

Open 3-year PhD Position

Multi-dimensional characterization of the vehicular wireless radio channel with imaging: application to modeling and localization

International PhD Advising team:

- Associate Prof. Davy GAILLOT, *University of Lille – Institute of Electronics, Microelectronics and Nanotechnology (IEMN)*
- Prof. Jose-Maria GARCIA MOLINA-PARDO, *Polytechnic University of Cartagena (UPCT) – Spain, Distinguished Prof. of the University of Lille*

In this PhD thesis, which is part of the Vehicular Communications and Transport flagship of IEMN CNRS lab (www.iemn.fr), it is proposed to develop a complete theoretical and experimental framework on joint imaging and channel characterization from time-varying MIMO scattering arrays, with the aim of prospecting on channel modeling and localization applications.

To this end, we are looking for a talented and motivated profile with skills emphasizing on multi antenna techniques and signal processing using Matlab or equivalent computational languages. In addition, high-end measurement sounding equipment will be used within the framework of the PhD such that real-data analysis experience is strongly appreciated but not required.

The PhD candidate will start in early October 2023 work at IEMN in the Telecommunications, Interference, and Electromagnetic Compatibility research group located in Lille (Northern France). The group focuses on experimental and theoretical wireless telecommunications. The junior researcher will also be co-advised by Prof. Molina Garcia-Pardo of Universidad Politécnica de Cartagena in Spain and will be hosted there for few months. Prof. Garcia Molina-Pardo is an internationally recognized expert for his research activities in the characterization of the radio propagation channel in millimeter frequencies through deterministic modeling and measurement. This collaboration has existed for more than 10 years with numerous publications, PhD co-supervision and international projects. The collaboration would focus on the validation of the imaging algorithm by measurements and indoor simulations at millimeter and THz frequencies.

Contact: Please send a detailed CV, motivation letter, and full transcripts at davy.gaillot@univ-lille.fr

Deadline: End of April

PhD granting period: October 2023 – October 2026