

## Contribution submission to the conference Dortmund 2021

**Polarimeter Design for a LPA Electron Beam** — •JENNIFER POPP<sup>1,2</sup>, SIMON BOHLEN<sup>1</sup>, JENNY LIST<sup>1</sup>, GUDRID MOORTGAT-PICK<sup>2,1</sup>, JENS OSTERHOFF<sup>1</sup>, KRISTJAN PÖDER<sup>1</sup>, and FELIX STEHR<sup>1,2</sup> — <sup>1</sup>Deutsches Elektronen-Synchrotron (DESY), Hamburg — <sup>2</sup>Universität Hamburg

Laser Plasma Acceleration (LPA) with its extremely high gradients promises compact accelerators and great progress has been made in that direction. However, many applications in material science, nuclear and high energy physics require polarized electron beams.

The motivation of the LEAP project at DESY is the first time demonstration of LPA with polarization. The electron polarization will be measured with photon transmission polarimetry. It makes use of the production of circularly polarized Bremsstrahlung during the passage of the electrons through a suitable target. The photon polarization is then measured with the aid of the transmission asymmetry related to the magnetization direction of an iron absorber.

In this contribution simulation studies and a design for the polarimeter for a future setup at DESY for the routine production of polarized electron beams are presented.

**Part:** AKBP  
**Type:** Vortrag;Talk  
**Topic:** New Accelerator Concepts  
**Email:** jennifer.popp@desy.de