

Polarization Compensation Systems and Devices: Characterization, Benchmarking, and Full Solutions

Overview

Our services include developing and characterizing polarization compensation systems and their components for various link architectures, wavelengths, and applications. We provide testing, and benchmarking polarization compensation systems utilizing polarization-entangled photons, and offering polarization compensation solutions for various application domains, including amongst others free space and fiber optic transmission of light.

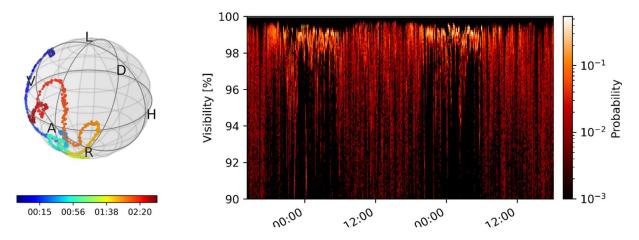


Fig. 1. Visualization of the achieved polarization contrasts from a two-day characterization measurement of a slow, fiber-optic polarization compensation system, revealing insufficient compensation speed for high-quality QKD during strong polarization perturbation during daytime transmission on a 150km deployed telecom fiber.

Field of Application and applied technology

Specifications

- Characterization of free-space and fiber-optic polarization manipulation devices for different wavelength ranges with regards to speed, precision, hysteresis, linearity, and range
- Typical wavelength ranges: telecom C-band and O-band, 780-650nm, others possible
- Testing and benchmarking of polarization compensation systems on emulated links and physical optic fiber infrastructure for free-space and fiber-optic light transmission
- Development of fast and reliable polarization compensation solutions based on
 - Polarization entanglement (non-local compensation for interruption-free QKD)
 - Polarization reference (time and wavelength multiplexing)