UNIVERSITÀ DEGLI STUDI DI NAPOLI FEDERICO II

PHD PROGRAM IN
INFORMATION TECHNOLOGY AND ELECTRICAL ENGINEERING

PHD PROGRAM IN
INFORMATION AND COMMUNICATION TECHNOLOGY FOR HEALTH

Seminar announcement

Thursday, October 16, 2025 - Time: 2.30 – 4.30 pm
Seminar Room, first floor, building 3, DIETI - Via Claudio, 21 - NAPOLI

Prof. Darko Suka

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EMF Measurements and Human Exposure in the Age of 5G

Abstract: Telecommunication technologies, especially cellular networks, have become integral to daily life, leading to increased human exposure to electromagnetic fields (EMFs). As 5G technology advances, this exposure is expected to rise. Measuring human exposure to EMFs is crucial, but challenges remain due to the variability in traffic patterns of 4G and 5G systems. There is a need for refined measurement methods and careful consideration of measurement uncertainty to ensure accurate exposure assessments. This seminar will discuss the history and operation of mobile networks (2G, 3G, 4G), the importance of measuring control channels for worst-case exposure scenarios, and procedures for measuring electric field strength in 5G systems. Methods for extrapolating measured field strength to account for system load will also be covered. Topics will include sources of EMFs, regulatory standards, biological effects, signal extrapolation techniques, and current 5G measurement methods.

Lecturer short bio: *Darko Šuka completed his B.Sc., M.Sc., and Ph.D. in Electrical Engineering at the University of East Sarajevo (UES) in 2007, 2012, and 2019, respectively. He currently serves as an Associate Professor at UES, where he teaches courses in Electromagnetics I and Electromagnetics II. His research interests include electromagnetic field (EMF) measurements, exposure assessments, dosimetry, and wave propagation, with a particular emphasis on 4G and 5G technologies. He is the author of one book and has published over 30 papers in national and international journals, as well as conference proceedings.*

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