13 March 2026 – 9AM To 5:30PM

Joint Workshop

2nd Workshop on Physical Layer Security for Wireless Networks

Venue: Department of Mathematics, University of Coimbra, 3000-393 Coimbra, Portugal
Rooms: *Amphitheatrum Pedro Nunes*

Keynotes (9:00-10:30)	9:00-9:45	Interference Resilience in Satellite-Based Positioning	Elena Simona Lohan
	9:45-10:30	Opportunities and challenges for physical layer security in wireless networks	Stefano Tomasin
Coffee break	10:30 - 11:00		
Special session	11:00-12:30	Physical-layer security for next generation body area networks: the ETSI SmartBAN approach	Lorenzo Mucchi, Stefano Caputo and Giacomo Borghini
Lunch Break	12:30-14:00		
Technical Poster session	14:00-15:30	6G-PHYSEC & MiFuture (collocated)	
Coffee break	15:30-16:00		
Panel	16:00-17:30	"Standardizing the Future: Physical-Layer Security, Smart Environments, and Intelligent Mobility"	Ana Garcia Armada, Armando Nolasco Pinto, Pedro Inácio, Akshay Jain, Lorenzo Mucchi and Arsenia Chorti

6G-PHYSEC Poster titles:	
Annapurna Pradhan	**Enhancing Physical Layer Security of URLLC in Full-Duplex Cooperative NOMA and Future research directions**
Bac Trinh-Nguyen	**VAE-Augmented Online Learning for Robust AoA-Based Localization in Outdoor Environments**
Bharat Lal	**Privacy-Preserving ECG-Based Biometric Authentication Using Compressed Sensing**
Dave Singelee	**ZeroTouch: Reinforcing RSS for Secure Geofencing**
Linda Senigagliesi	**Security Analysis of RIS-Assisted Physical-Layer Authentication Over Multipath Channels**
Moritz Wiese	**Statistical evaluation of wiretap security**
Pin-Hsun Lin	**Design and implementation of a 2-1 oblivious transfer system**
Stefano Tomasin	**Physical Layer Authentication With Channel Knowledge Maps in Indoor Environments**
Vida Gholamian Sefiddarboni	**Joint Identification and Sensing over Wiretap Channels with Feedback**

MiFuture Poster titles:
(to be announced)

Keynotes Session (9:00-10:30)

E. S. Lohan is a professor in wireless positioning field at the Wireless Research Center at Tampere University (TAU) and the leader of signal processing for wireless positioning (TLTPOS) research group at TAU. She is a co-editor of the first book on Galileo satellite system (Springer "Galileo Positioning technology"), co-editor of a book on "Multi-technology positioning", and author or co-author in more than 300 international peer-reviewed publications. She coordinated the H2020 MSCA European Joint Doctorate A-WEAR (www.a-wear.eu) during 2019-2022. She is currently an Associated Editor for IEEE MAES magazine, IEEE ISJPIN journal, RIN Journal of Navigation, and IET Journal on Radar, Sonar, and Navigation. Her research interests are related to GNSS, indoor and 5G/6G-based positioning, tracking and navigation for intelligent and automated machines, RF fingerprinting and interference mitigation and management in wireless navigation receivers, SLAM-related research, and LEO-based navigation solutions.

Talk: Interference Resilience in Satellite-Based Positioning

Abstract: This presentation focuses on the main two threats in the Global Navigation Satellite Systems (GNSS), namely spoofing and jamming, and on management measures to combat those, from detection, localization and classification of interference types to mitigation stages. Both classical approaches relying on signal processing and more advanced approaches relying on AI/ML and cryptographic solutions are to be addressed. Modern GNSS systems face intentional jamming, spoofing, and interference, which directly target the physical layer.

Multiple reports emphasize that GNSS signals are exceptionally weak at the receiver and are therefore easily overpowered or mimicked. GNSS interference includes jamming (power denial) and spoofing (data deception), and these are the two physical layer threats that will be addressed in this presentation. GNSS interference can compromise many wireless systems relying on navigation nowadays, such as safety, logistics, timing and cellular infrastructures, thus the interference resilience in GNSS is a timely topic in the context of wireless networks. Unsolved challenges and future directions are also to be briefly discussed.

Stefano Tomasin received the Ph.D. degree from the University of Padova, Italy, in 2003. During his studies, he did internships with IBM Research (Switzerland) and Philips Research (Netherlands). He joined the University of Padova, where he has been Assistant Professor (2005-2015), Associate Professor (2016-2022), and Full Professor (since 2022). He was visiting faculty at Qualcomm, San Diego (CA) in 2004, the Polytechnic University in Brooklyn (NY) in 2007, and the Mathematical and Algorithmic Sciences Laboratory of Huawei in Paris (France) in 2015. His current research interests include physical layer security, security of global navigation satellite systems, signal processing for wireless communications, synchronization, and scheduling of communication resources. He has been a senior member of

IEEE since 2011 (member since 1999) and a member of EURASIP since 2011. He is or has been an Editor of the IEEE Transactions on Vehicular Technologies (2011-2016), of the IEEE Transactions on Signal Processing (2017-2020), of the EURASIP Journal of Wireless Communications and Networking (since 2011) and of the IEEE Transactions on Information Forensics and Security (since 2020). He also serves as a Deputy Editor-in-Chief of the IEEE Transactions on Information Forensics and Security since January 2023.

Talk: Opportunities and challenges for physical layer security in wireless networks

Abstract: As wireless networks grow, so does their vulnerability. Physical-layer security (PLS) offers a unique solution by utilizing the characteristics of the wireless channel itself for protection. Following ten years of development in encryption and authentication, it is time to assess the landscape. This presentation outlines the opportunities and hurdles within PLS, arguing that these mechanisms must be adopted in future communication standards to ensure early-level protection at the network's lowest layer..

The Standardization Panel Session on 13 March 2026 (16:00–17:30)

"Standardizing the Future: Physical-Layer Security, Smart Environments, and Intelligent Mobility"

Arsenia Chorti is a Professor at the École Nationale Supérieure de l' Électronique et de ses Applications (ENSEA) at the ETIS Lab UMR 8051 and a Visiting Scholar at Princeton University. Her research spans the areas of wireless communications and wireless systems security for 5G and 6G, with a particular focus on physical layer security. Current research topics include: context aware security, multi-factor authentication protocols, 5G / 6G and IoT, anomaly detection, machine learning for communications, new multiple access techniques and scheduling. She is a Senior IEEE Member, has served as Associate Editor in Chief of the IEEE ComSoc Best Readings, of the IEEE INGR on Security and Chair of the IEEE Focus Group on Physical Layer Security, while she has also served in the IEEE P1940 Standardization Workgroup on Standard profiles for ISO 8583 authentication services and has served as a member of the IEEE Teaching Awards Committee. She is currently a Member of various ITU Working Groups and has participated in the reduction of the ITU report M.2516-0 on Future technology trends of Terrestrial International Mobile Telecommunications Systems Towards 2030 and Beyond (sections on trustworthiness).

Pedro Ricardo Morais Inácio is an associate professor in the Department of Computer Science at the University of Beira Interior (UBI), where he lectures on information assurance and cybersecurity across B.Sc., M.Sc. and Ph.D. programmes. He currently serves as ViceRector for Digital Strategy, Information and Human Resources Management, as well as Data Protection Officer of UBI. He holds a B.Sc. in Mathematics/Computer Science (2005) and a Ph.D. in Computer Science and Engineering (2009), the latter conducted in collaboration with Nokia Siemens Networks Portugal. An IEEE Senior Member, ACM Professional Member and senior researcher at Instituto de Telecomunicações, his work focuses on information assurance and security, simulation, and network traffic monitoring and analysis. He has authored over 90 publications and is presently serving as a Senior Editor for IEEE Access.

Armando Nolasco Pinto is a Full Professor at the University of Aveiro and Head of the Quantum Communications research group at the Instituto de Telecomunicações. He has authored and presented more than 250 publications in international journals and conferences, and his work has received 25 scientific awards. He holds four international patents and has participated in 57 research projects, serving as global coordinator for 24. He currently coordinates European Union and NATO projects in quantum communication technologies, contributed to the deployment of the first segment of the Portuguese quantum communication network, and serves as President of the Portuguese Technical Committee for Standardization CTE JTC 22 – Quantum Technologies and Coordinator of NATO IST-218 on Multi-Domain Quantum Key Distribution (QKD) for Military Usage.

Prof. Ana García Armada is a Professor at Universidad Carlos III of Madrid, Spain, where she is leading the Communications Research Group. She has been a visiting scholar at Stanford University, Bell Labs and University of Southampton. She is an IEEE Fellow. She has published more than 300 papers in international journals and conference proceedings and she holds seven granted patents. She is serving on the editorial board of IEEE Open Journal of the Communications Society (Associate Editor in Chief since 2024) and ITU Journal on Future and Evolving Technologies. She was awarded the third place Bell Labs Prize 2014 for shaping the future of information and communications technology. She received the IEEE ComSoc/KICS Exemplary Global Service Award in 2022.

Dr. Akshay Jain is a Radio Research Scientist at Nokia Bell Labs, specializing in defense communications, artificial intelligence, and sustainability for wireless networks. He holds a PhD in Wireless Communication as a Marie Skłodowska-Curie Fellow from Universitat Politecnica de Catalunya in Spain. His research focuses on 5G NR and 6G resiliency mechanisms across RAN, Core and management and orchestration plane, AI/ML methods with next-generation wireless systems, and sustainable 6G system design methodologies.