



**IEEE Photonics Society (Formerly IEEE Lasers and Electro-Optics Society)
French Chapter/Chapitre Français
Seminar announcement/Annonce de séminaire**

Title/Titre: **Spectrum Scarcity and Free Space Optical Communications**

Speaker/Orateur: **Professor Mohamed-Slim Alouini**
Computer, Electrical, and Mathematical Science and Engineering (CEMSE) Division
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Thuwal, Makkah Province, Saudi Arabia.

Date : Wednesday, October 15, 2014 at 4 pm/mercredi 15 octobre 2014 à 16h.

Location/Lieu: TELECOM ParisTech
Ecole Nationale Supérieure des Télécommunications, CNRS/LTCI
46 rue Barrault, 75634 Paris Cedex 13
Room/Pièce : A310

Getting there: <http://www.telecom-paristech.fr/eng/practical-information/getting-there.html>
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Abstract/Résumé:

Rapid increase in the use of wireless services over the last two decades has led to the problem of the radio-frequency (RF) spectrum exhaustion. More specifically, due to this RF spectrum scarcity, additional RF bandwidth allocation, as utilized in the recent past, is not anymore a viable solution to fulfill the demand for more wireless applications and higher data rates. Among the many proposed solutions, optical wireless communication or free-space optical (FSO) systems have gained an increasing interest due to their advantages including higher bandwidth and higher capacity compared to the traditional RF communication systems. This promising technology offers full-duplex Gigabit throughput in certain applications and environment while benefiting from a huge license-free spectrum, immunity to interference, and high security. These features of FSO communication systems potentially enable solving the issues that the RF communication systems face due to the expensive and scarce RF spectrum. The first part of the talk will give an overview of FSO communication systems by offering examples of advantages and application areas of this emerging technology. In the second part of talk, we will focus on some recent results and on-going research directions in the accurate characterization of the performance of FSO systems in the presence of inevitable impairments due to atmospheric turbulence and misalignment between transmitter and receiver.

Keywords/Mots-clefs: Optical wireless communication, free space optical communication, atmospheric turbulence, pointing error, Gamma-Gamma fading, Lognormal fading, and capacity and error rate computation.

Biography/Biographie

Mohamed-Slim Alouini (S'94, M'98, SM'03, F'09) was born in Tunis, Tunisia. He received the Ph.D. degree in Electrical Engineering from the California Institute of Technology (Caltech), Pasadena, CA, USA, in 1998. He served as a faculty member in the University of Minnesota, Minneapolis, MN, USA, then in the Texas A&M University at Qatar, Education City, Doha, Qatar before joining King Abdullah University of Science and Technology (KAUST), Thuwal, Makkah Province, Saudi Arabia as a Professor of Electrical Engineering in 2009. His current research interests include the modeling, design, and performance analysis of wireless communication systems.

For more information, please feel free to contact/Pour tout renseignement complémentaire, merci de contacter:

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