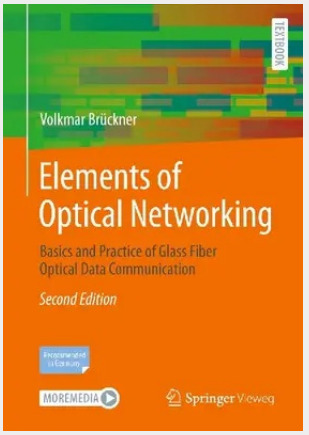
Brückner

# Elements of Optical Networking

Basics and Practice of Glass Fiber Optical Data Communication

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This compact textbook introduces the most important elements of optical networks and uses them to solve practical problems by engineering solutions. The main topics are glass fibers, optical transmitters and receivers, modulation of laser light for high bit rates, elements of passive (couplers, distributors) and active (switches, optical amplifiers) networks, influence of nonlinearities in optical transmission as well as integration into the global network. Examples describe advantages and limits of optical data transfer in networks. In addition to each topic, practical exercises and questions are given. Difficult mathematical relationships and formulas are explained and simulated using a mathematical program.

This textbook has been recommended and developed for university courses in Germany, Austria and Switzerland.

**The content**

Photonics, wave-guide structures, glass fibers – Parameters and properties of optical fibers: attenuation and dispersion, transmission bandwidth – Optical transmitters, modulation of transmitters – Optical amplifiers – Optical receivers – Active and passive optical couplers and switches – Nonlinear processes in glass fibers, solitons – Active and passive optical networks

**Target Groups**

- Students of Bachelor and Master courses at Universities of Applied Sciences
- Students of Bachelor courses at Technical Universities
- Practitioners in the fields of telecommunications and communication technology
- Life-long learners

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