

Long-distance DWDM transmission systems: transition to 40G and beyond

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Benefits and learning objectives

- Identify key components and parameters of fiber-optic transmission systems
- Describe major types and features of optical transmission fibers
- Explain chromatic dispersion, polarization-mode dispersion and nonlinear propagation effects
- Discuss different types of optical amplifiers and their key properties
- Identify and compare properties of different modulation formats.
- Describe building blocks and properties of transmitters and receivers
- Explain dispersion and nonlinearity management, dispersion maps, classical soliton and dispersion-managed soliton transmission systems
- Explain system optimization, design trade-offs and span rules calculation

Intended audience

This course is intended for individuals seeking knowledge of how the data is transmitted in long-distance fiber optic systems. This includes new entrants into the fiber optics field with an engineering background, optical engineers, people in telecom industry and R&D management.

Instructor Biography



Dr. Mamyshev has more than twenty five years of experience in nonlinear fiber optics and high-speed optical data transmission. He worked for more than ten years in Russian Academy of Sciences on fiber nonlinearities and other fundamental aspects of light transmission in optical fibers. He received his Ph.D. in Physics and Mathematics in 1985. From 1993 till 2000, Dr. Mamyshev was with AT&T and Lucent Bell Laboratories working on long distance transmission systems. Since 2000, he is with Mintera Corporation working on next-generation high-speed fiber optic systems. He is Vice-president, CTO and co-founder of the company.