
Coherent Optical Science Seminar on Information Optics

Date: Wednesday, 26 August 2026

Time: 15:00-16:00

Place: Room #803, East 6 Building, UEC

Speaker: Neji Youssef

Professor, Higher school of communications of Tunis (Sup'Com),
University of Carthage

Title: Free space optical communications using reconfigurable optical
intelligent reflectors

Abstract:

Free space optical (FSO) communication systems have attracted a significant research interest over the last decades for their numerous advantages. The objective of this talk is to look at the performance of reflector-based FSO links through the analysis of random outage. A generic expression is first derived for the autocorrelation function of the misalignment-induced fading in inter-satellite communication scenarios involving an arbitrary number of satellites. The asymptotic analysis of the distribution of outage duration of FSO links in the underlying scenarios is then provided. Furthermore, the study is extended to the case of reflector-based communications for which approximate solutions are determined for the statistics of outage events. Preliminary simulation results are finally shown to confirm the validity of the analysis.

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