



Contribution ID: 190

Type: **Poster ARD**

The all optical high energy X-rays experiment at DESY

Monday 3 November 2025 19:55 (3 minutes)

The All optical High Energy X-rays (APHEX) experiment at DESY promises to deliver Inverse Compton Scattering (ICS) bright X-ray beams with narrow bandwidth and tunable energy. Such a compact X-ray source is a great alternative to large-scale synchrotron, potentially leading to a number of novel medical and industrial applications. However, all-optical ICS sources are yet to demonstrate percent-level bandwidths, a fundamental requirement for many applications. Here, we show how an active plasma lens and the tailoring of the scattering beam with a flying focus can be employed to finely tune the electron beam-photon interaction, producing tunable X-ray and gamma beams with percent-level bandwidths. The current state of APHEX and first results will also be discussed along with potential applications for this unique source.

Speed talk:

I am unwilling/unable to present a speed talk

Authors: MARTELLI, Lorenzo (MPA4); MEISEL, Martin (MPA4); MARIANI, Cristina (MPA4 (PAs for Industrial and Health Application)); PODER, Kristjan (MPA4 (PAs for Industrial and Health Applications))

Presenter: MARTELLI, Lorenzo (MPA4)

Session Classification: Poster