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# Polarized Electron Beams from Laser Plasma Acceleration and Their Polarimetry

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In recent years, Laser Plasma Acceleration (LPA) has become a promising alternative to conventional RF accelerators. However, so far, it has only been theoretically shown that generating polarized LPA beams is possible. The LEAP (Laser Electron Acceleration with Polarization) project at DESY aims to demonstrate this experimentally for the first time, using a pre-polarized plasma target.
The electron polarization will be measured with photon transmission polarimetry, which makes use of the production of circularly polarized bremsstrahlung during the passage of the electron beams through a suitable converter target. The photon polarization is then measured with the aid of transmission asymmetry arising from reversing the magnetization direction of an iron absorber.
In this contribution an overview of the LEAP project is presented, detailing the generation of the polarized electron beams along with the design and simulation studies of the polarimeter.

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