ALEXANDER GAETA 'Nonlinear Photonics on a Silicon Chip'

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April 05, 2011

Seminar, April 5, 2011, 15:00. Seminar Room

ALEXANDER GAETA

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Since the birth of nonlinear optics, researchers have continually focused on developing efficient nonlinear optical devices that require low optical powers. Silicon nanophotonics has emerged as a highly promising platform for such devices and for enabling massively parallel, integrated optical and electronic devices on a single chip. The basis for nonlinear photonics in Silicon is the strong light confinement that enables both a high effective

nonlinearity and tuning of the waveguide dispersion, which is essential for phase matching of parametric nonlinear optical processes such as four-wave-mixing (FWM). We demonstrate a wide range of devices based on FWM in Si waveguides that offer the potential for ultrahigh bandwidth all-optical processing, CMOS-compatible multiple-wavelength sources, and all-optical clocks.

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Hosted by Prof. Lluis Torner and Prof. Valerio Pruneri