Special Issue

Underwater Optical Communications Channel Models: Trends and Challenges

Message from the Guest Editors

Underwater wireless communications refer to data transmission in unguided water environment through wireless carriers, i.e., radio-frequency (RF) wave, acoustic wave, and optical wave. In comparison to RF and acoustic counterparts, underwater optical wireless communication (UOWC) can provide a much higher transmission bandwidth and much higher data rate. However, UOWC systems also suffer from severe absorption and scattering introduced by underwater channels. Various effects of underwater turbulence on the propagating optical wave, thus on the receive optical signal are studied. These effects substantially degrade the performance of UOWC links operating in underwater medium. In addition to single channel UOWC systems, multi-channel technologies, such as MIMO (Multiple Input Multiple Output) and OAM (Orbital Angular Momentum), are recommended to overcome turbuelnce-induced fading or enlarge the capacity with channel multiplexing. This Special Issue aims at presenting an overview of UOWC channel modeling, recent progress, and furture trends. We are excited to invite researchers to submit their contributions to this Spectial Issue.

Guest Editors

Dr. Xiang Yi

School of Telecommunication Engineering, Xidian University, Xi'an 710071, China

Dr. Yuhan Dong

Shenzhen International Graduate School, Tsinghua University, Shenzhen 518055, China

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
photonics@mdpi.com

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Prof. Dr. Nelson Tansu
School of Electrical and Electronic Engineering (EEE), The University of Adelaide, Adelaide, SA 5005, Australia

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