

Room C (103)

Session Title 25C2 / [T02] Attosecond Physics
Date & Time Tuesday, 25 August, 13:45 ~ 15:15
Session Chair Francois Legare (Institut National de la Recherche Scientifique, Canada)

[25C2-1] 13:45~14:15 Invited Talk

Observation of Attosecond Quantum Wavepackets in Molecules

Katsumi Midorikawa, Tomoya Okino, Yasuo Nabekawa, and Yusuka Furukawa
RIKEN Center for Advanced Photonics, Japan

Attosecond Fourier transform spectroscopy with attosecond pulse trains is implemented for observing ultrafast quantum wavepacket dynamics in diatomic molecules. Coupled nuclear-electron motions in the molecules are investigated with an attosecond-pump and attosecond probe method.

[25C2-2] 14:15~14:30

Non-collinear High-order Harmonic Generation in Ionized Media

Kentaro Sato, Takafumi Kuroda, Haruka Ohno, Kyohei Suzuki, and Akira Suda
Tokyo University of Science, Japan

High-harmonic generation by non-collinear wave mixing in ionized media is demonstrated, in which the phase matching is realized in the direction of difference frequency mixing. The emission angle temporally varies depending on the ionization degree.

[25C2-3] 14:30~15:00 Invited Talk

Ultra-high-intensity Laser-plasma Interactions Using Structured Light Fields

Subhendu Kahaly, Sylvain Monchocé, Gustave Pariente, Adrien Leblanc, and Fabien Quere
Commissariat à l'Energie Atomique, France

We explain how structuring femtosecond laser pulses in space and time leads to new effects in ultra-high intensity laser plasma interactions, with three examples: ultrafast wavefront rotation, transient plasma gratings, and light springs.

[25C2-4] 15:00~15:15

Frequency-Resolved Optical Gating with Plasma Mirror for VUV Pulse Measurement

Ryuji Itakura, Takayuki Kumada, Motoyoshi Nakano, and Hiroshi Akagi
Japan Atomic Energy Agency, Japan

We demonstrate a new type of frequency-resolved optical gating based on time-resolved reflection measurement with a plasma mirror. A VUV waveform is retrieved with a modified principal component generalized projections algorithm.

Room D (106)

Session Title 25D2 / [T04] High Power, High Energy Lasers
Date & Time Tuesday, 25 August, 13:45 ~ 15:00
Session Chair Arno Klenke (Friedrich Schiller Universität Jena, Germany)

[25D2-1] 13:45~14:15 Invited Talk

Ultrafast Thin Disk Lasers: towards Intralaser Extreme Nonlinear Optics

T. Südmeyer¹, C. J. Saraceno^{1,2}, C. Schriber², A. Diebold², F. Emaury², M. Golling², A. Klenner², S. Schilt², and U. Keller²

¹Université de Neuchâtel, Switzerland, ²ETH Zurich, Switzerland

Ultrafast thin disk lasers generate higher power levels than any other femtosecond oscillator technology. We review the current state of the art and give an outlook towards new applications such as intralaser extreme nonlinear optics.

[25D2-2] 14:15~14:30

Scalable Cryogenic Gas Cooled Multi-Slab 10 J and 100 J, 10 Hz DPSSL System

Saumyabrata Banerjee¹, Klaus Ertel¹, Paul Mason¹, Jonathan Phillips¹, Mariastefania De Vido¹, Jodie Smith¹, Thomas Butcher¹, M. Divoky², J. Pilar², Cristina Hernandez-Gomez², Justin Greenhalgh¹, and John Collier²

¹STFC Rutherford Appleton Laboratory, UK, ²Institute of Physics, Czech Republic

We report the demonstration of a cryogenic gas cooled multi-slab Yb:YAG laser, producing 10.8 J pulses at 10 Hz, and initial results from a scaled-up DPSSL designed to produce 100 J pulses.

[25D2-3] 14:30~14:45

The Output Ability Promotion of the SG II -Up Laser Facility

Yanqi Gao¹, Zhaodong Cao¹, Xuedong Yang¹, Weixin Ma¹, Baoqiang Zhu², and Zunqi Lin²

¹Shanghai Institute of Laser Plasma, China, ²Shanghai Institute of Optics and Fine Mechanics, China

The SG-II -Up laser facility is one of the most important high power laser facilities in China. The maximum output of this facility is studied, and it is improved to 8000J from the design point 5000J.

[25D2-4] 14:45~15:00

Wavefront Control Systems of the SG II Laser Facility and the Multi-Petawatt Laser Facility

Haidong Zhu¹, Ailin Guo¹, Zeping Yang², Jianqiang Zhu¹, Zunqi Lin¹, Weixin Ma¹, Xinglong Xie¹, Jian Zhu², Xunchun Li¹, and Ping Zhu¹

¹Shanghai Institute of Optics and Fine Mechanics, China, ²The Institute of Optics and Electronics, CAS, China, ³China Academy of Engineering Physics, China

The ShenguangII laser facility (SGII-LF) is a total output 40 kilojoules laser facility containing a 8-beam Nd glass laser. To meet stringent demands on the delivered energy for the physics experiments research, the SGII-LF utilizes an integrated wavefront control system to significantly improve the ability to tightly focus each laser beam onto a target. Multiple sources of both static and dynamic aberration are corrected. On the other hand, we have designed two adaptive optics systems for the ShenguangII multi-petawatt laser facility (SGII-MPW-LF) to correct the spatial and temporal aberrations introduced by the uncorrected wavefront.