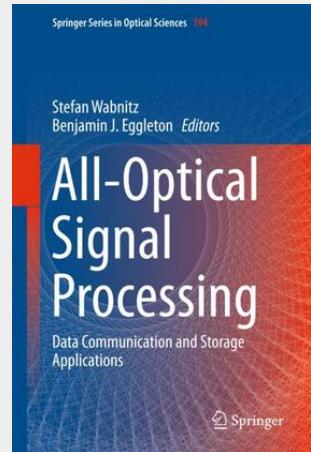


All-Optical Signal Processing

Data Communication and Storage Applications

This book provides a comprehensive review of the state-of-the art of optical signal processing technologies and devices. It presents breakthrough solutions for enabling a pervasive use of optics in data communication and signal storage applications. It presents optical signal processing as solution to overcome the capacity crunch in communication networks. The book content ranges from the development of innovative materials and devices, such as graphene and slow light structures, to the use of nonlinear optics for secure quantum information processing and overcoming the classical Shannon limit on channel capacity and microwave signal processing. Although it holds the promise for a substantial speed improvement, today's communication infrastructure optics remains largely confined to the signal transport layer, as it lags behind electronics as far as signal processing is concerned. This situation will change in the near future as the tremendous growth of data traffic requires energy efficient and fully transparent all-optical networks. The book is written by leaders in the field.



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