Huo Liu, The Eastern Institute of Technology

SU-OP.2A.7 **10:40-11:00**

Spectral Analysis of Differential Surface Admittance and Surface Volume Surface Electric Field Integral Equations on a Dielectric Sphere

Martijn Huynen, Daniël De Zutter, Dries Vande Ginste, Ghent University; Vladimir Okhmatovski, University of Manitoba

SU-OP.2A.8

Tensor Train Accelerated Solution of Volume Integral Equation with Logarithmic Complexity for Arbitrary Dielectric Scatterers

Chris Nguyen, Vladimir Okhmatovski, The University of Manitoba; Alexey Boyko, Independent Researcher

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Sunday, April 12 **08:10-11:20**

SU-OP.3A **Leeds Hall, 3rd Floor**

Session: Numerical Methods in Electromagnetics and EM measurements

Session Chairs: Ming-Da Zhu, Xidian University; Yi-Xuan Zhang, Xidian University

SU-OP.3A.1 **08:10-08:30**

Full-Polarisation BP Algorithm Imaging for Multiscale Targets Based on MB-RWG Basis Function Simulation Data
Xiyue Zhang, Yu Wang, Yu Cao, Wenjie Wang, Chengcheng Zhang, Cong Hua, Northwest Institute of Nuclear Technology

SU-OP.3A.2 **08:30-08:50**
2D-MoM Simulations for the Assessment of Mono-static and Bi-static Near-Field RCS Measurement
Xiao-Kun Zhang, Yi-Xuan Zhan, Ming-Da Zhu, Yong-Chang Jiao, Xidian University

SU-OP.3A.3 **08:50-09:10**
A Three-Stage Convex Optimization Based Sidelobe Refinement Method for Sparse Linear Synthesis
Xin-Yu Duan, Yi-Xuan Zhang, Xidian University; Ye Hui, The 39th Research Institute of China Electronics Technology Group Corporation; Yong-Chang Jiao, Xidian University

SU-OP.3A.4 **09:10-09:30**
A Point-Cloud-Based Surrogate Model for High-Frequency Structures
Guoqing Zhao, Liang Li, Xing Li, University of Electronic Science and Technology of China

SU-OP.3A.5 **09:30-09:50**
A Time-Domain Electric Field Integral Equation with MB-RWG Basis Functions for the Low-Frequency Simulation
Fan-Shu Wei, Yong Wang, Yi-Xuan Zhang, Ming-Da Zhu, Xidian University

Tea Break **09:50-10:20**

SU-OP.3A.6 **10:20-10:40**
Application of Near-Field Correlation Method for Wideband Mode Tracking of 3D Structures
Xi Chong You, Feng Han Lin, ShanghaiTech University

SU-OP.3A.7 **10:40-11:00**
Shape-Independent Numerical Integration Scheme for the Near-Singular Green's Function by Radial Coordinate Transformations
Lianfeng Ma, Mingdong Luo, National Key Laboratory of Electromagnetic Information Control and Effects & Aviation Industry Corporation of China; Ming-Da Zhu, Xidian University

SU-OP.3A.8 **11:00-11:20**

A Higher-Order CNTD-SGBC Method for Accurate Simulation of Dispersive Thin Layers

Mengcai Zhu, Graduate School of China Academy of Engineering Physics & Institute of Applied Physics and Computational Mathematic; Xuesong Men, Aiqing Zhan, Xianfeng Bao, CAEP Software Center for High Performance Numerical Simulation & Institute of Applied Physics and Computational Mathematics

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Sunday, April 12 **08:10-11:00**

SU-OP.4A **Sydney Hall, 3rd Floor**

Session: Trustworthy Electromagnetic Computation and Applications

Session Chairs: Jun Hu, University of Electronic Science and Technology of China

SU-OP.4A.1 **08:10-08:30**

A Novel Combined Field Integral Equation with High-Order Impedance Boundary Condition

Zhanyu Pu, Ran Zhao, Yunbo Zhang, School of Electronic Science and Engineering

SU-OP.4A.2 **08:30-08:50**

A Novel FDTD Mesh Generation Method Based on CAD Models

Yuxuan Chen, Tong Li, Zhenhong Fan, Dazhi Ding, Nanjing University of Science & Technology

SU-OP.4A.3 **08:50-09:10**

Accurate Spatial Overlap Detection for Ray Tracing Acceleration Structures Using SAT

Yubiao Du, Wenlu Chen, Zhenhong Fan, Dazhi Ding, Nanjing University of Science & Technology

SU-OP.4A.4 **09:10-09:30**

MOR-Accelerated FEM for Arbitrary Cross-Section Microwave Transmission Structures

Wen Wei, Mingming Tang, Xiangyi Zhao, Zhenhong Fan, Nanjing University of Science and Technology

SU-OP.4A.5 **09:30-09:50**

An Efficient Boundary Equivalent Source Scheme for Multi-level Skeletonization Fast Direct Solvers

Mingxuan Zhang, Yang Bai, Zhenhong Fan, Dazhi Ding, Nanjing University of Science and Technology

Tea Break **09:50-10:20**

SU-OP.4A.6 **10:20-10:40**

A Priori Mesh Refinement Strategy for Electromagnetic Simulation of Inhomogeneous Plasma Sheaths

Miao-Miao Peng, Xiao-Wei Huang, Xin-Qing Shen, Beijing Institute of Technology

SU-OP.4A.7 **10:40-11:00**

An Efficient Distance Truncation Method for Full-Wave Ship-Sea Composite Scattering Using Local Current Response

Hao Xu, Xiao-Wei Huang, Xin-Qing Sheng, Beijing Institute of Technology

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Sunday, April 12 **08:10-12:00**

SU-OP.5A **Marseilles Hall, 3rd Floor**

Session: Quantum Technologies Related to Electromagnetics

Session Chairs: Vladimir Okhmatovski, University of Manitoba; Chao-Fu Wang, Nanjing University of Science and Technology

SU-OP.5A.1 **08:10-08:30**

Efficient Simulation of Doppler-Broadened Rydberg Quantum Receivers via Monte Carlo Wave Functions

Wenjie Ding, Guoda Xie, Anhui University; Wei E. I. Sha, Zhejiang University

SU-OP.5A.2 **08:30-08:50**

Recent Progress of Applying Quantum Computing for EM and Photonic Analyses

Jia Nan Zhang, Southeast University

SU-OP.5A.3 **08:50-09:10**

A Hybrid Quantum-Classical Scheme for Solving EFIE

Rui Chen, Chao-Fu Wang, Nanjing University of Science and Technology; Teng-Yang Ma, Meng-Han Dou, Origin Quantum Computing Technology (Hefei) Co., Ltd

SU-OP.5A.4 **09:10-09:30**

Quantum Computing Method Based on FEM for Solving EM Problems

Feng Feng, Xiaolong Li, Tianjin University; Qi-Jun Zhang, Carleton University

SU-OP.5A.5 **09:30-09:50**

Fine-tuning for hybrid variational quantum models to improve prediction accuracy of specified tasks
Tao Zhang, Southeast University & Aviation key laboratory of electromagnetic environment effects; Bingbing Song, Tian Liu, Fei Guo, Zhuoyue Zhao, Zijun Hu, Wu Yang, Weibing Lu, Southeast University

Tea Break **09:50-10:20**

SU-OP.5A.6 **10:20-10:40**
Quantum-Walk HHL Algorithm for Solution of Matrix Equations
Christopher Phillips, Helia Akbari, Vladimir Okhmatovski, University of Manitoba

SU-OP.5A.7 **10:40-11:00**
Quantization of Electromagnetic Scattering in Characteristic Mode Basis
Ilay Levie, Gregory Slepyan, Amir Boag, Tel Aviv University

SU-OP.5A.8 **11:00-11:20**
Linear Sparse Array Pattern Synthesis Based on Oscillation Fusion Differential Evolution
K-L WAN, Yinhe Hangtian Technology Co.,Ltd., Yan-Ting LIU, Xidian University

SU-OP.5A.9 **11:20-11:40**
Power Analysis of FinFET Based Pre-Scaler 32/33 Frequency Divider Operating at 1GHz
N. Vinay Kumar Reddy, Umakanta Nanda, VIT-AP University

SU-OP.5A.10 **11:40-12:00**
Sierpinski Carpet Fractal Nano-Antenna for THz Applications
Poonam Namdeo, Yachika Sood, Mridula Gupta, Biswajeet Mukherjee, University of Delhi South Campus

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Sunday, April 12 **14:00-18:10**
SU-OP.1P **Vienna Hall, 3rd Floor**

Session: Advances in Electromagnetic Wave Propagation and Scattering: Methods, Models, and Applications
Session Chairs: Hao Qin, Sichuan University; Xinyue Zhang, University College Dublin; Xingqi Zhang, University of Alberta

SU-OP.1P.1 **14:00-14:20**

Parasitic-Decoupled Compact Four-Port Orthogonal MIMO Antenna for ISM Wireless systems
Maddirala Ajay Kumar, Bappadittya Roy, VIT-AP University

SU-OP.1P.2 **14:20-14:40**
Integrated Self-Isolation Technique for a Compact Wideband ISM MIMO Antenna
Maddirala Ajay Kumar, Bappadittya Roy, VIT-AP University

SU-OP.1P.3 **14:40-15:00**
Physics-Informed Tunnel Network for Efficient High-Resolution Radio Wave Propagation Modeling
Zihan Du, Dong He, Kunyu Wu, Yuqi Ouyang, Hao Qin, Sichuan University; Xinyue Zhang, University College Dublin; Xingqi Zhang, University of Alberta

SU-OP.1P.4 **15:00-15:20**
Intelligent Optimization of Access Point Deployment in Communication-Based Train Control Systems
Zihan Feng, Kunyu Wu, Qiushi Zhao, Hao Qin, Sichuan University; Sicheng An, Politecnico di Milano; Xinyue Zhang, University College Dublin; Xingqi Zhang, University of Alberta

SU-OP.1P.5 **15:20-15:40**
Probability Distribution Function Estimation for Tunnel Propagation via the Multilevel Monte Carlo Method
Sicheng An, Luca Di Rienzo, Lorenzo Codecasa, Politecnico di Milano ; Zhehang Ye, Hao Qin, Sichuan University, Xinyue Zhang, University College Dublin ; Xingqi Zhang, University of Alberta

Tea Break **15:40-16:10**

Session: Advanced Computational Electromagnetics: Methods and Applications
Session Chairs: Xiaomin Pan, Beijing Institute of Technology; Shunchuan Yang, Beihang University

SU-OP.1P.6 **16:10-16:30**
A Domain Decomposition-Based Model Order Reduction Method for FEM Electromagnetic Analysis
Zihan Yang, Mingming Tang, Yanfeng Lu, Zhenhong Fan, Dazhi Ding, Nanjing University of Science & Technology

SU-OP.1P.7 **16:30-16:50**

Analysis the Frequency Properties of EM Wave in Time-Varying Magnetized Plasma with DGTD

Xianmin Guo, Lixia Yang, Information Materials and Intelligent Sensing Laboratory of Anhui Province; Chao Liu, Dong Zhu, Xiaolong Pan, Yong Bo, Wei Chen, Anhui University

SU-OP.1P.8 **16:50-17:10**

A DL-based Scheme for Solving EM Scattering From Scatterers With Incomplete Profiles

Ji-Yuan Wang, Liang Zhang, Yun-Chuan Wang, Xin-Yue Lou, Beijing Institute of Technology

SU-OP.1P.9 **17:10-17:30**

A Stable SBP-SAT FDTD Subgridding Method for T-Junction Blocks Applied to PEC Wedge Analysis

Yuhui Wang, Shunchuan Yang, Beihang University; Wei-Jie Wang, Institute of Applied Physics and Computational Mathematics; Jian Wang, Ningbo University; Xingqi Zhang, University of Alberta; Xinyue Zhang, University College Dublin

SU-OP.1P.10 **17:30-17:50**

Full-Wave Vector Finite Element for Integrated Circuit Simulation with Surface-Type Lumped Elements

Zhiheng Li, Shunchuan Yang, Beihang University; Wei-jie Wang, CAEP Software Center for High Performance Numerical Simulation & Institute of Applied Physics and Computational Mathematics

SU-OP.1P.11 **17:50-18:10**

Multiple Object Electromagnetic Scattering Prediction Through A Physics-Informed Graph Neural Network

Zhe Jiang, Shunchuan Yang, Beihang University; Wei-jie Wang, CAEP Software Center for High Performance Numerical Simulation & Institute of Applied Physics and Computational Mathematics

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Sunday, April 12 **14:00-18:10**

SU-OP.2P **Lyon Hall, 3rd Floor**

Session: AI-Driven Innovations in Electromagnetic Materials, Devices, and Computational Methods

Session Chairs: Menglin Zhai, Donghua Univerisity; Wu Yang, Southeast University

SU-OP.2P.1 **14:00-14:20**

Efficient Analysis of Electromagnetic Scattering in Large-Scale Finite Periodic Structures Using Physics-informed Entire-Domain Network
Tian Liu, Fei Guo, Bingbing Song, Wenzhe Song, Zehui Chen, Wu Yang, Southeast University; Weibing Lu, Southeast University & Donghua University

SU-OP.2P.2 **14:20-14:40**
Low-Complexity Column Overlay:1-Bit RIS Pre-coding Beam Scanning Optimization
Tongxuan Wu, Menglin Zhai, Donghua University; Rui Pei, Jiatong Wu, Xi'an Jiaotong Liverpool University; WeiBing Lu, Donghua University & Southeast University

SU-OP.2P.3 **14:40-15:00**
Build with Your Diode: Inverse Design of Pre-Defined Multi-Layer Reconfigurable Transmissive Metasurfaces
Jiatong Wu, Rui Pei, Zhao Wang, Jingchen Wang, Mark Leach, Haochuan Jiang, Xi'an Jiaotong-Liverpool University; Menglin Zhai, Donghua University

SU-OP.2P.4 **15:00-15:20**
Moving Sparse Uniform Frequency Diverse Array for Three-Dimensional Parameter Estimation
Pengfei Liu, Yunlong Yang, Donghua University; Long Sui, Urban and Rural Planning Service Center of Zhanhua District of Binzhou City

SU-OP.2P.5 **15:20-15:40**
Sparse Nested Arrays for Localization of Mixed Near-Field and Far-Field Sources
Junkai Li, Yunlong Yang, Donghua University; Long Sui, Urban and Rural Planning Service Center of Zhanhua District of Binzhou City

Tea Break **15:40-16:10**

SU-OP.2P.6 **16:10-16:30**
Physics-Constrained Generation of Random Deformations for Textiles
Xiaojuan Li, Menglin Zhai, Donghua University; Wei-Bing Lu, Donghua University & Southeast University

Session: Oral Session
Session Chairs: Meisong Tong, Tongji University; Li Zhang, Shanghai Polytechnic University

SU-OP.2P.7 **16:30-16:50**

Low-Cost FR-4 Compact Ground-Backed Dual-Band Metamaterial Absorber for 5 and 9 GHz
Shakeel Ahmad, Akhtar Khan, Mei Song Tong, Tongji University

SU-OP.2P.8 **16:50-17:10**
Polarization Insensitive Dual-Layer FSS with Two Transmission Nulls for mmWave Filtering Applications
Akhtar Khan, Shakeel Ahmad, Mei Song Tong, Tongji University

SU-OP.2P.9 **17:10-17:30**
Solar Assisted Hybrid air conditioning system
Teresiah Kamau, Dedan Kimathi University of Tehnology

SU-OP.2P.10 **17:30-17:50**
Towards Scalable and Efficient Multicast in Cell-Free Massive MIMO: A Unified Framework for Precoding Strategy Analysis
Muhammad Arslan, Ajay K. Poddar, Mei Song Tong, Tongji University; Ulrich L. Rohde, Rohde & Shwarz

SU-OP.2P.11 **17:50-18:10**
Accurate Solutions of Surface Integral Equations with Penetrable Media Based on Higher-Order Nystrom Discretization
Sen Yin Wei, Mei Song Tong, Tongji University

Sunday, April 12 **14:00-16:50**
SU-OP.3P **Leeds Hall, 3rd Floor**

Session: Analysis of Electromagnetic Properties of Moving Targets
Session Chairs: Gaobiao Xiao, Shanghai Jiao Tong University; Lei Kuang, East China Normal University

SU-OP.3P.1 **14:00-14:20**
A Parallel Algorithm for Electromagnetic Analysis of Multiple Complex Targets Using the Equivalence Principle
Junjie Xi, Jinwei Zhang, Mengmeng Li, Dazhi Ding, Nanjing University of Science and Technology

SU-OP.3P.2 **14:20-14:40**
Numerical Analysis of Electromagnetic Scattering of Uniformly Moving PEC Objects
Guomin Liu, Gaobiao Xiao, Shanghai Jiao Tong University

SU-OP.3P.3 **14:40-15:00**
Transient Analysis of the Radiation Characteristics of a 4D Antenna
Junwei Zhu, Gaobiao Xiao, Shanghai Jiao Tong University

SU-OP.3P.4 **15:00-15:20**

Optimizing the Discrete Array Factor Based on Continuous Array Factor

Ruilin Wang, Junwei Zhu, Gaobiao Xiao, Shanghai Jiao Tong University

SU-OP.3P.5 **15:20-15:40**

Rotor-Blade Micro-Doppler Modeling Based on a High-Order FDTD Scheme with a Relaxed Stability Constraint

Xiaona Zhao, Jing Niu, Lei Kuang, Shanghai Key Laboratory of Multidimensional Information Processing

Tea Break **15:40-16:10**

SU-OP.3P.6 **16:10-16:30**

A Reduced-Order Impedance Model of the Quasi-Resonant Harmonic Wave-Suppression and Current Monitoring Strategy for the PMSM systems

Jindong Yang, Qiang Zuo, Zhenglin Li, Yuan Yao, Ting Ting Gu, Zhejiang University; Wei Shao,Zhejiang University

SU-OP.3P.7 **16:30-16:50**

Solving the Fields of a Moving Hertzian Dipole with Frame-Hopping Method

Gaobiao Xiao, Shanghai Jiao Tong University

Sunday, April 12 **14:00-16:50**

SU-OP.4P **Sydney Hall, 3rd Floor**

Session: Advanced Numerical Strategies for Multiscale Electromagnetics and Multiphysics Coupling

Session Chairs: Wei E. I. Sha, Zhejiang University; Ming-Lin Yang, Beijing Institute of Technology

SU-OP.4P.1 **14:00-14:20**

An SBR Acceleration Method Based on Ray Culling via Point-Projection Aperture Mapping

Liang Xue, Yitong Zhang, Bo Sun, Xingyue Guo, Yuan'an Liu, Beijing University of Posts and Telecommunications

SU-OP.4P.2 **14:20-14:40**

Steady-State Thermal Rectification and Active Control via Thermoelectric Coupling

Kaile Sun, Ying Li, Zhejiang University

SU-OP.4P.3 **14:40-15:00**

Coupled Electromagnetic-Thermal-Mechanical Modeling of Wireless Passive Sensors

Yijia Cheng, Wei E. I. Sha, Zhejiang University; Yujie Hua, Baiyun Wang, Wenxuan Tang, Southeast University; Kang Wang, Gang Shao, Zhengzhou University

SU-OP.4P.4 **15:00-15:20**

An Efficient Higher-Order Discontinuous Galerkin Formulation for Scattering by Complex Non-Penetrable Targets

Zi-Chen Li, Guo-Zheng Zhou, Ming-Lin Yang, Xin-Qing Sheng, Beijing Institute of Technology

SU-OP.4P.5 **15:20-15:40**

Adaptive h-Refinement method of Integral Eqation Method for Multiscale Problems

Yun-Han Chen, Zi-Chen Li, Qi-Ya Hu, Xin-Qing Sheng, Beijing Institute of Technoly

Tea Break **15:40-16:10**

SU-OP.4P.6 **16:10-16:30**

An Efficient Simulation Method for Microwave Heating of Thin-Walled Containers Based on Transformation Optics

Fengming Yang, Chengdu University of Technology; Huacheng Zhu, Sichuan University

SU-OP.4P.7 **16:30-16:50**

Ultrasonic Ride Verification Using Consumer Mobile devices

Venkata Satya YerriNaidu Appana, Meta Facebook; Sri Ramakrishna Suresh Vattikuti, Arasur; Charvi Shree Appana, Dublin High School

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Sunday, April 12 **14:00-17:50**

SU-OP.5P **Marseilles Hall, 3rd Floor**

Session: Scientific Computing and Machine Learning in Geophysical Electromagnetic Prospecting

Session Chairs: Decheng Hong, Jilin University; Dikun Yang, Southern University of Science and Technology

SU-OP.5P.1 **14:00-14:20**

An Efficient Multigrid Smoother based on Finite Element Method for 3-D Magnetotelluric Data

Xinhao Chen, Rongwen Guo, Dengkang Wang, Chao Li, Siying Dai, Xiao Feng, Central South University; Yongfei Wang, Tsinghua University

SU-OP.5P.2 **14:20-14:40**

3D Magnetotelluric Inversion Accelerated by Divergence-Free Regularization with Multigrid

Dengkang Wang, Rongwen Guo, Xinhao Chen, Chao Li, Siying Dai, Xiao Feng, Central South University; Yongfei Wang, Tsinghua University

SU-OP.5P.3 **14:40-15:00**

Magnetic Anomaly Component Transformation Based on Broad Learning

Qiang Zu, Shandong University of Aeronautics; Tao Tao, Peng Han, Southern University of Science and Technology; Xiao-Hui Yang, Chengdu University of Information Technology

SU-OP.5P.4 **15:00-15:20**

3-D Fractional Order Modelling Method of Multiple Effects in ATEM Surveys

Shuang Lv, Hui Luan, Yanju Ji, Huaishi Liu, Jilin University

Tea Break **15:40-16:10**

Session: Advances of EMplus and AI Technology in Interdisciplinary Research

Session Chairs: Naixing Feng, Anhui University; Yuxian Zhang, Anhui Unversity

SU-OP.5P.6 **16:10-16:30**

Intelligent Prediction of Far-Field Patterns for Conformal Metasurfaces Based on Neural Networks

Wenxuan Luo, Jianlin Su, Xiongwei Wu, Qicheng Chen, Jianwei You, Junjia Wang, Southeast University

SU-OP.5P.7 **16:30-16:50**

A Multimodal fMRI Signal Reconstruction Model Based on Cross-Attention Mechanism

Ruiyue Tang, Renzhou Gui, Yaqi Wang, Jiawei Bi, Tongji University

SU-OP.5P.8 **16:50-17:10**

Linear-Array Beamforming Based on Particle Swarm Optimization with Time-Varying Tuning

Yinbin Pan, Yuxian Zhang, Lixia Yang, Zhixiang Huang, Anhui University

SU-OP.5P.9 **17:10-17:30**

Application of SPR-driven h-adaptive Method of Moments in UWB Antenna

Qun Wei, Qingyu Feng, Lixia Yang, Zhixiang Huang, Anhui University

SU-OP.5P.10 **17:30-17:50**

Manifold Restoration for Robust 2D DOA Estimation of Coherent Sources in Disordered Arrays

Jie Wang, Qun Wei, Qingyu Feng, Anhui University

SU-OP.5P.11 **17:50-18:10**

High-Confidence Deep Learning Model Based on Multiple Electromagnetic Physical Signals for Fault Diagnosis of Particle Accelerator Power Systems

Ruining Tong, Zhiyu Xu, Jiahao Gong, Junjie Zhang, Tongji University; Haini Qu, State Grid Shanghai Municipal Electric Power Company

INTERACTIVE FORUMS

Friday, April 10, 16:00-18:00

Saturday, April 11, 10:00-12:00
Saturday, April 11, 16:00-18:00

Sunday, April 12, 10:00-12:00
Sunday, April 12, 16:00-18:00

Friday, April 10	16:00-18:00
FR-IF.1P	Lobby at 3rd Floor

FR-IF.1P.1

Pinpoint Divide-and-Conquer Physics-Informed Neural Networks for Predicting Thermo-Mechanical Multiphysical Problems

Jiahao Quan, Zhixiang Huang, Naixing Feng, Anhui University

FR-IF.1P.2

A TSETI Method for Transient Thermal Simulation

Jiaxin Han, Zhixiang Huang, Naixing Fen, Anhui University

FR-IF.1P.3

Electromagnetic Compatibility Conducted Susceptibility Test and Analysis for LANs

Nan Wei, Lilin Li, Tong Wang, Beihang University

FR-IF.1P.4

U-Net with Multi-Scale Skip Connections for Dynamic Motion Deblurring

Linjin Li, Xingang Ren, Zhixiang Huang, Naixing Fen, Anhui University

FR-IF.1P.5

Alternative Global-to-Local Implementation based on Physics-Informed Neural Operator for Multiphysical Predictions in Electronic Device

Ziyu Wu, Zhixiang Huang, Naixing Feng, Anhui University

FR-IF.1P.6

Convolutional Encoder-Decoder-Based Electric Field Intensity Solver for TGV Chip Arrays

Yilai Fan, Zhixiang Huang, Naixing Feng, Anhui University

FR-IF.1P.7

Preliminary Modeling of LED-Based Irradiation in a Portable Disinfection Chamber

Rita Veilande, University of Latvia, FST IAPS; Gita Revalde, University of Latvia and Riga Technical University

FR-IF.1P.8

Sheet Impedance Boundary Conditions in Finite Element Method and Equivalent Analysis of Periodic Structures

Yuxin Lin, Sheng Zuo, Zhongchao Lin, Yixuan Zhang, Haoxiang Wu, Xidian University

FR-IF.1P.9

The theory research of unified electromagnetic field based on comprehensive information theory

Haijun Ye, Zhengliang Lv, Zijie Wang, China Academy of Electronics and Information Technology

FR-IF.1P.10

A High-Efficiency ITO-Based Optically Transparent Butterfly-Shaped Hollow-Out Microstrip Antenna

Sicong Wang, Jinhong Chen, Xiaofei Xu, Shanghai University

FR-IF.1P.11

Millimeter-wave Radar-based Heartbeat Monitoring based on Max Variance Searching in Distance Dimension

Yutong Zhao, Jiayuan Kong, FangZheng Zhang, Chenchang Zeng, Yuhui He, Shilong Pan, Nanjing University of Aeronautics and Astronautics; Zhenyu Xu, Shanghai Institute of Satellite Engineering

FR-IF.1P.12

Multi-beam phase-compensated folded transmission array antenna based on phased array feed

Zechen Li, Youqian Su, Yahong Li, Jingnan Guo, Zibin Weng, Xidian University

FR-IF.1P.13

Adaptive Window Weighting for Interference Suppression in Near-Field Sparse Array Millimeter-Wave Imaging

Yaqi Xiong, Qianfa Tang, Yuhui He, Fangzheng Zhang, Zhenyu Xu, Shilong Pan, Nanjing University of Aeronautics and Astronautics

FR-IF.1P.14

A Novel Design Method for Microstrip Filters Based on Genetic Algorithm

Yue Lu Zhang, Mei Song Tong, Tongji University

FR-IF.1P.15

Compact Microstrip Antenna Designed by Cutting J-Shaped Slots on the Patch

Jinhong Chen, Wenqi Chen, Sicong Wang, Xiaofei Xu, Shanghai University

FR-IF.1P.16

Design and Scaled-Model Experimental Study of a Low-Frequency Broadband Absorber

Peixi Xu, Juan Chen, Kaihang Fan, Chunhui Mou, Xi'an Jiaotong University

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Saturday, April 11	**10:00-12:00**
SA-IF.1A	**Lobby at 3rd Floor**

SA-IF.1A.1

An Interpolating Frequency Sweeping Technique Based on Vector Fitting for Finite Element Method

Haonan Cai, Sheng Zuo, Zhongchao Lin, Yixuan Zhang, Haoxiang Wu, Xidian University

SA-IF.1A.2

A Memory Reduction Technique for S-Parameter Extraction of Microwave Passive Components

Guanyu Lai, Sheng Zuo, Zhongchao Lin, Yixuan Zhang, Haoxiang Wu, Xidian University

SA-IF.1A.3

Physics-Embedded PointNet for Radiation-Pattern Recovery of Faulty Phased Array Antennas

Gao-zhan Peng, Hai-tao Chen, Jie Yu, Wuhan Maritime Communication Research Institute

SA-IF.1A.4

Design of A Wideband Ridged Waveguide-Based Slot Array Antenna Element for 1-D Beam Scanning

Yan Qu, Academy of Space Information System; Honghui Jiang, Qi Zheng, Shanghai University; Mengyang Huangfu, Xi'an University of Architecture and Technology

SA-IF.1A.5

Research on Intensity-Superposition Infrared Reflectometry for SiC Epitaxial-Layer Thickness Metrology

Zheng Zhou, Ziyan Li, Yuxuan Wang, Shitao Ding, Yuhao Zhu, Qinghai University; Ye Liang, Shenzhen University

SA-IF.1A.6

Topology-Preserving Multi-Stage Framework for Dynamic Brain Networks and Functional States in Depression

Jiawei Bi, Yaqi Wang, Renzhou Gui, Tongji University

SA-IF.1A.7

Research on the RCS Reconstruction and Extrapolation Based on Scattering Centers

Yixin Guo1, Yi Ren, Xidian University, Jin Li, Empyrean Technology Co., Ltd.

SA-IF.1A.8

A Continuously Tunable Reflective Metasurface for Dynamic Generation of Vortex Beams

Beile Gao, Yunhua Zhang, Siyuan He, Wuhan University; Rui Feng, North University of China

SA-IF.1A.9

3D MOR Inversion of ATEM Data

Yihang Peng, Huake Cao, Jianmei Zhou, Chang'anUniversity

SA-IF.1A.10

Accurate Automated GPR Target Detection via SFCW Response Synthesis and DBSCAN

Xiaomeng Zhao, Yaqi Wang, College of Electronic and Information Engineering, Tongji University

SA-IF.1A.11

A Physics-Guided Complex-Valued Network for Quantitative Electromagnetic Inverse Scattering

Xiaomeng Zhao, Yaqi Wang, College of Electronic and Information Engineering, Tongji University

SA-IF.1A.12

A Fourier Neural Operator-Based Surrogate Model for Efficient Magnetotelluric Forward Modeling

Xiao Feng, Jianxin Liu, Rongwen Guo, Shengqi Tian, Central South University

SA-IF.1A.13

Study on Micro-Motion Separation Based on Helicopter Rotor

Ran Yan, Yao Ren, BoLin Zhang, National Key Laboratory of Scattering and Radiation

SA-IF.1A.14

Measurement Method of EIRP Value for Active Phased Array Antennas Based on Planar Near-Field

Wenqian Tang, Bowei Ruan, Huihua Wang, Shanghai Aerospace Electronic Technology Institute

SA-IF.1A.15

Physics-Aware Cascaded Detection Framework for SAR Aircraft Detection

Yang Kang, Chao Li, National Key Laboratory of Scattering and Radiation , Beijing 100854 , China

SA-IF.1A.16

Coded Sensing Decoupled Displacement Sensor Based on Four-port Microstrip Resonator
Yaming Xie, Yihao Chen, Guochun Wan, Tongji University

Saturday, April 11	**16:00-18:00**
SA-IF.1P	**Lobby at 3rd Floor**

SA-IF.1P.1
Single-Cut Near-Field Antenna Measurement Method Based on Multipole Expansion with Error Compensation
Zhang Jian, Yi-Xuan Zhang, Zi-Bin Weng, Yong-Chang Jiao, Xidian Universit

SA-IF.1P.2
Research on 3-D magnetotelluric algebraic multi-resolution grid forward modeling based on adaptive grid
Siying Dai, Jianxin Liu, Rongwen Guo, Central South University; Jian Li, Southwest Jiaotong University

SA-IF.1P.3
2D Magnetotelluric Inversion Based on Automatic Differentiation
Chao Li, Rongwen Guo, Central South University

SA-IF.1P.4
A Deep Learning-Assisted Bat Algorithm for 2-D Multi-Target Inverse Scattering
Ling Yao Chen, Chun Xia Yang, Shanghai Normal University; Mei Song Tong, Tongji University

SA-IF.1P.5
Simulating hypervelocity impacts due to space debris on satellites
Wang Chuci, The University of Glasgow

SA-IF.1P.6
3-D time-domain airborne EM inversion based on unstructured finite-element method
Shiyuan Guo, Jilin University, Beijing Institute of Technology

SA-IF.1P.7
Mesh-Derived Scattering Center Modeling for Electromagnetic Analysis of Targets with Dynamic Components
Jiuxiang Liu, Kunyi Guo, Xinqing Sheng, Beijing Institute of Technology

SA-IF.1P.8
Design of an SIW-based Frequency-scanning Millimeter-wave MIMO Antenna for 5G Applications
Muhammad Husnain, Institute of Space Technology, Syed Shahan Jehangir; Oklahoma State University; Abdulrahman S. M. Alqadami, King Fahd University of Petroleum and Minerals; Muhammad Ikram, American University of Kuwait

SA-IF.1P.9
Applicability Analysis of Creeping Waves Diffraction Mechanism in Attributed Scattering Center Model
Qingyun Liu, Qi Huang, Jindou Yuan, and Qihui Zhang, National Key Laboratory of Scattering and Radiation, China

SA-IF.1P.10

A Trustworthy Adaptive h-Refinement Method for High-Resolution Scattering Centers Imaging

Ya Nan Lu, Yu Mao Wu, Fudan University; Jun Hu, The University of Electronic Science and Technology

SA-IF.1P.11

Development of Higher-Order Convolution PML (CPML) for the Conservative High-Order Modified FDTD (2,4) (CM24) Method

Jianxia Lu, Shaoqing Duan, East China Normal University

SA-IF.1P.12

Low-Frequency Magnetoelectric Antennas Based on Magnetoelectric Composites

Leye Tian, Hangyu Qian, Guo-Min Yang, Fudan University

SA-IF.1P.13

Automating PCB Component Placement via Natural Language Descriptions

Gooding Paul , Michelle Keah Lubale, Technical University of Mombasa

SA-IF.1P.14

A Rapid Estimation of the Electromagnetic Scattering Characteristics of the Obeject Coated with Absorbing Materials

Xian Fengyi, Jiang Ming, Lei Lin, University of Electronic Science and Technology of China

SA-IF.1P.15

Solving Electromagnetic Scattering Problem of Multi Targets by MoM and Vector Spherical Wave Transition Matrix

HE XINYU, JIANG MING, XU QI , LEI LIN, HU JUN, University of Electronic Science and Technology of China; SHAO HANRU, Yangtze Delta Region Institute (Huzhou), University of Electronic Science and Technology of China

SA-IF.1P.16

Physics-Informed Mixture Density Network Architecture for Inverse Design of Substrate Integrated Coaxial Line

Xiao-long Shi, Bi-Yi Wu, Xin-Qing Sheng, Beijing Institute of Technology

SA-IF.1P.17

PhyDiff: Physics-Guided Latent Diffusion for Trustworthy and High-Fidelity Electromagnetic Inverse Scattering

Xingran Guo, Tiaojie Xiao, Qi Cheng, Zongyi Zhou, Jie Liu, Keqin Li, National University of Defense Technology

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Sunday, April 12 **10:00-12:00**

SU-IF.1A **Lobby at 3rd Floor**

SU-IF.1A.1

A Conservative High-Order FDTD (2,4) Scheme for Reverse-Time Migration in Subsurface Imaging

Jianxia Lu, Shaoqing Duan, East China Normal University; Tingzhu Sun, China University of Mining and Technology

SU-IF.1A.2

Polarimetric Feature－Based Weak Sea-Surface Target Detection with Machine Learning
Sen Liu, Yangbo Zhou, Yunchuan Wang, Chengtao Zhao, Liang Zhang, Xinyue Lou, Xiaomin Pan, Beijing Institute of Technology
SU-IF.1A.3
An L1-FDTD Method for Electromagnetic Simulation of Cole-Cole Dispersive Media
Yiru Liang, Xinbo He, Bing Wei, Haonan Feng, Xidian University; Guilin Hou, Anhui University
SU-IF.1A.4
Research on FDTD Subgrid Techniques Based on Tree Data Structures
Linbo Yan, Xinbo He, Bing Wei, Ye Wang, Haonan Feng, Xidian University
SU-IF.1A.5
Effective 3D Reconstruction for Electromagnetic Scattering Modeling
Tian Jian Peng, Jian Wei You, Southeast University
SU-IF.1A.6
Privacy-Aware Electricity Energy Management via Adversarial Safe Reinforcement Learning
Jian Ruan, Zuxing Li, Qiang Li, Tongji University
SU-IF.1A.7
Coarse-to-Fine Reconstruction for Tunnel Propagation via Axial Recurrent Upsampling
Jiahao Li, Jingxin Xue, Yongyuan Hu, Yuqi Ouyang, Hao Qin, Sichuan University; Xinyue Zhang, University College Dublin; Xingqi Zhang, University of Alberta
SU-IF.1A.8
A Dielectric-Polarizer-Based Shared-Aperture CP Array for Satellite Communications
Yanfeng Meng, Guilin Hou, Guanghui Xu, Zhixiang Huang, Anhui University
SU-IF.1A.9
A Lightweight Agentic Framework for Self-Healing Computational Electromagnetics Simulations
Xi Chu, Trine University; Yupeng Hou, Amazon Inc.
SU-IF.1A.10
Dispersion Analysis and Isotropic Sampling Strategies for Multiple FDTD-Based Algorithms
Yue Zhu, Ju Wang, Yifan Lyu, Kaikun Niu, Anhui University; Miao He, Jirui Zhang, Southeast University
SU-IF.1A.11
Bistatic Scattering Center Extraction Based on Surface Induced Current
ZiliangZhao, Anqi Wang , Lixia Yang, Zhixiang Huang , Xingang Ren, Anhui University
SU-IF.1A.12
Solving Electromagnetic Scattering From 3-D Scatterers With Incomplete Profiles By Deep Learning
Ji-Yuan Wang, Zhi-Yuan Chen, Liang Zhang, Xin-Yue Lou, Yun-Chuan Wang, Chen-Tao Zhao, Xiao-Min Pan, Beijing Institute of Technology
SU-IF.1A.13
Physics-Driven Deep Learning for Efficient RCS Prediction with Physical Optics Prior
Yuxin Rong, Nanjing University of Posts and Telecommunications
SU-IF.1A.14

Dual-Band High-Gain Common-Caliber Subwavelength Cavity Antenna with Planar Metamaterials

Guiqiang Du, Junyang Li, Guang Lu, Shandong University; Wei Wang, Harbin Institute of Technology; Qipeng Wang, Peng Liu, AVIC Research Institute for Special Structures of Aeronautical Composites

SU-IF.1A.15

A Transition-Ratio-Adjustable Structured Mesh Generation Method for FDTD Simulation

Wanzhen Li, Chunhui Mou, Kaihang Fan, Xi'an Jiaotong University

SU-IF.1A.16

Automated Electromagnetic Filter Design Optimization Using Soft Actor-Critic Reinforcement Learning and Neural Network Simulators

Zhuoxi Chen, Kuiwn Xu, Hangzhou Dianzi University

SU-IF.1A.17

A Transmissive Polarization Conversion Metasurface Based on Broadband Circularly-Polarized Antennas

Zhe Yang Liu, Xiao Yu Li, Mei Song Tong, Tongji University

SU-IF.1A.18

A High-Q Microwave Sensor Based on Dual-Ring Resonators for Textile Material Detection

Lu Yi Liu, Mei Song Tong, Tongji University

Sunday, April 12 **16:00-18:00**

SU-IF.1P **Lobby at 3rd Floor**

SU-IF.1P.1

An SRR-based microwave sensor for low-permittivity liquid characterization enhanced by an interdigital capacitor and a defected ground structure

Yucheng Feng, Zhengjiang Zhao, Yongjin Zhou, Shanghai University

SU-IF.1P.2

A Compact UHF RFID Tag Antenna for Metallic Surfaces

Guobao Si, Jiachen Li, Yongjin Zhou, Shanghai University

SU-IF.1P.3

An Enhanced Vector Fitting Method for Accurate Electromagnetic Parameters Modeling

Jiaojiao Li, Jing Nie, Shunchuan Yang, Beihang University

SU-IF.1P.4

Directional Encryption Based on Space-Time-Modulated Metasurface

Xiaojie Lu, Xiaoyu Li, Xiaoyi Wang, Mei Song Tong, Tongji University

SU-IF.1P.5

A Hybrid Aperture-Phase Synthesis Strategy for Discrete Multi-Beam Metasurfaces

Xiaojun Chu, Xiaoyi Wang, Tongji University

SU-IF.1P.6

A Multi-Scale Physics Feature Characterization Framework for Adaptive FDTD Meshing

Qianxiong Gan, Jian Feng, Ming Fang, Anhui University

SU-IF.1P.7

Design of a Broadband Magnetoelectric Antenna Array Based on the Thin-Film Dual-Drive Structure

Shuai Peng, Xiaoyi Wang, Mei Song Tong, Tongji University

SU-IF.1P.8

Time-Modulated Frequency-Converting Amplifying Antenna

Bin Fang, Xiaoyi Wang, Xiaojie Lu, Mei Song Tong, Tongji University

SU-IF.1P.9

Hybrid Time-Frequency Feature Extraction for Radar Modulation Classification Using Dual-Branch ResNet

Junhao Liang, Xinyu Wang, Xuelong Xu, Xingang Ren, Xianliang Wu, Jin Zhao, Anhui University

SU-IF.1P.10

High-Precision Contactless Vital Signs Monitoring via Sub-bin Range Estimation with FMCW Radar

Ming Zhang, Deshun Huang, Hui Yan, Xianliang Wu, Anhui University

SU-IF.1P.11

Design and Investigation of a 77 GHz Millimeter-Wave Array Antenna

Wentao Deng, Xianliang Wu, Gang Wang, Anhui University

SU-IF.1P.12

A Passive Vector Modulator for 28-GHz Applications

Aliang Sun, Xianliang Wu, Gang Wang, Anhui University

SU-IF.1P.13

Study on CBGA Assembly Reliability Under Temperature Cycling Loads

Zhaozhao Liu, Yuying Dai, Xingang Ren, Anhui University; Wei Jiang, Anhui Changjiang Institute of Metrology & Measurement Metrology, Qiang Li, Industry-Education-Research Institute of Advanced Materials and Technology for Integrated Circuits

SU-IF.1P.14

A Dual-Polarized PIFA Array With CM/DM Excitations for Low-Coupling Airborne Applications

Ke-Xin Zhai, Bi-Yi Wu,Xin-Qing Sheng Beijing Institute of Technology; Yuan Zeng, COMAC Beijing Aircraft Technology Research Institute

SU-IF.1P.15

Azimuthal Super-Resolution Reconstruction for Forward-Looking Radar Based on FISTA

Zian Jiao, Hongxia Ye,Fudan University

SU-IF.1P.16

The Electromagnetic Scattering Impulse Response of a target Constructed by the Time-Domain Shooting and Bouncing Ray

Yuan Huang, Guangxi Minzu University; Juexin Zhang, Aerospace System Engineering Shanghai

SU-IF.1P.17

CFS-PML ABC for the Vector − Scalar Potential Formulation in FDTD method

Wangchao Hu, Renze Xie, Guilin Hou, Guoda Xie, Zhixiang Huang, Anhui University

SU-IF.1P.18

A Novel Design for Pixelated Dual-Resonant Antenna Based on Machine-Learning-Assisted Optimization

Ke Fu Li, Xiao Yu Li, Mei Song Tong, Tongji University

SOCIAL PROGRAM

Friday, April 10, 18:30-21:00, Banquet AB, 5th Floor

Welcome Reception

Saturday, April 11, 18:30-21:00, Celebration Banquet and Best Paper Award Ceremony, Banquet AB, 5th Floor

The celebration banquet with a best paper award ceremony is planned for ICCEM participants and their guests. Banquet tickets are limited in number and will be provided free of charge to attendees who register online. (Attendees who register on-site will not receive banquet tickets.).

ACCOMMODATIONS

We highly recommend to book Crowne Plaza Shanghai Nanjing Road which is also the conference venue. As a participating author, you can get a discount price or discount when you book the hotel. Please contact the hotel manager, Mr. Chloe wang, at *Chloe.wang@cpnanxinya.com* for your reservation.

There are other hotels close to the conference venue:

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Zhijiao Chen
Ziwei Li

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Zhaosheng Xia
Zhaoyuan Wang
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Zhe Jiang
Zhe Yu Luo
Zhehang Ye
Zheng Lang Jia
Zheng Zhou
Zheng-Yu Huang
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Zhongwei Xu
Zhou Wu
Zhou Xu
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Zi-Chen Li
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