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

SEMINARS

RF Interference analyses and mitigation on small spacecrafts

AND

From Concept to Cosmos
Design and testing challenges for space-ready antennas

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Abstract: The era of affordable access to space is driven by the emerging New Space economy within the realms of Space Logistics, In-orbit servicing, and Earth Observation services. The significant participation of small enterprises encourages further innovation and new commercial opportunities for exploring and utilizing space-based resources and infrastructure while reducing costs and volumes for both launchers and satellites. This presents two major challenges for radio-frequency engineers: first, to ensure that powerful on-board RF sources and sensitive receivers can coexist in a smaller space, maintaining interference-free conditions on the spacecraft to achieve all primary mission goals; and second, to develop more compact solutions without compromising reliability and performance during flight, alongside conducting thorough qualification campaigns to verify the item's compatibility with the space environment. The two presentations will showcase the work carried out for the NOX mission under the IRIDE Program, one of Europe's largest space programme for Earth observation services consisting of a constellation of satellites.

Bio: Andrea Giannini is a passionate space enthusiast with over nine years of experience in the space industry as a radio-frequency and telecommunications engineer. He earned a Master of Science in Electronic Engineering in 2011 and a Ph.D. in Electronic, Electric, and Information Theory Engineering in 2014, with primary research focus on parabolic antennas for deep space applications. His major expertise lies in electromagnetic theory, particularly in radio propagation studies and radio-frequency system engineering, where he specializes in the architectural design of advanced space communication systems.

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