

ICUIL 2004

International Conference on Ultrahigh Intensity Lasers

Program

Sunday

15:00–20:00	Conference Registration Desk Open
19:00–20:30	Dinner
20:30–22:30	Welcome Reception

Monday

7:30–17:00	Conference Registration Desk Open
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Opening Remarks

8:30	Barty, C.	Welcome to ICUIL 2004 and Announcements
8:40	Mourou, G.	IUPAP and the formation of ICUIL

Facility Overviews 1—Session Chair H. Hutchinson

9:00	Yamakawa, K.	Status and Future Prospects of a JAERI PW Ti:Sapphire Laser
9:30	Yanovsky, V.	"Hercules"- Ultrarelativistic Laser
10:00	Sauerbrey, R.	POLARIS – A Diode-Pumped Petawatt Laser System
10:30		Coffee Break
10:45	Hulin, D.	LOA : Overview and Upgrades
11:15	Payeur, S.	Overview of the Advanced Laser Light Sources (ALLS) Project
11:45	Ko, D.-K.	Overview of the ultrashort, high intensity laser research program at APRI in Korea

12:15–13:30	Lunch
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Facility Overviews 2□ Session Chair P. Balcom

13:30	Moses, E.	NIF and Future Multi-kJ Short-Pulse Lasers
14:00	Jitsuno, T.	FIREX laser for first ignition experiment
14:30	Stoeckl, C.	OMEGA EP: A High-Energy Petawatt Laser at LLE
15:00		Coffee Break
15:15	Blanchot, N.	Technical issues in the MPWHE-LIL laser Project
15:45	Rambo, P.	Overview of Z-Beamlet PW Initiative
16:15	Le Blanc, C.	LULI 2000: A Petawatt laser combined with a kJ, ns laser and 4□100 J probe beams for high intense laser-plasma interaction

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Monday

17:00–18:30

Dinner

Facility Overviews 3 □ Session Chair C. Le Blanc

18:30	Hutchinson, H.	The Laser programme at the Rutherford Appleton Laboratory
19:00	Ditmire, T.	Design and Applications of the Texas Petawatt Laser
19:30	Borneis, S.	Status of PHELIX Laser and First Experiments
20:00	Cowan, T. E.	Overview of research opportunities using a High Intensity Laser coupled to a 2 TW Z-pinch at University of Nevada
20:30	Leemans, W. P.	L'OASIS Ti:sapphire laser facility: a multi-beam, multi-terawatt system for wake-field acceleration studies
21:00	Bett, T. H.	Overview of ultrahigh intensity laser development at AWE

21:30–23:30

Meeting of the ICUIL

Tuesday

7:30–17:00

Conference Registration Desk Open

Techniques for Increased Intensity □ Session Chair B. Stuart

8:30	Tournois, P.	Applying AOPDF to CPAs and OPCPAs
9:00	Olivier, S. S.	Adaptive Optics Technologies
9:30	Wattellier, B.	Recent developments in commercial beam control
9:50	Dovillaire, G.	Latest update in adaptive optics system and Shack-Hartmann wavefront sensing
10:10		Coffee Break
10:30	Collier, J. L.	Progress towards PetaWatt level OPCPA
11:00	Zuegel, J. D.	Performance of the OMEGA EP's Prototype-OPCPA Front End
11:30	Wurtele, J.	Ultra-intense Pulse Compression in Plasmas

12:00–13:30

Lunch

13:30–17:30

Networking Time (onsite trails, lakefront etc.)

17:30–18:30

Western Barbeque

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Tuesday

Keynotes on Emerging Applications □ Session Chair G. Mourou

18:30	Key, M. H.	Fast Ignition
19:10	Carroll, F.	Compton Sources for Medicine
19:50	Fujiwara, M.	Nuclear Physics Developments with High Intensity Photon Beams
20:30	Tajima, T.	Physics at the Intensity Frontier

21:15–23:15 Networking Reception (Main Patio)

Wednesday

8:00–12:30 Conference Registration Desk Open

Grating Technologies □ Session Chair D. Neely

9:00	Kane, S.	Large Pulse Compression Gratings: Recent Developments at Jobin Yvon
9:30	Britten, J. A.	Demonstration of Meter-Scale, High Laser Damage Multilayer Dielectric Diffraction Gratings for HEPW Pulse Compression
10:00	Molander, B.	Design and test of high damage threshold MLD gratings
10:30		Coffee Break
10:45	Kessler, T. J.	Design Strategies and Technology Demonstrations for the Tiled Grating Compressor Coherent addition of grating apertures: Out of plane metrology &
11:15	Rushford, M. C.	issues
11:45	Montant, S.	Phase distortions tolerances for mosaic gratings in petawatt laser

12:15–13:30 Lunch and Guest Speaker

Trade Show and Banquet

14:00	Depart for marina
14:30	Board Tahoe Queen
18:30	Return to Tahoe City
19:00	Arrive at Granlibakken

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Thursday

8:00–17:00

Conference Registration Desk Open

Joint ICUIL/LaserNet Europe Session (Power Scaling) □ Session Chair K. Yamakawa

9:00	Pittman, M.	A High-Repetition-Rate Petawatt Class Ti:Sa Laser as a pump for LASERIX the future French X-ray Laser Facility
9:30	Hackel, L.	High Average Power Green Lasers: Potential Drivers for Rep Rated PW Lasers
10:00	Khattak, C. P.	Evolution and Status of Large Aperture Ti:sapphire
10:30		Coffee Break

Joint ICUIL/LaserNet Europe Session (Pulse Measurement) □ Session Chair C. Toth

10:45	Sandner, W.	ICUIL Working Group on High Power Beam Characterization and Intensity Measurements
11:00	Trebino, R.	Self-referenced measurement of the electric field of ultrashort pulses
11:30	Eichmann, U.	Towards the "Atomic Intensity Probe": Relativistic Effects and Core Relaxation in Ultra-Strong Laser Field Ionization
12:00	G. Mourou	Full Field Characterization in the Rayleigh Volume by Precise Spatial Phase Measurement: Application to Ultrahigh Intensity Measurement

Joint ICUIL/LaserNet Europe Session (Pulse Contrast & Safety) □ Session Chair T. Kessler

13:30	Chambaret, J. P.	Recent advances in the ASE contrast improvement on Ultra- intense laser systems through the European Program SHARP
14:00	Jovanovic, I.	Nonlinear techniques for prepulse removal
14:20	Rauschenberger, J.	Compact phase-stabilization scheme for chirped-pulse amplifiers
14:40	Neely, D.	Radiological protection for Petawatt Laser Interactions

Joint ICUIL/LaserNet Europe Poster Session

15:00–17:00

Applications and Technology Poster Session

17:00–18:30

Dinner and Guest Speaker

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Thursday

Particle Applications and Intense Lasers □ Session Chair R. Sauerbrey

18:30	Nees, J.	Relativistic Microelectronics
19:00	Kim, D.	Relativistic nonlinear Thomson scattering as a route to the generation of intense attosecond X-ray pulses
19:30	V. Malka	Compact high quality electron and X ray beams from relativistic laser plasma interaction
20:00	Toth, C.	Recent laser wake-field electron acceleration results at the L'OASIS laser facility: bright THz beam generation and mono-energetic electron beam production via laser guiding

Panel Discussion on Future Exawatt and Zetawatt Lasers □ Session Chair C. Barty

20:30	All	Panel discussion
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Closing Remarks

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Posters

- 1 Zhavoronkov, N. *et al.* "High-peak-power 1 kHz laser system for sub-picosecond hard X-ray point source"
- 2 Crane, J. K. *et al.* "Falcon: a dual-beam Ti:sapphire laser system for high-brightness, Thomson x-ray generation on PLEIADES"
- 3 Hartemann, F. V. *et al.* "High-Brightness Compton Scattering X-Ray Source Development and Applications"
- 4 Hou, B. *et al.* "X-ray generation in the "Relativistic γ^3 " regime"
- 5 Patel, P. K. *et al.* "LLNL Experiment on the RAL Petawatt Laser"
- 6 Presura, R. *et al.* "Laboratory Simulation of Magnetospheric Plasma Shocks"
- 7 Ronneberger, F. *et al.* "Cleaning of contaminated gratings"
- 8 Rushford, M. C. *et al.* "Diffraction eigenvector: demonstration of diffraction invariance around the wave front bisector plane normal"
- 9 Rushford, M. C. *et al.* "Modeled results and signal processing for tiled grating via the "Lambda-Configuration" all optical encoder"
- 10 Marre, G. *et al.* "3D numerical model of focal spot distortions induced by misalign segmented compressor"
- 11 Fittinghoff, D. N. *et al.* "Compact, High-Dispersion, Pulse Compressor Designs Using Cascaded Gratings"
- 12 Schmid, A. W. *et al.* "A Short-Pulse Laser-Damage Update on OMEGA EP"
- 13 Brown, C. G. *et al.* "Precision short-pulse damage testing of advanced multilayer dielectric gratings for high-energy petawatt lasers"
- 14 Jovanovic, I. *et al.* "Millijoule pulses from quasi-phase-matched optical parametric chirped-pulse amplification"
- 15 Dawson, J. W. *et al.* "Fiber Laser Front end for the Advanced Radiographic Capability (ARC) on the National Ignition Facility (NIF)"
- 16 Caird, J. A. *et al.* "Janus Intense Short Pulse (ISP), the Next Ultrahigh Intensity Laser at LLNL"
- 17 Renault, A. *et al.* "Hybrid OPCPA laser systems for the generation of ultrashort pulses at the mJ level"
- 18 Abdei, K.-S. "Adaptive optical systems on LULI high intense laser facilities"
- 19 Bromage, J. *et al.* "High Intensity Diagnostics For OMEGA EP"
- 20 Jullien, A. *et al.* " 10^{-11} temporal contrast enhanced ultra-intense laser system"

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| 21 | Divall, E. J. <i>et al.</i> | "A New Linear Contrast Enhancement Technique" |
| 22 | Dobosz, S. <i>et al.</i> | "Improvement of intense laser temporal contrast using a plasma mirror" |
| 23 | Falcoz, F. <i>et al.</i> | "Multi-Terawatts system at 100 Hz without cryogenic cooling" |
| 24 | Huang, Y.-C. <i>et al.</i> | "The NTHU Relativistic Photonics Laboratory" |
| 25 | Kalashnikov, M. P. <i>et al.</i> | "Double CPA laser : way to temporally clean laser pulses" |
| 26 | Yu, T. J. <i>et al.</i> | "Development of an autocorrelator using organic polymer thin films" |
| 27 | Kobayashi, T. <i>et al.</i> | "Stabilization and control of CEP of idler from two types of NOPA" |
| 28 | Plé, F. <i>et al.</i> | "Study of parasitic lasing in a large-aperture Ti:Sapphire crystal for the LASERIX facility" |
| 29 | Uteza, O. <i>et al.</i> | "High contrast multiterawatt laser in the blue-green region" |
| 30 | Zinkstok, R. <i>et al.</i> | "Parametric amplification of few-cycle laser pulses with carrier-envelope phase control" |
| 31 | Hein, J. <i>et al.</i> | "POLARIS – A Diode-Pumped Petawatt Laser System" |