

Extremely Large Antenna Arrays (ELAA) For 6G Communications & Sensing

Extremely Large Antenna Arrays (ELAA) are a key technology for 6G networks, enabling the use of hundreds or thousands of antennas at base stations to significantly improve performance. With higher antenna counts and higher operating frequencies, 6G systems will experience a much larger near-field region, making near-field communication an important new research area.

This shift challenges traditional far-field-based communication models but also creates new opportunities, such as stronger targeted signals and improved spectrum efficiency. The talk introduces the fundamentals of near-field communications, discusses key challenges and opportunities, and presents recent research on channel estimation and mobile positioning using ELAA with blind and semi-blind techniques.



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Prof. Karim Abed-Meraim

Prof. Karim Abed-Meraim is a Fellow of IEEE and a member of the Institut Universitaire de France (IUF), with expertise in signal processing and communications. He received his advanced degrees from École Polytechnique, ENST Paris, and Paris XI University, and earned his Ph.D. in 1995. He previously held a research position at the University of Melbourne and is currently a Full Professor at the University of Orléans (PRISME Laboratory). Prof. Abed-Meraim is actively involved in IEEE and EURASIP, serving on several technical committees and as a Senior Area Editor for IEEE Transactions on Signal Processing.