Special Issue

Nonlinearity Compensation for Optical Communication Systems

Message from the Guest Editors

The impact of Kerr nonlinearity on optical communication systems is widely recognized as one of the key challenges in the quest for higher transmission rates. Nonlinearity compensation techniques have, thus, received a significant attention over the past few years both in the academic environment and within industry. As a result, several impressive results have been reported in the literature: all-optical and digital approaches spanning from optical phase conjugation and twin-wave transmission on one side, and digital backpropagation and Volterra methods on the other have shown remarkable progress. Alternative approaches based on nonlinearity-tolerant transmission schemes have also been proposed. Finally, a few preliminary demonstrations have paved the way for combined all-optical and digital schemes in order to leverage the strengths of each domain and mutually mitigate their respective weaknesses. This Special Issue focuses on the latest research findings in the area of nonlinearity compensation, with a particular attention to proof of concepts for novel schemes and innovative system demonstrations.

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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