Prof. Dr. -Ing Felix Antreich
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"GNSS-Based Ionospheric Scintillation Monitoring and Characterization"

Tuesday, December 8, 2026, 10:00 am-12:00noon

Abstract

This talk introduces the propagation effects of ionospheric scintillation on GNSS signals and discusses how they are modeled. It then gives a detailed overview of the scintillation monitoring and mitigation methods developed in recent years at the Aeronautics Institute of Technology (ITA), and compares them with the most relevant approaches in the literature. The characterization of scintillation events using machine-learning models is also presented, with particular attention to ITA's latest developments in this area. The talk concludes with an outlook on future trends and research directions.

Short Biography

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Felix Antreich (Senior Member, IEEE) received the Diploma degree in Electrical Engineering and the Ph.D. degree from the Technical University of Munich (TUM), Munich, Germany, in 2003 and 2011, respectively. From 2003 to 2016, he was an Associate Researcher at the Department of Navigation, Institute of Communications and Navigation of the German Aerospace Center (DLR), Wessling, Germany. From 2016 to 2018, he was a Visiting Professor at the Department of Teleinformatics Engineering (DETI), Federal University of Ceará (UFC), Fortaleza, Brazil. Since July 2018, he has been a Professor with the Department of Telecommunications, Division of Electronics Engineering, Aeronautics Institute of Technology (ITA), São José dos Campos, Brazil. His research interests include sensor array signal processing for global navigation satellite systems (GNSS) and wireless communications, estimation theory, wireless sensor networks, positioning, localization, and signal design for synchronization.