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Non-linear Compton Study in the LUXE Experiment

Saturday, 7 November 2020 14:00 (1 hour)

The electron beam accelerator of the European XFEL, operated at DESY, is the highest energy electron beam currently operating world-wide.While it was designed for the purpose of photon science it is also ideally suited to study quantum physics in the strong-field regime.This is the goal of the LUXE experiment currently being designed by DESY accelerator, particle and laser physicists jointly with collaborators from Germany, Israel, Ukraine and UK. As one of the goals, LUXE experiment will measure the non-linear Compton, often referred as High Intensity Compton scattering (HICS) and the two-step trident process in a new regime. In one of the modes, LUXE will collide the electron beam with the high-power laser pulse. With these measurements, the LUXE experiment will advance the field significantly compared to previous experiments.

Primary author: Dr BORYSOVA, Maryna (KINR)

Presenter: Dr BORYSOVA, Maryna (KINR)

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