Contribution ID: **34** Type: **Parallel Session Presentation**

Plasma Lens: Prospects and designs of increased yield capture section of polarised e+ sources

Monday, 18 October 2021 20:00 (20 minutes)

The ILC is an ambitious international collaboration with its positron source especially being at the forefront of pushing technological boundaries. Part of this enterprise has to be the optical matching device responsible for capturing positrons exiting the target and transforming them from a highly divergent beam with a small effective cross-section to a wide, parallel beam to be appropriate for the succeeding acceleration sections. This problem has been approached by different types of sophisticated coils like the quarter wave transformer and flux concentrator for many years now. Today considerations include the new principle based on an electric current in a plasma. This so called plasma lens creates a magnetic field, which is in theory especially qualified for optical matching due to its pronounced azimuthal component in contrast to the radial field of conventional devices. The prospect of increased yield would benefit a wide range of sources, particularly polarised sources.

Primary authors: HAMANN, Niclas (Uni Hamburg); Prof. MOORTGAT-PICK, Gudrid (University of Hamburg); Mr FORMELA, Manuel (Uni Hamburg); Dr FLÖTTMANN, Klaus (DESY Hamburg)

Presenter: HAMANN, Niclas (Uni Hamburg)

Session Classification: Polarized Sources and Targets

Track Classification: Parallel Sessions: Polarized Sources and Targets