

ExHILP 2017 program

Tuesday, September 5th

09:00 - 09:20	Opening Session
09:20 - 10:20	E. Esarey <i>Plasma-based lepton colliders</i> Chairman: J. T. Mendonça
10:20 - 10:40	Coffee break
Session: New High-Intensity Laser and Beam Facilities Chairman: V. Telnov	
10:40 - 11:00	V. Yakimenko <i>Ultra-intense beams at FACET-II and experiments to probe High Field Quantum Electrodynamics far beyond Schwinger fields</i>
11:00 - 11:20	L. Lancia <i>Advances and first experiments at Apollon 10 PW</i>
11:20 - 11:40	G. Korn <i>Advances @ ELI Beamlines: Status of user facility development</i>
11:40 - 11:50	Short break
11:50 - 12:10	H.-P. Schlenvoigt <i>Helmholtz International Beamline for Extreme Fields: A stroke of luck for High-Intensity Lasers at the European XFEL</i>
12:10 - 12:30	B. Hegelich <i>Theory and Practice of Extreme Field Science @ Texas PW</i>
12:30 - 12:50	I. C. E. Turcu <i>Progress and commissioning experiments at ELI-Nuclear Physics</i>
12:50 - 13:10	B. Shen <i>Possible Experiments with Station of Extreme light (SEL) at Shanghai Coherent Light Facility (SCLF)</i>
13:10 - 14:30	Lunch
Session: Schwinger pair production Chairman: A. Ilderton	
14:30 - 14:50	H. Gies <i>Critical Schwinger pair production</i>
14:50 - 15:10	R. Schuetzhold <i>Sauter-Schwinger effect and dynamical assistance</i>
15:10 - 15:25	F. Hebenstreit <i>Pulse shape optimization for electron-positron production</i>
15:25 - 15:40	J. Dumont <i>Vacuum processes in tightly focused electromagnetic fields</i>
15:40 - 15:50	Short break

Session: Breit-Wheeler pair production Chairman: T. Heinzl	
15:50 - 16:10	F. Mackenroth <i>Second order processes of nonlinear QED in ultra-strong laser fields</i>
16:10 - 16:25	T. Blackburn <i>Scaling laws for positron production in laser-electron-beam collisions</i>
16:25 - 16:40	R. Capdessus <i>Influence of the ion mass on the non-linear Breit-Wheeler process with the next generation high power lasers</i>
16:40 - 17:00	Poster flash presentations Chairman: T. Grismayer
17:00 - 18:30	Poster session & welcome reception

Wednesday, September 6th

09:00 - 10:00	A. Di Piazza <i>Radiation Reaction in Classical and Quantum Electrodynamics</i> Chairman: S. V. Bulanov
Session: Radiation reaction and nonlinear Compton scattering Chairman: M. Marklund	
10:00 - 10:20	D. Seipt <i>Recent Advances in Non-linear Compton Scattering</i>
10:20 - 10:40	Coffee break
10:40 - 10:55	J. Kirk <i>QED effects on trapped electrons in intense laser beams</i>
10:55 - 11:10	F. Niel <i>From quantum to classical modelling of radiation reaction: a focus on stochasticity effects</i>
11:10 - 11:30	A. Arefiev <i>New frontiers of photon generation and particle acceleration in laser-driven MT-level magnetic fields</i>
11:30 - 11:40	Short break
11:40 - 12:00	A. Gonoskov <i>Ultra-bright GeV photon source via controlled electromagnetic cascades in laser-dipole waves</i>
12:00 - 12:15	A. Angioi <i>Interference Effects in Nonlinear Compton Scattering</i>
12:15 - 13:40	Lunch
Session: Electron-positron pair production and electromagnetic cascades Chairman: A. Di Piazza	
13:40 - 14:00	A. Pukhov <i>3D PIC simulations of near-quantum electro-dynamical regime of laser-plasma interaction</i>
14:00 - 14:20	X. Ribeyre <i>Preparation of two-photon Breit-Wheeler pair creation experiments</i>

14:20 - 14:30	Short break
14:30 - 14:50	M. Tamburini <i>Laser-Pulse-Shape Control of Seeded QED Cascades</i>
14:50 - 15:10	T.-P. Yu <i>Electron-positron pairs generated by lasers in near-critical-density plasmas</i>
15:10 - 15:25	M. Jirka <i>Pair production in a tightly focused standing wave</i>
15:25 - 15:40	A. Mironov <i>General theory of electron seeded self-sustained QED cascades</i>
15:40 - 18:30	Social program

Thursday, September 7th

09:00 - 10:00	M. Marklund <i>Review of numerical methods for the study of high intensity fields</i> Chairman: B. Kampfer
10:00 - 10:20	Coffee break
Session: Exotic Physics with High-Intensity Lasers and beyond Chairman: F. Mackenroth	
10:20 - 10:40	A. Fedotov <i>Non-perturbative aspects of Intense Field QED</i>
10:40 - 11:00	B. Kampfer <i>Pair production: trident, Breit-Wheeler and Schwinger processes in multi-scale fields</i>
11:00 - 11:20	A. Ilderton <i>Quantum dynamics in background electromagnetic fields</i>
11:20 - 11:30	Short break
11:30 - 11:50	T. Heinzl <i>Depletion of Intense Fields</i>
11:50 - 12:10	S. S. Bulanov <i>Flying relativistic mirrors for nonlinear QED studies</i>
12:10 - 12:30	S. Meuren <i>Recollision processes and other photon-induced strong-field QED phenomena in a plane-wave laser field</i>
12:30 - 14:00	Lunch
Session: Experimental Progresses in High-Intensity Laser-Matter Interaction Chairman: V. Yakimenko	
14:00 - 14:20	J. Cole <i>Experimental observation of radiation reaction due to hard photon emission in the collision of a high-intensity laser with a laser-wakefield accelerated electron beam</i>
14:20 - 14:40	G. Sarri <i>Experimental observation of strong radiation reaction in the field of an ultra-intense laser</i>
14:40 - 15:00	H. Chen <i>Laser Produced Positron Research at Lawrence Livermore National Laboratory</i>

15:00 - 15:10	Short break
15:10 - 15:30	E. Stambulchik <i>In-situ measurements of the field strength due to radiative signatures</i>
15:30 - 15:50	K. Krajewska <i>Ionization using relativistic short laser pulses for attosecond electron wavepackets generation</i>
15:50 - 16:10	Coffee break
16:10 - 16:30	D. Umstadter <i>High-Order Multiphoton Thomson Scattering: X-Ray Generation by Bright Infrared Light</i>
16:30 - 16:50	C. H. Nam <i>Commissioning Experiments with the 4 PW Laser at CoReLS</i>
16:50 - 17:10	P. McKenna <i>Advances in relativistic laser-plasma interaction: Controlling collective particle motion in an ultrathin foil</i>
17:10 - 17:25	M. Galimberti <i>Spectral gain investigation for the 20PW project</i>

Friday, September 8th

09:00 - 10:00	V. Telnov <i>Gamma-gamma colliders</i> Chairman: D. Umstadter
10:00 - 10:20	Coffee break
Session: Exotic Physics with High-Intensity Lasers and beyond Chairman: B. King	
10:20 - 10:40	S. V. Bulanov <i>Radiation Dominated Electromagnetic Shields</i>
10:40 - 10:55	M. Bussmann <i>Many, many photons: Classical and QED radiation reaction effects and the quirks of implementing them in Exascale-ready codes</i>
10:55 - 11:10	E. Gelfer <i>Producing superstrong longitudinal fields with radiation reaction</i>
11:10 - 11:20	Short break
11:20 - 11:40	H. Bauke <i>Spin effects and radiation reaction in strong electromagnetic fields</i>
11:40 - 12:00	B. Dillon <i>Axion production in an intense laser pulse</i>
12:00 - 12:15	A. Noble <i>Laser-plasma interactions under the influence of axions</i>
12:15 - 12:30	H. Terças <i>Axion-plasma interaction in strong laser fields: the axion-plasmon polariton</i>
12:30 - 14:00	Lunch

Session: Vacuum polarisation	
Chairman: R. Schuetzhold	
14:00 - 14:20	F. Karbstein <i>All-optical signatures of vacuum nonlinearity and the Heisenberg-Euler effective action</i>
14:20 - 14:40	H. Ruhl <i>An efficient and accurate ODE based numerical solver for the Heisenberg-Euler equations in weak field approximation in 3+1 dimensions</i>
14:40 - 14:55	B. King <i>Vacuum birefringence in high-energy laser-electron collisions</i>
14:55 - 15:05	Short break
15:05 - 15:20	J. T. Mendonça <i>XUV vortex emission from a magnetized quantum vacuum</i>
15:20 - 15:40	J. Koga <i>Precise Measurement of Delbruck Scattering Using Polarized Photon Beams</i>
15:40 - 15:55	S. P. Kim <i>QED vacuum polarization and Schwinger pair production in curved spacetimes</i>
15:55 - 16:00	Closing session

Posters

Radiation reaction and nonlinear Compton scattering

I.01) E. Raicher *

Nonlinear Compton in a rotating electric field - additional quantum parameter and the scaling of the emitted photon energy with the laser intensity

I.02) Ou Z. Labun

Factorization of high-energy photon emission during laser-plasma interactions

I.03) D. Serebryakov

Generation of synchrotron gamma-rays and electron acceleration during grazing incidence of intense laser pulses onto planar targets

I.04) J. Vyskočil

Emission of gamma rays in ultra-intense laser interactions with solid targets

I.05) S. Rykovanov

Gamma-ray generation from plasma channel resonant wiggler

I.06) M. Duff *

Modelling the influence of the radiation reaction force on the acceleration of ultra-thin foils

I.07) L. Gremillet

Synchrotron emission from nanowire-array targets irradiated at ultra-high laser intensities

I.08) F. Del Gaudio *

Compton scattering collision module for OSIRIS

Electron-positron pair production and electromagnetic cascades

II.01) I. Ploumistakis

Investigations on particle anti-particle creation from laser induced ultra-strong electromagnetic fields interaction with vacuum

II.02) G. Torggrimsson *

Nonperturbative versus perturbative aspects in dynamically assisted Schwinger pair production

II.03) C. Kohlfürst *

Phase-space analysis of Schwinger pair production in inhomogeneous electric and magnetic fields

II.04) P. Satunin *

Breit-Wheeler pair production in external electric field from worldline instantons

II.05) E. Efimenko

Extreme States of Electron-Positron-Pair Plasma Produced by Laser Governed Vacuum Breakdown

II.06) A. Muraviev

Extreme current densities via electromagnetic cascades in ultraintense laser fields

II.07) A. Fedotov

Electron-positron pair production from vacuum in a strong rotating electric field

II.08) A. Bashinov *

Breakup of electron-positron plasma into current sheets in ultrarelativistic laser fields

II.09) C. M. Kim

Pair Creation by a Spatially Localized Sauter-type Electric Field in Scalar QED

II.10) M. Vranic *

Seeded QED cascades with two or four counter-propagating laser pulses

Exotic Physics with High-Intensity Lasers and beyond

III.01) A. Bogomyagkov

Low-energy electron-positron collider for production and spectroscopic study of $(\mu^+\mu^-)$ bound state

III.02) A. J. Macleod

On the energy-momentum of light: an all optical view of the Abraham-Minkowski controversy

III.03) V. Kharin

Higher-dimensional caustics in QED processes in the strong laser field

III.04) H. Kadlecová

Gravitational wave generation by interaction of high power lasers with matter using shock waves

III.05) A. Hartin *

Bound Dirac solutions from the locally gauge invariant Furry picture Lagrangian

III.06) S. Huang *

Ultrafast Artificial Axion Source with Laser-Plasma Interaction

III.07) S. Villalba-Chavez

Prospects for hunting invisible axions in strong laser pulses

III.08) I. Tsymbalov

Tailored preplasma for gamma and neutron production with femtosecond table top TW laser

III.09) S. Ahrens *

Spin-dependent diffraction in standing light waves

Experimental Progresses in High-Intensity Laser-Matter Interaction

IV.01) I. C. E. Turcu *

Two 10 PW Counter-propagating Laser Beams for Experiments in High Field Physics at Intensities $>10^{22}$ W/cm²

IV.02) L. Labun

Connecting theory and simulation to high-intensity laser-plasma experiment

IV.03) M. Galletti

Ultrashort optical parametric oscillator up to the mid-infrared based on BiBO pumped by a fs ytterbium laser

Vacuum birefringence

V.01) N. Ahmadiniaz *

One-particle reducible contribution to the one-loop spinor propagator in a constant field

V.02) R. Torres *

Finite-size and multidimensional effects of laser-induced vacuum birefringence

V.03) S. Bragin *

High-Energy Vacuum Birefringence and Dichroism in an Ultrastrong Laser Field

Other topics

VI.01) K. Perrakis

Production, acceleration and extraction of ions (negative/positive) from high-power laser induced plasma

VI.02) C. Baumann

Generation of ultra-short electron bunches using circularly polarized Laguerre-Gaussian laser modes

VI.03) S. Tang

Plasma high-order-harmonic generation and isolated pulse emission from ultraintense laser pulses

VI.04) B. Ramakrishna

Understanding Filaments in Laser Plasmas

VI.05) X. Zhang

Tunable Intense High-Order Vortex Generation

VI.06) C. Hojbota

Space Charge Effects on the Propagation of Electron Beams following High Intensity Laser-Electron Scattering

VI.07) M. Grech

SMILEI: a collaborative, open-source, multi-purpose particle-in-cell code for plasma simulation

VI.08) J. Magnusson *

Prospects and Signatures of Chirped-Standing-Wave Acceleration

VI.09) I. Barth *

Reducing parametric backscattering by polarization rotation

VI.10) F. Cruz

Towards first-principle simulations of pulsar QED cascades: charge conserving scheme for PIC simulations in modified spherical coordinates

VI.11) J. Vieira *

Relativistic particle vortices from a twisted plasma wave with orbital angular momentum

*** inc. flash presentation**