

Short Course Description

Course Title

PIC Technology for Advanced Modulation Formats

Course Description

We will cover photonic integrated circuits (PICs) for optical communications, with a focus on PICs that generate or receive optical signals with advanced modulation formats. An example of an advanced modulation format is polarization-division multiplexed quadrature phase-shift keying.

Benefits and Learning Objectives

1. Be able to identify the strengths and weaknesses of PICs for optical communications applications.
2. Be able to explain advanced modulation formats.
3. Be able to get started in designing your own PICs.
4. Be able to project with some confidence where PIC technology is headed in the next 5 years.
5. Be able to explain many of the components in PICs.

Intended Audience

The intended audience is anyone interested in photonic integrated circuits with some basic knowledge of optical communications.

Instructor Biography

Christopher R. Doerr earned a B.S. in aeronautical engineering and a B.S., M.S., and Ph.D. in electrical engineering from the Massachusetts Institute of Technology (MIT). He attended MIT on an Air Force scholarship and earned pilot wings in 1991. Since coming to Bell Labs in 1995, Doerr's research has focused on integrated devices for optical communication. He was promoted to Distinguished Member of Technical Staff in 2000, received the OSA Engineering Excellence Award in 2002, and became an IEEE Fellow in 2006 and an OSA Fellow in 2009. Doerr was Editor-in-Chief of IEEE *Photonics Technology Letters* from 2007-2009.