

# **FOR2783 Retreat "Probing the Quantum Vacuum"**

## **Report of Contributions**

Contribution ID: 1

Type: **not specified**

## Introductory remarks

*Wednesday 10 July 2024 13:50 (10 minutes)*

Contribution ID: 2

Type: **not specified**

## **Biref@HIBEF**

*Wednesday 10 July 2024 14:00 (45 minutes)*

**Presenter:** KARBSTEIN, Felix

Contribution ID: 3

Type: **not specified**

## **A new X-ray polarization analysis method**

*Wednesday 10 July 2024 14:45 (45 minutes)*

**Presenter:** HIPPLER, Willi

Contribution ID: 4

Type: **not specified**

## Current status of the planned photon-photon scattering experiment at CALA

*Wednesday 10 July 2024 16:45 (45 minutes)*

As outlined in the second-phase DFG proposal and our recent publication [1], efforts are ongoing at CALA to implement a photon-photon scattering experiment based on two counter-propagating pulses from the same laser source. The beamline for a single pulse has been fully commissioned, including a central hole in the beam for the collection of scattered signal. This currently allows studies of the background only (by residual gas and static scattering from chamber components). We will report on quantitative estimates for the background contributions expected in the full collision experiment. We will also give an update on the progress towards counter-propagating the second beam and related challenges.

**Presenter:** DOYLE, Leonard

Contribution ID: 5

Type: **not specified**

# **A dark-field setup for the measurement of light-by-light scattering with high- intensity lasers**

*Wednesday 10 July 2024 16:00 (45 minutes)*

**Presenter:** SCHÜTZE, Fabian

Contribution ID: 6

Type: **not specified**

## **Darkfield technique for measure quantum vacuum signal**

*Thursday 11 July 2024 09:30 (45 minutes)*

**Presenter:** KHADEMI, Pooyan

Contribution ID: 7

Type: **not specified**

## **Phase transition analogues in laser collisions with a dark-field setup**

*Thursday 11 July 2024 10:15 (45 minutes)*

**Presenter:** MAIWALD, Lars



Contribution ID: 8

Type: **not specified**

## **Adaptive Heisenberg-Euler solver using dynamic mesh refinement**

*Thursday 11 July 2024 11:00 (45 minutes)*

**Presenter:** RASCHE, Rasmus

Contribution ID: 9

Type: **not specified**

# **Laser Wakefield Acceleration to GeV Electron Energies for the Breit-Wheeler Experiment**

*Thursday 11 July 2024 13:15 (45 minutes)*

**Presenter:** VON GRAFENSTEIN, Katinka

Contribution ID: 10

Type: **not specified**

# **The impact of laser focussing and radiation reaction on particle spectra from nonlinear Breit-Wheeler pair production**

*Thursday 11 July 2024 14:00 (45 minutes)*

**Presenter:** ECKEY, Alexandra

Contribution ID: 11

Type: **not specified**

## **Background Analysis and Pair Detection at the FOR2783/E3 Experiment**

*Thursday 11 July 2024 14:45 (45 minutes)*

**Presenter:** SALGADO, Felipe

Contribution ID: 12

Type: **not specified**

## **Simulation of dynamical pair creation in a strong electric field**

*Thursday 11 July 2024 16:00 (45 minutes)*

**Presenter:** SONG, Yukiko

Contribution ID: 13

Type: **not specified**

## **Dynamically assisted nonlinear Breit-Wheeler pair production in high-intensity laser fields**

*Thursday 11 July 2024 16:45 (45 minutes)*

**Presenter:** VILLALBA-CHAVEZ, Selym

Contribution ID: 14

Type: **not specified**

# Unveiling the phase space of nonlinear Compton scattering

*Friday 12 July 2024 09:30 (45 minutes)*

**Presenter:** LARIN, Nikita

Contribution ID: 15

Type: **not specified**

## Lab Tour & Discussion

*Friday 12 July 2024 10:15 (1h 35m)*



Contribution ID: **16**

Type: **not specified**

## Closing remarks

*Friday 12 July 2024 11:50 (10 minutes)*