

# ExHILP 2021



## Report of Contributions

Contribution ID: 1

Type: **not specified**

## QED in Astrophysics

*Monday, September 13, 2021 3:00 PM (1 hour)*

**Primary author:** PHILIPPOV, Alexander

**Presenter:** PHILIPPOV, Alexander

**Track Classification:** Tutorial/Plenary talks

Contribution ID: 2

Type: **not specified**

## **Threshold effects in electron-positron pair creation from the vacuum**

*Monday, September 13, 2021 4:00 PM (25 minutes)*

**Presenter:** KRAJEWSKA, Katarzyna

**Track Classification:** Topical talks

Contribution ID: 3

Type: **not specified**

## **Progress towards realisation of QED-plasmas with high-intensity lasers**

*Friday, September 17, 2021 10:30 AM (25 minutes)*

**Primary author:** RIDGERS, Chris

**Presenter:** RIDGERS, Chris

**Track Classification:** Topical talks

Contribution ID: 4

Type: **not specified**

## Welcome & Opening Remarks

*Monday, September 13, 2021 2:45 PM (15 minutes)*

Contribution ID: 5

Type: **not specified**

## **Towards the measurement of the quantum-vacuum Lagrangian coupling coefficients using two counterpropagating super-intense laser pulses**

*Monday, September 13, 2021 6:00 PM (25 minutes)*

**Primary author:** ROSO, Luis

**Presenter:** ROSO, Luis

**Track Classification:** Topical talks

Contribution ID: 6

Type: **not specified**

## **Positrons - from creation to acceleration**

*Monday, September 13, 2021 6:30 PM (25 minutes)*

**Primary author:** VRANIC, Marija

**Presenter:** VRANIC, Marija

**Track Classification:** Topical talks

Contribution ID: 7

Type: **not specified**

## **Laser-Particle collider for high-energy high-intensity physics studies**

*Monday, September 13, 2021 7:00 PM (25 minutes)*

**Primary author:** BULANOV, Stepan

**Presenter:** BULANOV, Stepan

**Track Classification:** Topical talks



Contribution ID: 8

Type: **not specified**

## **Status of International Ultra-Intense Laser-Based Science: the Multi-Petawatt Physics Prioritization (MP3) workshop**

*Monday, September 13, 2021 7:30 PM (25 minutes)*

**Primary author:** ZUEGEL, Jonathan

**Presenter:** ZUEGEL, Jonathan

**Track Classification:** Topical talks

Contribution ID: 9

Type: **not specified**

## **How do simulations of intense laser-matter interactions work?**

*Tuesday, September 14, 2021 12:30 PM (1 hour)*

**Primary author:** BLACKBURN, Tom

**Presenter:** BLACKBURN, Tom

**Track Classification:** Tutorial/Plenary talks

Contribution ID: 10

Type: **not specified**

# From Theory to Experiment: Challenges and Opportunities in Strong-Field QED

*Wednesday, September 15, 2021 5:30 PM (1 hour)*

**Presenter:** MEUREN, Sebastian

**Track Classification:** Tutorial/Plenary talks

Contribution ID: 11

Type: **not specified**

## The Ritus-Narozhny conjecture

*Thursday, September 16, 2021 12:30 PM (1 hour)*

**Primary author:** ILDERTON, Anton

**Presenter:** ILDERTON, Anton

**Track Classification:** Tutorial/Plenary talks

Contribution ID: 12

Type: **not specified**

## **Higher fidelity benchmarking of the nonlinear Compton and Breit-Wheeler processes in a laser pulse**

*Monday, September 13, 2021 4:30 PM (25 minutes)*

**Primary author:** KING, Ben

**Presenter:** KING, Ben

**Track Classification:** Topical talks

Contribution ID: 13

Type: **not specified**

## **All-optical nonlinear Compton scattering experiments using a 4 PW laser system**

*Tuesday, September 14, 2021 9:00 AM (25 minutes)*

**Primary author:** HOJBOTA, Calin

**Presenter:** HOJBOTA, Calin

**Track Classification:** Topical talks

Contribution ID: 14

Type: **not specified**

## **Spin polarization effects of particles in ultraintense laser fields**

*Tuesday, September 14, 2021 9:30 AM (25 minutes)*

**Primary author:** LI, Jian-Xing

**Presenter:** LI, Jian-Xing

**Track Classification:** Topical talks

Contribution ID: 15

Type: **not specified**

## **Breit-Wheeler pair production by high-energy bremsstrahlung and intense laser radiation**

*Tuesday, September 14, 2021 10:00 AM (25 minutes)*

**Primary author:** GOLUB, Alina

**Presenter:** GOLUB, Alina

**Track Classification:** Topical talks



Contribution ID: 16

Type: **not specified**

## **FOR2783: Probing pair production in the non-perturbative regime**

*Tuesday, September 14, 2021 10:30 AM (25 minutes)*

**Primary author:** SALGADO, Felipe

**Presenter:** SALGADO, Felipe

**Track Classification:** Topical talks

Contribution ID: 17

Type: **not specified**

## **Impact of the laser spatio-temporal shape on Breit-Wheeler pair production**

*Tuesday, September 14, 2021 1:30 PM (25 minutes)*

**Primary author:** RICONDA, Caterina

**Presenter:** RICONDA, Caterina

**Track Classification:** Topical talks

Contribution ID: 18

Type: **not specified**

## **Overview of the LUXE experiment and its physics case**

*Wednesday, September 15, 2021 3:00 PM (25 minutes)*

**Primary author:** HEINEMANN, Beate

**Presenter:** HEINEMANN, Beate

**Track Classification:** Topical talks

Contribution ID: **19**

Type: **not specified**

## **The detector system in LUXE**

*Wednesday, September 15, 2021 3:30 PM (25 minutes)*

**Primary author:** TAL HOD, Noam

**Presenter:** TAL HOD, Noam

**Track Classification:** Topical talks

Contribution ID: 20

Type: **not specified**

## **SLAC E-320: Probing Strong-Field QED at FACET-II**

*Wednesday, September 15, 2021 6:30 PM (25 minutes)*

**Primary author:** GERSTMAYR, Elias

**Presenter:** GERSTMAYR, Elias

**Track Classification:** Topical talks

Contribution ID: 21

Type: **not specified**

## **The 3PW NSF ZEUS user facility**

*Wednesday, September 15, 2021 7:00 PM (25 minutes)*

**Primary author:** WILLINGALE, Louise

**Presenter:** WILLINGALE, Louise

**Track Classification:** Topical talks

Contribution ID: 22

Type: **not specified**

## **SF QED capabilities at BELLA PW: second beamline overview**

*Wednesday, September 15, 2021 7:30 PM (25 minutes)*

**Primary author:** TURNER, Marlene

**Presenter:** TURNER, Marlene

**Track Classification:** Topical talks

Contribution ID: 23

Type: **not specified**

## **Experimental search for Vacuum Diffraction using high-power laser and XFEL**

*Thursday, September 16, 2021 9:00 AM (25 minutes)*

**Primary author:** SEINO, Yudai

**Presenter:** SEINO, Yudai

**Track Classification:** Topical talks



Contribution ID: 24

Type: **not specified**

## **Focusing of high-precision polarized X-rays for the detection of vacuum birefringence**

*Thursday, September 16, 2021 9:30 AM (25 minutes)*

**Primary author:** SCHMITT, Annika Tamara

**Presenter:** SCHMITT, Annika Tamara

**Track Classification:** Topical talks

Contribution ID: 25

Type: **not specified**

# High-intensity laser probes of quantum vacuum nonlinearity

*Thursday, September 16, 2021 10:00 AM (25 minutes)*

**Primary author:** MOSMAN, Elena

**Presenter:** MOSMAN, Elena

**Track Classification:** Topical talks

Contribution ID: 26

Type: **not specified**

## **Experimental estimates of photon background in a potential light-by-light scattering study**

*Thursday, September 16, 2021 10:30 AM (25 minutes)*

**Primary author:** DOYLE, Leonard

**Presenter:** DOYLE, Leonard

**Track Classification:** Topical talks

Contribution ID: 27

Type: **not specified**

## **First-order strong-field QED processes including the damping of particle states**

*Thursday, September 16, 2021 1:30 PM (25 minutes)*

**Primary author:** PODSZUS, Tobias

**Presenter:** PODSZUS, Tobias

**Track Classification:** Topical talks

Contribution ID: 28

Type: **not specified**

## **Status of Breit-Wheeler experiment preparations at CALA**

*Friday, September 17, 2021 9:00 AM (25 minutes)*

**Primary author:** KARSCH, Stefan

**Presenter:** KARSCH, Stefan

**Track Classification:** Topical talks

Contribution ID: 29

Type: **not specified**

## **Interaction of Electromagnetic Waves in a Vacuum**

*Friday, September 17, 2021 9:30 AM (25 minutes)*

**Primary author:** SASOROV, Pavel

**Presenter:** SASOROV, Pavel

**Track Classification:** Topical talks

Contribution ID: 30

Type: **not specified**

## **Resummations in Strong-Field QED**

*Friday, September 17, 2021 10:00 AM (25 minutes)*

**Primary author:** TORGRIMSSON, Greger

**Presenter:** TORGRIMSSON, Greger

**Track Classification:** Topical talks

Contribution ID: 31

Type: **not specified**

## **Nonlinear, Strong-Field QED SLAC Experiment E-144**

*Friday, September 17, 2021 11:00 AM (25 minutes)*

**Primary author:** MCDONALD, Kirk

**Presenter:** MCDONALD, Kirk

**Track Classification:** Topical talks



Contribution ID: 32

Type: **not specified**

## **Challenges in characterizing QED processes in Ritus-Narozhny nonperturbative regime**

*Friday, September 17, 2021 11:30 AM (25 minutes)*

**Primary author:** FEDOTOV, Alexander

**Presenter:** FEDOTOV, Alexander

**Track Classification:** Topical talks

Contribution ID: **33**

Type: **not specified**

**REMO**

Contribution ID: 35

Type: **not specified**

## **Effects of electron beam geometry on pair production in laser-electron scattering**

*Tuesday, September 14, 2021 11:10 AM (5 minutes)*

**Presenter:** AMARO, Óscar

**Session Classification:** REMO Poster Session

**Track Classification:** Posters

Contribution ID: 36

Type: **not specified**

## **Worldline fermion propagator dressed with N photons**

*Wednesday, September 15, 2021 4:05 PM (5 minutes)*

**Presenter:** BANDA, Victor

**Session Classification:** REMO Poster Session

**Track Classification:** Posters

Contribution ID: 39

Type: **not specified**

## **LCFA for radiation in a time-dependent electric field: applicability and corrections**

*Tuesday, September 14, 2021 11:40 AM (5 minutes)*

**Presenter:** GELFER, Evgeny

**Session Classification:** REMO Poster Session

**Track Classification:** Posters

Contribution ID: 40

Type: **not specified**

## **Enhanced Gamma-Photon Generation Through Laser-Solid Interaction in the Relativistic $\lambda_3$ Regime**

*Tuesday, September 14, 2021 11:45 AM (5 minutes)*

**Presenter:** HADJISOLOMOU, Prokopis

**Session Classification:** REMO Poster Session

**Track Classification:** Posters

Contribution ID: 41

Type: **not specified**

## **Demonstrating monoenergetic electrons using using dual-stage gas cell**

*Tuesday, September 14, 2021 11:20 AM (5 minutes)*

**Presenter:** HARSH, Harsh

**Session Classification:** REMO Poster Session

**Track Classification:** Posters

Contribution ID: 42

Type: **not specified**

## **Electron-positron pair production by an ultra-intense laser pulse focused by relativistic flying mirror**

*Tuesday, September 14, 2021 11:00 AM (5 minutes)*

**Presenter:** JEONG, Tae Moon

**Session Classification:** REMO Poster Session

**Track Classification:** Posters



Contribution ID: 43

Type: **not specified**

## Reaching high laser intensity by a radiating electron

*Tuesday, September 14, 2021 11:25 AM (5 minutes)*

**Presenter:** JIRKA, Martin

**Session Classification:** REMO Poster Session

**Track Classification:** Posters

Contribution ID: 44

Type: **not specified**

## **Measurement of pulse front tilt by a wavelength-resolved wavefront sensor**

*Tuesday, September 14, 2021 11:50 AM (5 minutes)*

**Presenter:** KIM, Yeong Gyu

**Session Classification:** REMO Poster Session

**Track Classification:** Posters

Contribution ID: 45

Type: **not specified**

## **Optical Signatures of Quantum Vacuum Nonlinearities in the Strong Field Regime**

*Tuesday, September 14, 2021 11:05 AM (5 minutes)*

**Presenter:** KLAR, Leonhard

**Session Classification:** REMO Poster Session

**Track Classification:** Posters

Contribution ID: 46

Type: **not specified**

## **Dynamically assisted tunneling via high-intensity fields**

*Tuesday, September 14, 2021 11:30 AM (5 minutes)*

**Presenter:** KOHLFÜRST, Christian

**Session Classification:** REMO Poster Session

**Track Classification:** Posters

Contribution ID: 47

Type: **not specified**

## **Relativistic modified Bessel-Gaussian beam generated from plasma-based beam braiding**

*Tuesday, September 14, 2021 11:35 AM (5 minutes)*

**Presenter:** LEI, Bifeng

**Session Classification:** REMO Poster Session

**Track Classification:** Posters

Contribution ID: 48

Type: **not specified**

## The QED four-photon amplitudes off-shell

*Wednesday, September 15, 2021 4:20 PM (5 minutes)*

**Presenter:** LOPEZ LOPEZ, Misha Arturo

**Session Classification:** REMO Poster Session

**Track Classification:** Posters

Contribution ID: 49

Type: **not specified**

# Applications of Bayesian Inference in Radiation Reaction Experiments

*Tuesday, September 14, 2021 11:55 AM (5 minutes)*

**Presenter:** LOS, Eva

**Session Classification:** REMO Poster Session

**Track Classification:** Posters

Contribution ID: 50

Type: **not specified**

## **High-brilliance ultra-narrow-band x-rays via electron radiation in colliding laser pulses**

*Tuesday, September 14, 2021 12:00 PM (5 minutes)*

**Presenter:** LYU, Qingzheng

**Session Classification:** REMO Poster Session

**Track Classification:** Posters



Contribution ID: 51

Type: **not specified**

## **Self-consistent simulations of positron creation and acceleration in a plasma channel**

*Tuesday, September 14, 2021 12:05 PM (5 minutes)*

**Presenter:** MARTINEZ, Bertrand

**Session Classification:** REMO Poster Session

**Track Classification:** Posters

Contribution ID: 52

Type: **not specified**

## **Multiloop calculations in QED in a strong constant crossed field**

*Tuesday, September 14, 2021 12:15 PM (5 minutes)*

**Presenter:** MIRONOV, Arseny

**Session Classification:** REMO Poster Session

**Track Classification:** Posters

Contribution ID: 53

Type: **not specified**

## **X-ray vacuum diffraction at finite spatio-temporal offset**

*Tuesday, September 14, 2021 12:10 PM (5 minutes)*

**Presenter:** OUDE WEERNINK, Ricardo

**Session Classification:** REMO Poster Session

**Track Classification:** Posters

Contribution ID: 54

Type: **not specified**

## **Simulation study of spatial-temporal properties of a relativistic electron beam at the collision-point with a high-intensity laser pulse : Relevant to nonlinear Compton Scattering experiment at CoReLS**

*Tuesday, September 14, 2021 12:20 PM (5 minutes)*

**Presenter:** PATHAK, Vishwa Bandhu

**Session Classification:** REMO Poster Session

**Track Classification:** Posters

Contribution ID: 55

Type: **not specified**

## **Relativistically Transparent Magnetic Filaments: a path to megaTesla fields for SF-QED experiments**

*Wednesday, September 15, 2021 4:10 PM (5 minutes)*

**Presenter:** RINDERKNECHT, Hans

**Session Classification:** REMO Poster Session

**Track Classification:** Posters

Contribution ID: 56

Type: **not specified**

## **Quantum vacuum processes in the extremely intense fields of relativistic plasma mirror sources**

*Tuesday, September 14, 2021 12:25 PM (5 minutes)*

**Presenter:** SAINTE-MARIE, Antonin

**Session Classification:** REMO Poster Session

**Track Classification:** Posters

Contribution ID: 57

Type: **not specified**

## **Mathematical determination of temperature on a cuboid crystal in photoacoustic interaction**

*Tuesday, September 14, 2021 12:25 PM (5 minutes)*

**Presenter:** SARODE, Abhijit P.

**Session Classification:** REMO Poster Session

**Track Classification:** Posters

Contribution ID: 58

Type: **not specified**

## **Sauter-Schwinger effect for colliding laser pulses**

*Tuesday, September 14, 2021 12:25 PM (5 minutes)*

**Presenter:** SCHUETZHOLD, Ralf

**Session Classification:** REMO Poster Session

**Track Classification:** Posters



Contribution ID: 59

Type: **not specified**

## **Are there phase transitions in strong-field regimes?**

*Wednesday, September 15, 2021 4:15 PM (5 minutes)*

**Presenter:** SHI, Yuan

**Session Classification:** REMO Poster Session

**Track Classification:** Posters

Contribution ID: 60

Type: **not specified**

## **Physical origin of different dynamical stages of the quasiparticle distribution function during pair production by ultrashort laser pulses**

*Tuesday, September 14, 2021 12:25 PM (5 minutes)*

**Presenter:** SINGH, Manoranjan

**Session Classification:** REMO Poster Session

**Track Classification:** Posters

Contribution ID: 61

Type: **not specified**

## **Generation of quasimonoenergetic positron beams in chirped laser fields**

*Tuesday, September 14, 2021 12:25 PM (5 minutes)*

**Presenter:** TANG, Suo

**Session Classification:** REMO Poster Session

**Track Classification:** Posters

Contribution ID: 62

Type: **not specified**

## **Numerical Simulations of Ponderomotive Scattering as a Means of High Intensity Measurement**

*Tuesday, September 14, 2021 12:25 PM (5 minutes)*

**Presenter:** TETER, Thomas

**Session Classification:** REMO Poster Session

**Track Classification:** Posters

Contribution ID: 63

Type: **not specified**

## **Strong interplay between superluminescence and radiation friction during direct laser acceleration of electrons within a magnetic filament**

*Wednesday, September 15, 2021 4:00 PM (5 minutes)*

**Presenter:** YEH, I-Lin

**Session Classification:** REMO Poster Session

**Track Classification:** Posters

Contribution ID: 72

Type: **not specified**

## **Reaching high laser intensity by a radiating electron**

**Presenter:** JIRKA, Martin