

Symposium Speaker

Full Name	Hugo Martin
Affiliation	University of Alcala
Presentation Title	Chirped-Pulse phase-sensitive OTDR

Biography

Hugo F. Martins received his Ph.D. degree in Physics under jointly-awarded PhD program in the University of Porto, Porto, Portugal and the University of Alcala, Madrid, Spain, in 2014. The topic of the doctoral dissertation was the use of Raman effect to assist distributed and remote fiber sensing.

His research career has been mainly focused on distributed optical fiber sensing, mainly the use of phase-sensitive optical time domain reflectometry for distributed vibration/intrusions and temperature/strain detection along large structures/perimeters, with recent focus on the use of Chirped-Pulse phase-sensitive OTDR. Dr. Hugo F. Martins is currently part of the research staff of the University of Alcalá (Madrid, Spain).

Dr. Hugo F. Martins is an author or coauthor of >50 papers in international refereed journals and international conference contributions, with >500 citations, co-author in 3 patents and participated in >10 R&D projects (both in research and industry). Dr. Hugo F. Martins has received several important scientific recognitions, including the award of best PhD Thesis in Optics and Photonics of 2014 in Portugal by the “Sociedade Portuguesa de Óptica e Fotónica” (Portuguese Society of Optics and Photonics).

200 words abstract

We will review the latest developments in phase-sensitive OTDR technology, with emphasis on the recently proposed chirped-pulse phase-sensitive OTDR (CP- Φ OTDR).

The fundamental limits of the technique, in terms of range, sensitivity, resolution and SNR will be discussed, as well as advantages and trade-offs with regard to the traditional phase-sensitive OTDR employing phase-detection schemes.

In addition, we will review several applications of distributed acoustic sensing systems, particularly in the detection of third party intrusions along very large infrastructures (e.g pipelines, railways), and new applications made possible by CP- Φ OTDR.