Meta Wireless Project Newsletter

ISSUE #10
July 2025

- **Project Title**: Future Wireless Communications Empowered by Reconfigurable Intelligent Meta-Surfaces
- **Call**: H2020-MSCA-ITN-2020
- **Type of Action**: MSCA-ITN-ETN
- **Coordinator**: CNIT (Consorzio Nazionale Interuniversitario per le Telecomunicazioni)
- **Coordinating person**: Dr. Stefano Buzzi
- **EU contribution**: 3 995 128.44 Euro
- **Project start date**: December 1, 2020
- **Duration**: 48 months

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 956256.

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In this issue

Meta Wireless Dissemination

Meta Wireless activities and results are presented and promoted within the scientific community through: (i) publications in top-tier journals; (ii) presentations of results within major international conferences; (iii) participation and organization of dedicated workshops and public events; and (iv) uploading in open access repositories of research data and products (numerical databases and source codes).

To date, our ESRs have produced an impressive body of work during the project's lifetime, including **69 published papers**, **6 accepted papers** awaiting publication, and **6 papers currently under revision**. In total, 81 papers have been generated, comprising 33 journal articles and 48 conference proceedings. The complete list is available at the bottom of this newsletter.

On the Results page of the project website, it is possible to examine and download public documents and results of Meta Wireless Project.

In the reference period, the ESRs and/or PIs of the Meta Wireless project took part in the following dissemination events:

- Our ESRs, **Georgios Mylonopoulos** and **Robert Kuku Fotock** (CNIT/UniCas), had the privilege to participate in the prestigious IEEE SPAWC 2024 conference, held in the beautiful city of Lucca, Italy. Huge congratulations to Robert and George, who represented the Meta Wireless project by showcasing their research during the poster sessions. Throughout the event, they had the opportunity to engage with leading experts, exchange insights, and receive valuable feedback on their work.

  During the poster session, George showcased his work on "*Extended ARQ For Reliable Integrated Sensing and Communication Systems*" in collaboration with Behrooz Makki, Stefano Buzzi, and Gábor Fodor.
  George's work introduces the concept of extended automatic repeat request (e-ARQ) for integrated sensing and communications (ISAC) networks. His research explores multi-static sensing schemes, where receiving nodes provide feedback on sensing signals, enabling adaptive retransmissions that enhance sensing quality. The innovative e-ARQ technique improves detection accuracy and adaptability, key aspects for future 6G ISAC networks.

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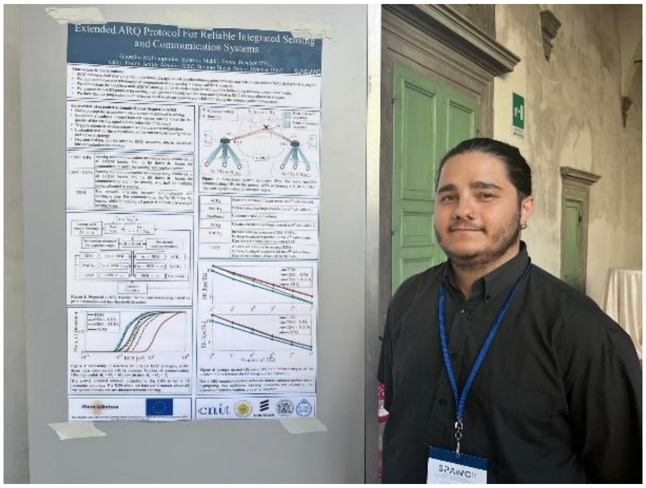
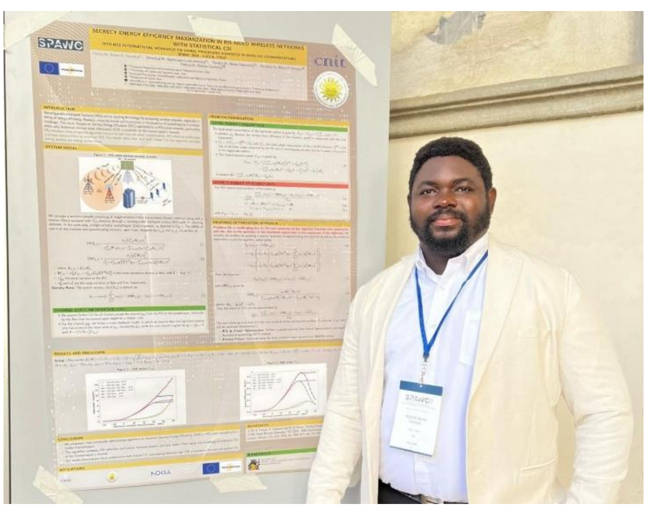
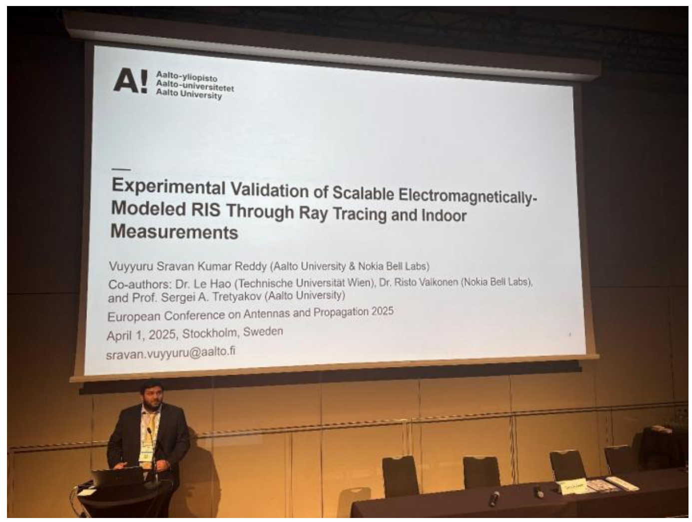


During the poster session, Robert showcased his work on "*Secrecy Energy Efficiency Maximization in RIS-Aided Wireless Networks with Statistical CSI*" in collaboration with Agbotiname Lucky Imoize, Alessio Zappone, Marco Di Renzo and Roberto Garello.

His research addresses the critical issue of maximizing secrecy energy efficiency in multi-user wireless networks using RISs to combat eavesdropping in uplink communications. Robert proposed a provably convergent optimization algorithm that optimizes transmit power, metasurface reflection coefficients, and base station receive filters. The complexity and performance of the solution were also analyzed and validated through numerical results.



- **Sravan Kumar Reddy Vuyyuru** participated in the 2025 19th EuCAP Conference session from March 31st to April 4th, 2025, to present his research work titled "Experimental Validation of Scalable Electromagnetically-Modeled RIS Through Ray Tracing and Indoor Measurements" and "Design and Validation of a Compact Dual-Band Bluetooth Antenna for Smartwatch Applications," in Stockholm, Sweden. His talk gave an overview of his research work on developing electromagnetically consistent reconfigurable reflectarrays with accurate angle-of-arrival detection and perfect anomalous reflection, using realistic patch arrays and integrating them into network simulators. He also participated in the poster competition and received the Best Propagation Paper Award at the conference. The Best Propagation Paper Award at EuCAP 2025 for work on experimental validation of scalable electromagnetically-modeled RIS through ray tracing and indoor measurement.



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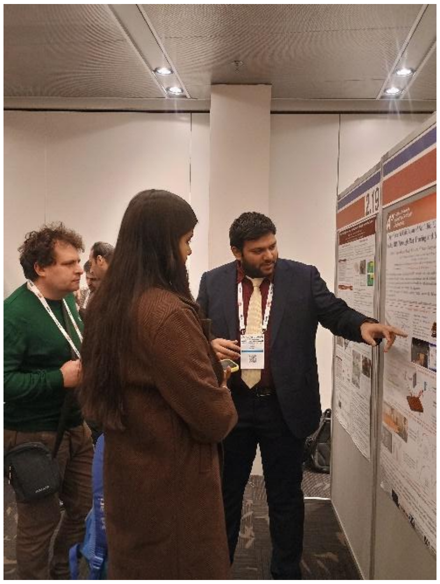
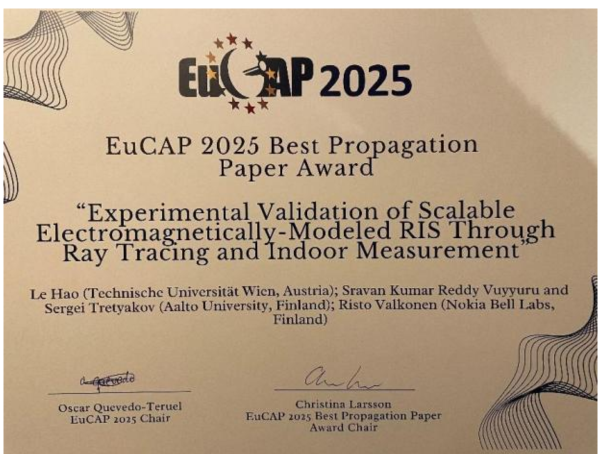
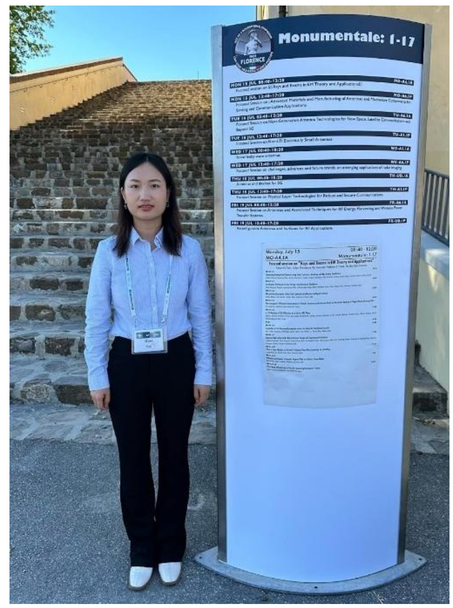




- **Joaquín García Fernández** participated in the 2025 19th EuCAP Conference session from March 31st to April 4th, 2025, to present the latest advancements of research work titled "*Metasurface Dome Antennas with Non-Locality Compensation*" in Stockholm, Sweden.

- **Le Hao** attended the 2024 IEEE International Symposium on Antennas and Propagation and ITNC-USNC-URSI Radio Science Meeting during 14-19 July 2024 in Florence, Italy, where she gave a presentation of the paper "*Optimizing propagation channels using static scatterers: Modeling and ray-tracing simulations*".



- **Mohammadsina Beyraghi** gave a talk at the University of Cassino and Southern Lazio, Cassino, Italy, on the latest advancements of his research work. Talk title: "Ray Tracing-Based Deployment and Configuration of Reconfigurable Intelligent Surfaces (RISs)". In this talk, Sina dived into cutting-edge system-level simulations of wireless networks. Attendees explored a site-specific ray-tracing framework designed for optimizing RIS deployment and phase shift configuration, spanning 4G, 5G, and future 6G systems. He also offered a hands-on look at NVIDIA Sionna's ray-tracing tools, showing how they support state-of-the-art wireless research and channel modeling in real-world urban scenarios.

- **Prof. Angel Lozano** from Universitat Pompeu Fabra (UPF), Barcelona, Spain, presented part of the Meta Wireless project results on RIS-aided MIMO communication systems at the Lavender Summit 2024 organized in Cannes by Huawei.

- **Sravan Kumar Reddy Vuyyuru** delivered a presentation at the workshop "Workshop on electromagnetics of complex media: on occasion of retirement of Professor Sergei Tretyakov", organized on August 27-28, 2024, at Aalto University, Espoo, Finland, on the topic entitled "*Design and Modeling of Electromagnetics-consistent Reconfigurable Intelligent Surfaces in Next-Generation Wireless Networks*". His talk gave an overview of research activities on "Reconfigurable Intelligent Surfaces" conducted at Nokia Bell Labs and Aalto University. The two-day event featured an engaging scientific program, with presentations showcasing the latest research findings from various participants.

- **Joaquín García Fernández** attended the Huawei Tech Arena Italy 2024: A physical event was organized by Huawei on November 18th for PhD students and young researchers. Tech Arena Italy 2024 is a Call for Ideas dedicated to PhDs: current students, fresh PhDs, and Post Docs, with the goal to demonstrate the value of doctoral research as an impetus for innovation and a force to shape the future of technology and research in Huawei. Joaquín gave a five-minute pitch on Antenna Technology for 5G advanced applications and Joint Communication and Sensing. Importantly, he was awarded the third prize.

ESR PhD Graduations

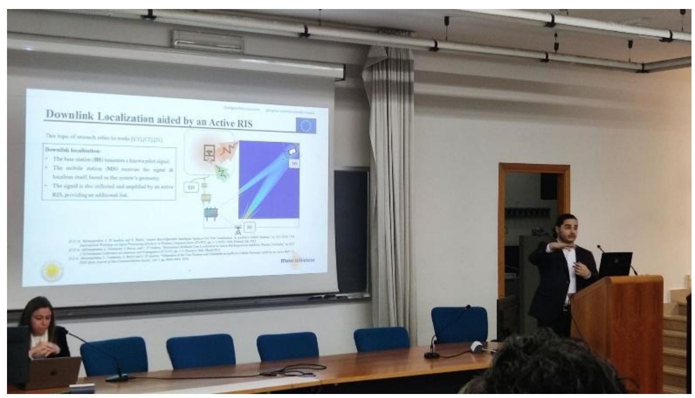
Celebrating Success: PhD Defences and Graduations in the Meta Wireless MSCA ITN Project

We are thrilled to share the exciting milestones reached by the Meta Wireless MSCA ITN project community. Over the past months, several talented Early-Stage Researchers have successfully defended their PhD theses and graduated, marking a significant achievement in their academic and professional journeys. This newsletter celebrates their hard work, innovative research contributions, and the bright future ahead in advancing wireless technologies. Join us in congratulating the newest experts emerging from this vibrant research network!

Next, some pictures from the PhD Defence days.

- **Le Hao** defended her PhD thesis titled "*RIS analysis from communication and electromagnetic perspectives*" on 1st October 2024 at TU Wien, Austria.

- **Georgios Mylonopoulos** defended his PhD thesis titled "*Localization and Sensing Through Meta-surface Structures*" on 18th December 2024 at the University of Cassino and Southern Lazio, Cassino, Italy.



- **Doğa Gürgünoğlu** defended his PhD thesis titled "*Channel Estimation and Interference Mitigation for Reconfigurable Intelligent Surfaces*" on 20th March 2025 at KTH Royal Institute of Technology, Stockholm, Sweden.

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RIS Simulator

The RIS Simulator has been successfully developed!

An exciting Achievement from the ITN META WIRELESS Project: A system-level simulator for Reconfigurable Intelligent Surfaces (RISs) has been successfully developed—a key milestone in advancing the next generation of wireless networks. Congratulations to our partners, **TU Wien** and **Aalto University**, for leading the development of this powerful tool that will enable the evaluation and optimization of RIS-enabled wireless systems at scale. The simulator can be downloaded from the Meta Wireless project website. Here are the direct links to the download:

File	Date added	File size
RIS Simulator	April 23, 2025, 5:39 pm	5 MB
RIS Simulator - User Manual	April 23, 2025, 5:40 pm	4 MB

Women's workshop on 6G wireless networks

Women's Workshop on next-gen 6G wireless networks: As the rollout of 5G continues worldwide, industry and academia are already looking to the future with 6G!

The women's Workshop on next-gen 6G wireless networks, organized by the EU-funded META WIRELESS and ISLANDS projects, took place on November 25th, 2024. This fully online event delved into key 6G advancements, such as Reconfigurable Intelligent Surfaces (RIS) and Integrated Sensing and Communications (ISAC), with insights from female experts in the field. This workshop isn't just about technology—it's about closing the gender gap in 6G research and encouraging more diversity and inclusion in the next frontier of wireless innovation. With this initiative, we hoped to inspire young women to explore the exciting field of 6G and connect with pioneering female researchers.

Workshop lineup features exceptional female speakers, international professors, and researchers who are leading in their respective fields of study. The details of the speakers and agenda are presented next.

SPEAKERS

Prof. Sofie Pollin
KU Leuven - Belgium

Dr. Carmen D'Andrea
CNIT and UNICAS - Italy

Dr. Özlem Tuğfe Demir
TOBB University of Science and Technologies - Turkey

Dr. Anna Guerra
CNR and University of Bologna - Italy

Dr. Derya Malak
EURECOM - France

AGENDA

14:30 - 14:45 (CET)
Dr. Carmen D'Andrea: "*Introduction to METAWIRELESS AND ISLANDS MSCA Projects*"

14:45 - 15:25 (CET)
KEYNOTE TALK
Prof. Sofie Pollin: "*Massive Integrated Communication and Sensing*"

15:25 - 15:55 (CET)
Dr. Özlem Tuğfe Demir: "*RIS-Assisted ISAC: Precoding and Phase-Shift Optimization for Mono-Static Target* Detection"

15:55 - 16:20 (CET)
Dr. Anna Guerra: "*Wireless Localization and Sensing Empowered by Reconfigurable Intelligent Surfaces*"

16:20 - 16:50 (CET)
Dr. Derya Malak: "*Coding for distributed computation over networks*"

Final ESR Publication List

Published papers, including articles in journals and in conference proceedings:

01. J. Shabanpour and C. R. Simovski, "Angular and Polarization Stability of Broadband Reconfigurable Intelligent Surfaces of Binary Type," in IEEE Access, vol. 10, pp. 126253-126268, 2022, doi: 10.1109/ACCESS.2022.3226264 ì.

02. J. Shabanpour, S. Beyraghi and C. R. Simovski, "THz Multiple-Beam Manipulation by Reconfigurable Intelligent Surface with Independent Phase/Amplitude Control," in Proc. of the 2023 Seventeenth International Congress on Artificial Materials for Novel Wave Phenomena (Metamaterials), Chania, Greece, 2023, pp. X-338-X-340, doi: 10.1109/Metamaterials58257.2023.10289180.

03. J. Shabanpour, V. Lenets, G. Lerosey and C. R. Simovski, "Binary Reconfigurable Intelligent Surfaces with Angle-Independent Reflection Phase," in Proc. of the 2023 Seventeenth International Congress on Artificial Materials for Novel Wave Phenomena (Metamaterials), Chania, Greece, 2023, pp. X-341-X-343, doi: 10.1109/Metamaterials58257.2023.10289513.

04. J. Shabanpour, V. Lenets, G. Lerosey, S. Tretyakov, and C. R. Simovski, "Engineering of intelligent reflecting surfaces: Reflection locality and angular stability," in IEEE Transactions on Antennas and Propagation, vol. 72, no. 5, pp. 4198-4211, May 2024, doi: 10.1109/TAP.2024.3375659

05. J. Shabanpour and C. R. Simovski, "On the design of reflecting intelligent surfaces for multi-user NOMA communication networks," in Proc. of the 2024 IEEE International Symposium on Circuits and Systems (ISCAS), Singapore, Singapore, 2024, pp. 1-5, doi: 10.1109/ISCAS58744.2024.10558543.

06. J. Shabanpour and C. R. Simovski, "Tunable Optimal Anomalous Reflection Using Discrete Impedance Metasurfaces," in Proc. of the 2024 18th European Conference on Antennas and Propagation (EuCAP), Glasgow, United Kingdom, 2024, pp. 1-4, doi: 10.23919/EuCAP60739.2024.10501638.

07. J. Shabanpour, Y. Li, S. Tretyakov and C. Simovski, "Physical Optics and Reflection Locality in Designing Reconfigurable Intelligent Surfaces," in IEEE Open Journal of Antennas and Propagation, vol. 5, no. 6, pp. 1571-1579, Dec. 2024, doi: 10.1109/OJAP.2024.3422681

08. J. Shabanpour, X. Wang, S. Kosulnikov and C. Simovski, "Advancing RIS Beamforming Efficiency: Moving Beyond Diagonal Matrix Techniques," in IEEE Transactions on Vehicular Technology, early access, June 2025, doi: 10.1109/TVT.2025.3583421.

09. J. Shabanpour, S. Tretyakov and C. Simovski, "Applicability of Physical Optics for Predicting the Diffraction Pattern of Binary Metasurfaces," in Proc. of the 2024 Eighteenth International Congress on Artificial Materials for Novel Wave Phenomena (Metamaterials), Chania, Greece, 2024, pp. 1-3, doi: 10.1109/Metamaterials62190.2024.10703229.

10. J. Shabanpour, C. Simovski, and G. Geraci, "Physically consistent RIS: From reradiation mode optimization to practical realization", in Proc. of the 2024 IEEE Globecom Workshops (GC Wkshps), to appear, 2024.

11. J. Shabanpour, "Multifunctional Intelligent Metamaterial Computing System: Independent Parallel Analog Signal Processing." Advanced Photonics Research, 5(10), 2024, 2400002. https://doi.org/10.1002/adpr.202400002

12. C. R. Simovski and J. Shabanpour, "Broadband Operation of Binary Metasurfaces: Limitations and Perspectives," in IEEE Access, vol. 13, pp. 58496-58508, 2025, doi: 10.1109/ACCESS.2025.3556467

13. M. Movahediqomi, G. Ptitcyn and S. Tretyakov, "Comparison Between Different Designs and Realizations of Anomalous Reflectors for Extreme Deflections," in IEEE Transactions on Antennas and Propagation, vol. 71, no. 10, pp. 8007-8017, Oct. 2023, doi: 10.1109/TAP.2023.3301735.

14. M. Movahediqomi, Y. Li, G. Ptitcyn, V. Asadchy, and S. Tretyakov, "Simultaneous Perfect Anomalous Reflection and Angle of Arrival Sensing in Reconfigurable Intelligent Surfaces." Advanced Optical Materials, 13(13), 2025, 2403033. https://doi.org/10.1002/adom.202403033

15. M. Movahediqomi, S. K. R. Vuyyuru, G. Ptitcyn, R. Valkonen, D.-H. Kwon, and S. A. Tretyakov, "Simultaneous perfect anomalous reflection and angle-of-arrival sensing using patch arrays," in Proc. of the IEEE Int. Symp. Antennas Propagat. (APSURSI), 2024. DOI: 10.1109/AP-S/INC-USNC-URSI52054.2024.10686489

16. Y. Li, X. Ma, X. Wang, G. Ptitcyn, M. Movahediqomi and S. A. Tretyakov, "All-Angle Scanning Perfect Anomalous Reflection by Using Passive Aperiodic Gratings," in IEEE Transactions on Antennas and Propagation, vol. 72, no. 1, pp. 877-889, Jan. 2024, doi: 10.1109/TAP.2023.3329665.

17. A. Zappone, M. Di Renzo and R. K. Fotock, "Surface-Based Techniques for IoT Networks: Opportunities and Challenges," in IEEE Internet of Things Magazine, vol. 5, no. 4, pp. 72-77, December 2022, doi: 10.1109/IOTM.001.2200170

18. R. K. Fotock, A. Zappone and M. D. Renzo, "Energy Efficiency Maximization in RIS-aided Networks with Global Reflection Constraints," ICASSP 2023 - 2023 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), Rhodes Island, Greece, 2023, pp. 1-5, doi: 10.1109/ICASSP49357.2023.10096617.

19. R. K. Fotock, A. Zappone and M. Di Renzo, "Energy Efficiency in RIS-Aided Wireless Networks: Active or Passive RIS?," in Proc. of the ICC 2023 - IEEE International Conference on Communications, Rome, Italy, 2023, pp. 2704-2709, doi: 10.1109/ICC45041.2023.10279284.
20. R. K. Fotock, A. Zappone and M. D. Renzo, "Energy Efficiency Optimization in RIS-Aided Wireless Networks: Active Versus Nearly-Passive RIS With Global Reflection Constraints," in IEEE Transactions on Communications, vol. 72, no. 1, pp. 257-272, Jan. 2024, doi: 10.1109/TCOMM.2023.3320700
21. R. K. Fotock, A. Zappone and M. Di Renzo, "Secrecy Energy Efficiency Maximization in RIS-Aided Wireless Networks," in Proc. of the ICC 2024 - IEEE International Conference on Communications, Denver, CO, USA, 2024, pp. 3065-3070, doi: 10.1109/ICC51166.2024.10623096.
22. R. K. Fotock, A. Lucky Imoize, A. Zappone, M. Di Renzo and R. Garello, "Secrecy Energy Efficiency Maximization in RIS-Aided Wireless Networks with Statistical CSI," in IEEE 25th International Workshop on Signal Processing Advances in Wireless Communications (SPAWC), Lucca, Italy, 2024, pp. 696-700, doi: 10.1109/SPAWC60668.2024.10694589.
23. G. Mylonopoulos, C. D'Andrea and S. Buzzi, "Active Reconfigurable Intelligent Surfaces for User Localization in mmWave MIMO Systems," in Proc. of the 2022 IEEE 23rd International Workshop on Signal Processing Advances in Wireless Communication (SPAWC), Oulu, Finland, 2022, pp. 1-5, doi: 10.1109/SPAWC51304.2022.9833921.
24. G. Mylonopoulos, L. Venturino, S. Buzzi and C. D'Andrea, "Maximum-Likelihood User Localization in Active-RIS Empowered mmWave Wireless Networks," in Proc. of the 2023 17th European Conference on Antennas and Propagation (EuCAP), Florence, Italy, 2023, pp. 1-5, doi: 10.23919/EuCAP57121.2023.10133203.
25. G. Mylonopoulos, L. Venturino, S. Buzzi and C. D'Andrea, "Estimation of the User Position and Orientation in mmWave Cellular Networks Aided by an Active RIS," in IEEE Open Journal of the Communications Society, vol. 5, pp. 4868-4884, 2024, doi: 10.1109/OJCOMS.2024.3437661.
26. G. Mylonopoulos, B. Makki, G. Fodor and S. Buzzi, "Adaptive Downlink Localization in Near-Field and Far-Field," in Proc. of the 2024 IEEE International Conference on Communications Workshops (ICC Workshops), Denver, CO, USA, 2024, pp. 1017-1022, doi: 10.1109/ICCWorkshops59551.2024.10615807.
27. G. Mylonopoulos, B. Makki, S. Buzzi and G. Fodor, "Joint User Detection and Localization in Near-Field Using Reconfigurable Intelligent Surfaces," in IEEE Wireless Communications Letters, vol. 14, no. 1, pp. 58-62, Jan. 2025, doi: 10.1109/LWC.2024.3487116.
28. G. Mylonopoulos, B. Makki, G. Fodor, and S. Buzzi, "Extended ARQ Protocol For Reliable Integrated Sensing and Communication Systems," in Proc. of the IEEE 25th International Workshop on Signal Processing Advances in Wireless Communication (SPAWC), IEEE, Lucca, Italy, Sept. 2024, pp. 321–325. DOI: 10.1109/SPAWC60668.2024.10694524.
29. G. Mylonopoulos, L. Venturino, E. Grossi, S. Buzzi and C. D'Elia, "Integrated Communication and RIS-Aided Track-Before-Detect Radar Sensing," in IEEE Open Journal of the Communications Society, vol. 6, pp. 4519-4532, 2025, doi: 10.1109/OJCOMS.2025.3572081.
30. M. W. Shabir, M. Di Renzo, A. Zappone and M. Debbah, "Electromagnetically Consistent Optimization Algorithms for the Global Design of RIS," in IEEE Wireless Communications Letters, vol. 14, no. 5, pp. 1286-1290, May 2025, doi: 10.1109/LWC.2025.3529778.
31. S. Wang, M. Di Renzo and M. Poulakis, "Multibeam Beamforming Design in RIS-aided SISO Communications Subject to Reradiation Masks – Optimization and Machine Learning Methods," 2024 19th International Symposium on Wireless Communication Systems (ISWCS), Rio de Janeiro, Brazil, 2024, pp. 1-6, doi: 10.1109/ISWCS61526.2024.10639119.
32. V. Popov, M. A. Odit, J.-B. Gros, V. Lenets, A. Kumagai, M. Fink, K. Enomoto, and G. Lerosey, "Experimental demonstration of a mmWave passive access point extender based on a binary reconfigurable intelligent surface," Frontiers in Communications and Networks, vol. 2, Oct. 2021, doi: https://doi.org/10.3389/frcmn.2021.733891.
33. J. -B. Gros, V. Popov, M. A. Odit, V. Lenets and G. Lerosey, "A Reconfigurable Intelligent Surface at mmWave Based on a Binary Phase Tunable Metasurface," in IEEE Open Journal of the Communications Society, vol. 2, pp. 1055-1064, 2021, doi: 10.1109/OJCOMS.2021.3076271.
34. J.-B. Gros, L. Santamaria, V. Popov, M. Odit, V. Lenets, X. Lleshi, A. Toubal, Y. Nasser, G. Lerosey, "Design of Reconfigurable Intelligent Surfaces at mmWave with Application to 5G/6G," in the Proc. of the 2023 17th European Conference on Antennas and Propagation (EuCAP), Florence, Italy, 2023, pp. 1-4, doi: 10.23919/EuCAP57121.2023.10133769.
35. V. Lenets, U. Popov, M. Odit, J. -B. Gros and G. Lerosey, "Wireless Re-Configurable Intelligent Surface for Sub 6 GHz 5G Frequency," 2024 18th European Conference on Antennas and Propagation (EuCAP), Glasgow, United Kingdom, 2024, pp. 1-5, doi: 10.23919/EuCAP60739.2024.10501313.
36. J. Przepiorowski, V. Lenets, L. Santamaria; M. A. Odit, Y. Nasser, M. J. Ammann, "Q/V-Band 1-Bit Reconfigurable

Metasurface for 6G Non-Terrestrial Network Applications," in Proc. of the 2024 54th European Microwave Conference (EuMC), Paris, France, 2024, pp. 393-396, doi: 10.23919/EuMC61614.2024.10732307.

37. B. Saglam, D. Gürgünoğlu and S. S. Kozat, "Deep Reinforcement Learning Based Joint Downlink Beamforming and RIS Configuration in RIS-Aided MU-MISO Systems Under Hardware Impairments and Imperfect CSI," in Proc. of the 2023 IEEE International Conference on Communications Workshops (ICC Workshops), Rome, Italy, 2023, pp. 66-72, doi: 10.1109/ICCWorkshops57953.2023.10283517.

38. D. Gürgünoğlu, E. Björnson and G. Fodor, "Impact of Pilot Contamination Between Operators With Interfering Reconfigurable Intelligent Surfaces," in the Proc. of the 2023 IEEE International Black Sea Conference on Communications and Networking (BlackSeaCom), Istanbul, Turkiye, 2023, pp. 27-32, doi: 10.1109/BlackSeaCom58138.2023.10299699.

39. S. Fodor, G. Fodor, D. Gürgünoğlu and M. Telek, "Optimizing Pilot Spacing in MU-MIMO Systems Operating Over Aging Channels," in IEEE Transactions on Communications, vol. 71, no. 6, pp. 3708-3720, June 2023, doi: 10.1109/TCOMM.2023.3261384.

40. D. Gürgünoğlu, E. Björnson and G. Fodor, "Combating Inter-Operator Pilot Contamination in Reconfigurable Intelligent Surfaces Assisted Multi-Operator Networks," in IEEE Transactions on Communications, vol. 72, no. 9, pp. 5884-5895, Sept. 2024, doi: 10.1109/TCOMM.2024.3390095.

41. D. Gürgünoğlu, E. Björnson and G. Fodor, "Joint Pilot-Based Localization and Channel Estimation in RIS-Aided Communication Systems," in IEEE Wireless Communications Letters, vol. 13, no. 11, pp. 3119-3123, Nov. 2024, doi: 10.1109/LWC.2024.3454370.

42. D. Gürgünoğlu, A. Kosasih, P. Ramezani, Ö. T. Demir, E. Björnson and G. Fodor, "Performance Analysis of a 2D-MUSIC Algorithm for Parametric Near-Field Channel Estimation," in IEEE Wireless Communications Letters, vol. 14, no. 5, pp. 1496-1500, May 2025, doi: 10.1109/LWC.2025.3547154.

43. A. Albanese, G. Encinas-Lago, V. Sciancalepore, X. Costa-Pérez, D.-T. Phan-Huy and S. Ros, "RIS-Aware Indoor Network Planning: The Rennes Railway Station Case," in Proc. of the ICC 2022 - IEEE International Conference on Communications, Seoul, Korea, Republic of, 2022, pp. 2028-2034, doi: 10.1109/ICC45855.2022.9838688.

44. G. Encinas-Lago, A. Albanese, V. Sciancalepore, M. Di Renzo and X. Costa-Pérez, "Unlocking Metasurface Practicality for B5G Networks: AI-assisted RIS Planning," in Proc. of the GLOBECOM 2023 - 2023 IEEE Global Communications Conference, Kuala Lumpur, Malaysia, 2023, pp. 6560-6566, doi: 10.1109/GLOBECOM54140.2023.10437882.

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