



Microwaves and mm-waves for the Design of Advanced Wireless Links: Communication, Sensing and Power Transfer

Department of Information Engineering, University of Pisa
Pisa (Italy) – June 16-21, 2025



The 2025 edition of the Summer School will be held in June, so attendees will have the chance to see the Luminara 2025, on the evening of June 16th. About 70,000 candles being lit and placed all over buildings and even floating down the Arno River, with spectacular fireworks at the end of the evening!

University of Pisa - 2025 Summer School (II Edition) on
“Microwaves and mm-waves for the Design of Advanced Wireless Links: Communication, Sensing and Power Transfer”

	Monday June 16	Tuesday June 17	Wednesday June 18	Thursday June 19	Friday June 20	Saturday June 21
9:00 11:00	Introduction to the Summer School Paolo Nepa Andrea Michel University of Pisa	<i>Event partially funded by the IEEE Student Branch at the University of Pisa (through IEEE Italy Section)</i> Lectures at Villa Griffone (Pontecchio Marconi, Bologna)	Guided wave modeling in coaxial cables, printed lines and waveguides Alice Buffi University of Pisa	The antenna as a system component Paolo Nepa University of Pisa	How antenna arrays advance wireless system performance Paolo Nepa, University of Pisa	Wireless communication systems and technologies: from the basics to 5G standards Giacomo Bacci University of Pisa
11:00 13:00	Hybrid communications based on high frequencies Marco Brancati Telespazio SpA	<i>Bus leaving from Pisa at 8:30 AM</i> Guided tour of Marconi Museum Buffet Lunch “all together”	Microwave device modeling Simone Genovesi University of Pisa	Fundamentals of transceivers for communication systems Francesco Pieri University of Pisa	Fundamentals of satellite communications: a hands-on approach Filippo Giannetti University of Pisa	EMC at system level applied to real satellite scenarios Giovanni Galgani MERMEC Engineering
LUNCH BREAK						
14:00 16:00	Electromagnetic wave propagation: a ray-optical picture Giuliano Manara University of Pisa	Advanced radiating architectures exploiting frequency diversity Tommaso Tiberi University of Bologna Over-the-air EM signal processing: fundamentals and recent results	Manipulating microwaves and mm-waves with periodic structures Filippo Costa University of Pisa	Advanced antenna systems for next-generation radio telescopes Pietro Bolli and Renzo Nesti Italian National Institute for Astrophysics (INAF)	5G mmWave: Industry Perspectives on Design and Deployment Danilo De Donno Huawei Technologies	Project Work Assignment* & Student feedback collection Paolo Nepa Andrea Michel University of Pisa
16:00 18:00	Wave propagation in complex environments and multipath models Pierpaolo Usai University of Pisa	 Davide Dardari University of Bologna Devices and architectures for battery-less RF systems Diego Masotti University of Bologna <i>Bus leaving at 17:45 (expected to arrive in Pisa by 20:00)</i>	Automotive mm-wave radar sensors Sergio Saponara University of Pisa	Analysis and design of passive devices: modeling and numerical simulation Andrea Michel University of Pisa	Wireless Transport for 5G backhaul ... and more Francesca Rosati Nokia Italia	 * Attendees who need to leave before lunch can discuss with the SS coordinators about their project work assignment during the morning session break