



MODELLING AND DESIGN OF INTEGRATED OPTOELECTRONIC DEVICES

Paolo Pintus
Università di Cagliari, Italy
**University of California Santa
Barbara, USA**

Microring resonator **27 June – 9am (CET)**

Mach-Zehnder interferometer **28 June – 9am (CET)**

How to tune a microring and a Mach-Zehnder interferometer? **29 June – 9am (CET)**

Dynamics of microring resonator and Mach-Zehnder interferometer **30 June – 9am (CET)**

Applications **1 July – 9am (CET)**

Abstract:

A vast set of integrated optoelectronic devices are based on two simple building blocks: ring resonators and Mach-Zehnder interferometers. Those building blocks are fundamental for several applications such as filters, switches and modulators, isolators and nonlinear optical elements. This class is focused on modelling and design of integrated optoelectronic devices based on ring resonators and Mach-Zehnder interferometers. The students will learn the main features of those optical components, both in a static and in a dynamic case, and how to optimize them to perform different operations.

Short bio:

Paolo Pintus is an Assistant Professor at the Department of Physics of the University of Cagliari, Italy. He received a M.Sc. degree with honors in Electronic Engineering from the University of Cagliari, Italy, in 2007 and a Ph.D. with honors in Innovative technologies of Information, Communication Technologies, and Robotics from the Scuola Superiore Sant'Anna in Pisa, Italy in 2012. In 2007, he was visiting scholar at the Imperial College of London, and from 2012 until 2016 Postdoctoral Research Fellow with the Scuola Superiore Sant'Anna. Since 2016, he has been a Project Scientist with the University of California, Santa Barbara. Dr. Pintus is member of the Italian Society for Industrial and Applied Mathematics, and a Senior Member of the IEEE Society and IEEE Photonic Society. For his research activities he was awarded the Italian INdAM/SIMAI Prize in 2012, the Ing. Giuseppe Pedriali Prize in 2013, and the European Anile-ECMI Prize for Mathematics in Industry in 2014. His research interests are in the field of integrated optics, silicon photonics, and computational electromagnetism.

Please, send a request of participation to pixnet@santannapisa.it in order to receive the link to the seminar sessions.