ICFO Colloquium SIMON HOOKER 'Quasi-Phase-Matched High-Harmonic Generation'

SIMON HOOKER

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Monday, March 4, 2013, 12:00. ICFO?s Auditorium

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Generating high harmonics of a visible laser pulse is a relatively simple way of providing coherent radiation at extreme ultraviolet and soft x-ray wavelengths. Sources of this type could have many potential applications in the biological and physical sciences, but the limited photon flux provided by high-harmonic generation (HHG) restricts these.
The photon flux from HHG sources is limited by the low conversion efficiency and difficulties

in phase-matching the nonlinear process. An alternative to true phase-matching is quasi-phase-matching (QPM) in which generation of harmonics is modulated spatially so as to avoid back-conversion of the generated light.
In this talk I will present several techniques for achieving QPM, including the use of counter-propagating trains of laser pulses and polarization beating.

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Hosted by Prof. Jens Biegert