

**University of Pavia**

**Ph.D. School in Electronics, Computer Science and Electrical Engineering  
Ph.D. School in Microelectronics**

## **SEMINAR ANNOUNCEMENT**

### **Introduction and Motivation from 6G ISAC**

**Prof. Henk Wymeersch**

*Chalmers University of Technology (Sweden)*

**Wed 7<sup>th</sup> May, 2025, 11:00 am – B4 Room**

Dept. of Electrical, Computer and Biomedical Eng., University of Pavia – Via Ferrata, 5 – Pavia

**Abstract:** The upcoming sixth-generation (6G) wireless networks aim to support not only ultra-reliable and high-speed communication but also pervasive environmental awareness through Integrated Sensing and Communication (ISAC). This paradigm envisions the co-design and co-optimization of sensing and communication functionalities within the same wireless infrastructure, enabling applications such as autonomous mobility, digital twin systems, and smart environments. In this seminar, the foundational concepts and motivations driving ISAC in 6G are introduced, with particular emphasis on the emerging challenges in signal processing. A motivating example will be presented in the mmWave band, where wide bandwidth and directional transmission present both unique opportunities and design complexities for ISAC systems.

**Bio:** Henk Wymeersch obtained the Ph.D. degree in Electrical Engineering/Applied Sciences in 2005 from Ghent University, Belgium. He is currently a Professor of Communication Systems with the Department of Electrical Engineering at Chalmers University of Technology, Sweden. He is also a Distinguished Research Associate with Eindhoven University of Technology. Prior to joining Chalmers, he was a postdoctoral researcher from 2005 until 2009 with the Laboratory for Information and Decision Systems at the Massachusetts Institute of Technology. Prof. Wymeersch served as Associate Editor for IEEE Communication Letters (2009-2013), IEEE Transactions on Wireless Communications (since 2013), and IEEE Transactions on Communications (2016-2018) and is currently Senior Member of the IEEE Signal Processing Magazine Editorial Board. During 2019-2021, he was an IEEE Distinguished Lecturer with the Vehicular Technology Society. interests include the convergence of communication and sensing, in a 5G and Beyond 5G context.

#### **Organizer**

Prof. Pietro Savazzi

#### **Ph.D. Coordinator**

Prof. Ilaria Cristiani

Prof. Piero Malcovati