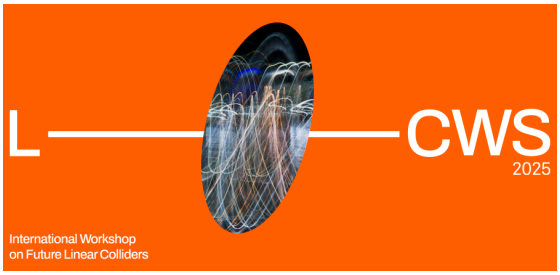

Contribution ID: **2** Type: **Talk**

LUXE: a high-precision experiment to study non-perturbative QED in electron-laser and photon-laser collisions

Thursday 23 October 2025 09:40 (15 minutes)

The Laser Und XFEL Experiment (LUXE), in planning at DESY Hamburg, is intended to study quantum electrodynamics (QED) in strong electromagnetic fields, and in particular the transition from perturbative to non-perturbative. In the non-perturbative regime, electron-positron pairs tunnel out of the vacuum in a manner akin to the Schwinger process. The experiment will make precision measurements of the photon and positron rates in collisions between a high-intensity laser pulse and the 16.5 GeV electron beam of the European XFEL, or the high-energy secondary photons it produces. This talk will provide an overview and update on the work of the LUXE collaboration, as the experiment moves towards implementation.

Authors: ZARNECKI, Aleksander Filip (University of Warsaw); COLLABORATION, LUXE

Presenter: ZARNECKI, Aleksander Filip (University of Warsaw)

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