

Department of Electrical and Computer Engineering

Title: “Collimated light propagation: The next frontier in underwater wireless communication”

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Abstract: Traditional underwater communication systems rely on acoustic modems due their reliability and long range. However their limited data rates, lead to the exploration of alternative techniques. In this talk, we briefly go over the potential offered by underwater wireless optical communication systems. We then summarizes some of the underwater channel challenges going from severe absorption and scattering that need to be surpassed before such kind of systems can be deployed in practice. We finally present some of the on-going research directions in the area of underwater wireless optical communication systems in order to (i) better characterize and model the underwater optical channel and (ii) design, develop, and test experimentally new suitable modulation and coding techniques suitable for this environment.

Biography: Mohamed-Slim Alouini 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.