SUMMER SCHOOL

on

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

July 8-13, 2024
Polo della memoria San Rossore, via Risorgimento, Pisa, Italy

https://www.dii.unipi.it/microwaves-and-mm-waves-design-advanced-wireless-links-communication-sensing-and-power-transfer

Preliminary program (*last update: Dec. 2023*)

Day	***Morning class***	***Afternoon class***
Monday **July 8, 2024**	**Introduction to the Summer School** Proff. Paolo Nepa and Simone *Genovesi (University of Pisa, Summer School coordinators)*	**Wave propagation in complex environments and multipath models** *Dr. Pierpaolo Usai (University of Pisa)*
	Electromagnetic wave propagation: a ray-optical picture *Prof. Giuliano Manara (University of Pisa)*	**Guided wave modeling in coaxial cables, printed lines and waveguides** *Prof. Alice Buffi (University of Pisa)*
Tuesday **July 9, 2024**	**Microwave device modeling** *Prof. Simone Genovesi (University of Pisa)*	**Analysis and design of passive devices: modeling and numerical simulation** *Dr. Andrea Michel (University of Pisa)*
	Manipulating microwaves and mm-waves with passive devices *Prof. Filippo Costa (University of Pisa)*	**Microwave Lab measurements** *Dr. Andrea Motroni (University of Pisa)*
Wednesday **July 10, 2024**	**How antennas advance wireless system performance**	**Radio design criteria in the early XX century: learning from the Father of wireless**

	Prof. Paolo Nepa (University of Pisa)	*Prof. Filippo Giannetti (University of Pisa)*
	Fundamentals of satellite communications: a hands-on approach *Prof. Filippo Giannetti (University of Pisa)*	**Fundamentals of transceivers for communication systems** *Dr. Francesco Pieri (University of PIsa)*
Thursday **July 11, 2024** Off-campus lesson at Villa Griffone, Pontecchio Marconi, Bologna	*Transfer from Pisa to Pontecchio Marconi (by private bus)* **Guided tour of the Marconi Museum** (https://www.fgm.it/en/home.html)	**Devices and architectures for battery-less RF systems** *Prof. Alessandra Costanzo (University of Bologna)*
		Communication and sensing in smart radio environments enabled by reconfigurable surfaces *Prof. Davide Dardari (University of Bologna)* *Return to Pisa (by private bus)*
Friday **July 12, 2024**	**Wireless communication systems and technologies: from the basics to 5G standards** *Dr. Giacomo Bacci (University of PIsa)*	**Hybrid communications based on high frequencies** *Dr. Marco Brancati, Head of Research, Digital & Innovation, Telespazio SpA, Rome, Italy*
	Automotive mm-wave radar sensors *Prof. Sergio Saponara (University of PIsa)*	**Antenna design for mm-wave communication systems: an industrial viewpoint** *Dr. Roberto Flamini, Huawei Italia, Milan, Italy*
Saturday **July 13, 2024**	**Multibeam antennas** *Dr. Giovanni Toso, Antenna and Submillimeter Waves Section, European Space Agency (ESA), European Space Research and Technology Centre (ESTEC), The Netherlands*	**Project works: discussion and assignment** **Fill-out of a survey on the Summer School contents and organization** *Proff. Paolo Nepa and Simone Genovesi (University of Pisa, Summer School coordinators)*
	Recent developments on satellite communication systems *Dr. Sara Mugnaini, Manager, Advanced Engineering & Technology, Eutelsat OneWeb, London, United Kingdom*	