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## Tutorial

### Photonics Modeling of Components, Systems and Networks

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#### Abstract

This tutorial presents methods for accurately modeling aspects of modern optical transmission systems with channel data rates of up to 100Gb/s. It will provide simulation guidelines and application demonstrations for physical modeling of photonic technologies and components, behavioral modeling of components in systems, assessment of limitations of electronic driver and receiver circuitries, system performance evaluation and optimization, parametric modeling of link characteristics, and tracking dynamic effects in networks. Simulation examples that are discussed here are carried out using VPIphotonics' solutions for Photonic Design Automation.



#### André Richter

André Richter completed his Masters degree in 1995 at Georgia Institute of Technology, USA. In 1998 he worked as visiting research fellow at the University of Maryland Baltimore County, USA. In 2002 he received a Doctorate degree from Technical University of Berlin, Germany, for a novel work in modeling long haul fiber optical communications.

Since Dr Richter joined the VPIphotonics team in 1997, he contributed to the development and management of various modeling tools for optical components, subsystems and systems. He invoked an industry training and consulting program in Photonic Design Automation serving over 900 attendees. Dr Richter authored or co-authored more than 35 publications on different topics of modeling and designing optical communication systems. Dr Richter works currently as Director, Product Management for VPIsystems' division VPIphotonics, which specializes on Optical Engineering Solutions. He is senior member of IEEE, and member of VDE and OSA.