



Institutskolloquium

Am **6. September 2006, 16:00 Uhr** spricht:

Prof. Giulio Cerullo

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über

“High-energy, few-optical-cycle pulses with passive carrier-envelope phase stabilization”

Control of the carrier-envelope phase (CEP) of few-optical-cycle light pulses is important for extreme nonlinear optics experiments, which are sensitive to the electric field rather than the intensity of the pulse, and in particular for the production of attosecond pulses by high harmonic generation. CEP can be stabilized in a passive, all-optical way by difference frequency generation (DFG) between two pulses sharing the same CEP. In this nonlinear process the phases of the two pulses add up with different signs and thus their fluctuations are automatically cancelled.

This talk describes a system for the generation of high-energy, few-optical-cycle, CEP-stabilized pulses in the IR. The system, driven by an amplified Ti:sapphire laser, starts from a passively CEP-stabilized seed generated by DFG of a broadband, hollow-fiber-broadened supercontinuum, which is then boosted in energy by a two-stage optical parametric amplifier. It produces CEP-stabilized pulses with tunable central wavelength around 1.5 μm , up to 200- μJ energy and 15-fs duration. Perspectives for energy scaling of the source will also be discussed.

Ort: Max-Born-Saal, MBI, Max-Born-Str. 2a

Interessenten sind herzlich eingeladen.

Prof. Dr. W. Sandner