THUIIIc • Poster III c - Generation and Measurement

Poster Area
16:15–18:15
THUIIIc • Poster III c - Generation and Measurement

THUIIIc.1 • 16:15
Femtosecond passively mode-locked fiber lasers using saturable Bragg reflectors, •*Hyunil Byun, Jason Sickler, Jonathan Morse, Jeff Chen, Dominik Pudo, Erich Ippen,* and *Franz Kärtner*; *Massachusetts Institute of Technology, 77 Massachusetts Ave, Cambrdige, MA 02139 USA.*
We demonstrate a soliton fiber laser with 280-fs pulses at 408-MHz repetition rate, and a stretched-pulse regime fiber laser with 179-fs pulses at 234-MHz repetition rate. Both use saturable Bragg reflectors for mode-locking and/or self-starting.

THUIIIc.2 • 16:15
Nano-FROG: Frequency Resolved Optical Gating by a Nanometric Object at the Focal plane of a high NA Objective, •*Jérôme Extermann[1], Luigi Bonacina[1], François Courvoisier[2], Denis Kiselev[1], Yannick Mugnier[3], Ronan Le Dantec[3],* and *Jean-Pierre Wolf[1]*; *[1]GAP-Biophotonics Université de Genève, Genève, Switzerland, [2]Institut FEMTO-ST Université de Franche-Comté, UMR CNRS 6174, Besançon, France, [3]Symme Polytech' Savoie, Annecy le Vieux, France*.
We present a technique to characterize ultrashort pulses at the focal plane of a high numerical aperture (NA) objective with unprecedented spatial resolution, by performing a FROG measurement with a single nanocrystal as nonlinear medium.

THUIIIc.3 • 16:15
A New Generalized Projections Algorithm Geared Towards Sub-100 Attosecond Pulse Characterization, •*Justin Gagnon[1], Vladislav Yakovlev[1,2], Eleftherios Goulielmakis[1], Martin Schultze[1],* and *Ferenc Krausz[1,2]*; *[1]Max-Planck-Institut für Quantenoptik, D-85748 Garching, Germany, [2]Department für Physik, Ludwig-Maximilians-Universität München, D-85748 Garching, Germany*.
We developed a new algorithm for characterizing attosecond pulses from streaked spectra. We compare our algorithm to the current one used for attosecond characterization, and show that it is better suited for sub-100 attosecond pulses.

THUIIIc.4 • 16:15
Autocorrelation Experiments with Ultrashort Soft X-ray FEL Pulses, •*Rolf Mitzner[2], Wolfgang Eberhardt[1], Matthias Neeb[1], Tino Noll[1], Mathias Richter[3], Sebastian Roling[2], Marco Rutkowski[2], Björn Siemer[2], Andrej Sorokin[3], Kai Tiedtke[4],* and *Helmut Zacharias[2]*; *[1]BESSY GmbH, Albert-Einstein-Str. 15,12489 Berlin, Germany, [2]Physikalisches Institut, Universität Münster, D-48149 Münster, Germany, [3]PTB,Abbe_Str. 2-12,D-10587 Berlin, Germany, [4]DESY, Nottkestr.85, 22603 Hamburg, Germany*.
We report first direct measurements of the average coherence time and pulse length of fs soft X-ray pulses from the free electron laser at DESY (FLASH) by means of linear and nonlinear autocorrelation.

THUIIIc.5 • 16:15
Characterization of Mid-Infrared Pulses, •*Kevin F. Lee[1,2], Adeline Bonvalet[1,2],* and *Manuel Joffre[1,2]*; *[1]Laboratoire d'Optique et Biosciences, Ecole Polytechnique, Centre National de la Recherche Scientifique, 91128 Palaiseau, France, [2]Institut National de la Santé et de la Recherche Médicale, U696, 91128 Palaiseau, France*.
We characterize mid-infrared pulses using upconversion to the visible regime by mixing with two collinear time-delayed replicas of an 800 nm chirped pulse. The phase is encoded as a function of the time-delay.

THUIIIc.6 • 16:15
Noncollinear optical parametric amplification of cw light, continua and vacuum fluctuations, •*Markus Breuer, Christian Homann,* and *Eberhard Riedle*; *LS für BioMolekulare Optik, Ludwig-Maximilians-Universität München, Oettingenstraße 67, 80538 München, Germany*.
Seed sources for NOPAs are compared. Single-mode cw light renders Fourier-limited femtosecond and fully tunable picosecond μJ output pulses, OPG leads to random spectral fluctuations and a sapphire continuum delivers identical pulses on every shot.

THUIIIc.7 • 16:15
Intensity and phase measurements of the spatio-temporal electric field of focusing ultrashort pulses, •*Pamela Bowlan, Pablo Gabolde,* and *Rick Trebino*; *Georgia Tech School of Physics, 837 state st, Atlanta GA 30332,USA.*
We present the first technique for directly measuring the complete spatio-temporal field of ultrashort pulses at and near a focus. Our method uses an experimentally simple and high-spectral-resolution variant of spectral interferometry (SEA TADPOLE).

THUIIIc.8 • 16:15
Modeling of octave-spanning sub-two cycle Titanium:sapphire lasers: simulation and experiment, •*Michelle Y. Sander, Helder M. Crespo, Jonathan R. Birge,* and *Franz X. Kaertner*; *Department of Electrical Engineering and Computer Sciene and Research Laboratoy of Electronics, Massachusetts Institute of Technology, Cambridge, Massachusetts, 02139, USA.*
It is shown that a one-dimensional temporal model can quantitatively predict the spectral output and pulse shape of a sub-two-cycle octave-spanning Ti:sapphire laser.

THUIIIc.9 • 16:15
Ultra-Broadband Infrared Pulses from a Potassium-Titanyl Phosphate Optical Parametric Amplifier for VIS-IR-SFG Spectroscopy, •*Oleksandr Isaienko* and *Eric Borguet*; *Chemistry Department, Temple University, 1901 N. 13th Street, Philadelphia, Pennsylvania, 19122, USA.*
A non-collinear KTP-OPA to provide ultra-broadband mid-infrared pulses was designed and characterized. With proper pulse-front and phase correction, the system has a potential for high-time resolution vibrational VIS-IR-SFG spectroscopy.

THUIIIc.10 • 16:15
Spatially resolved Ar* and Ar+* imaging as a diagnostic for capillary based high harmonic generation, •*Richard Chapman[1], Jeremy Frey[1], Christopher Froud[2], Edward Rogers[2], William Brocklesby[2], Matthew Praeger[3], James Grant-Jacob[2],* and *Sarah Stebbings[3]*; *[1]Department of Chemistry, University of Southampton SO17 1BJ, UK, [2]Optoelectronics Research Centre, University of Southampton, SO17 1BJ, UK, [3]Department of*

Physics & Astronomy, University of Southampton, SO17 1BJ, UK.
Spectrally resolved imaging of Ar/Ar+ created by high harmonic generation is demonstrated, and used as a diagnostic of capillary geometry on XUV generation efficiency.

THUIIIc.11 • 16:15
Polarization, ionization and spatial gates in single attosecond pulse generation, •*Valer Tosa*[1], *Carlo Altucci*[2], and *Raffaele Velotta*[2]; [1]*National Institute R&D Isotopic and Molecular Technologies, 400293 Cluj-Napoca, Romania,* [2]*CNISM, Dipartimento Scienze Fisiche, Universita FedericoII, 80126, Napoli, Italia*.
We show that in polarization-gating techniques ionization dynamics and three-dimensional propagation effects act as additional gates in single attosecond pulse generation. We propose novel laser field configurations generating single harmonic bursts using long laser pulses

THUIIIc.12 • 16:15
Chirped-pulse Raman amplification for two-color high-intensity, *Peng Dong*, *Franklin Grigsby*, and •*Mike Downer*; *FOCUS Center, University of Texas at Austin, Department of Physics, Austin, TX 78712, USA.*
We report generation and compression of millijoule-level first Stokes sideband (873nm) of 800nm TW pulses by inserting a multi-stage barium nitrate Raman shifter-amplifier into a conventional Ti:sapphire chirped pulse amplification system.