



Contribution ID: 178

Type: poster

## Construction and characterization of a short-period undulator for a laser-plasma driven light source

*Wednesday, 27 September 2017 19:30 (1 hour)*

Laser-plasma accelerators provide high accelerating gradients and are therefore promising candidates as drivers for next generation brilliant light sources. The LUX Beamline, developed and operated in a close collaboration of the University of Hamburg and DESY aims at producing spontaneous undulator radiation from laser-plasma generated electron beams. The BEAST II undulator is based on permanent magnets and is designed and built for in-vacuum operation in the LUX beamline. It features a short period length of 5 mm, a gap of 2 mm and consists of 100 periods. Already for an electron beam with a kinetic energy of 400 MeV, the produced X-ray radiation is expected to reach the water window with a wavelength of 4 nm. The contribution will cover the design, construction and commissioning of the BEAST II undulator.

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**Session Classification:** Wine and Poster Session 2 (WG4-WG5-WG6-WG7)

**Track Classification:** WG4 - Applications of Compact and High-Gradient Accelerators