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Development of a transferline for LPA-generated electron bunches to a compact storage ring

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The injection of LPA-generated beams into a storage ring is considered to be one of the most prominent applications of laser plasma accelerators (LPAs). The Karlsruhe Institute of Technology (KIT) and Deutsches Elektronen-Synchrotron (DESY) cooperate to address the key challenges with the aim to successfully demonstrate injection of LPA-generated beams into a compact storage ring with large energy acceptance and dynamic aperture. The corresponding transfer line is currently being designed within the cSTART project at KIT and will be ideally suited to accept bunches from a 50 MeV LPA prototype developed at DESY. This contribution presents the foreseen layout of the transfer line from the LPA to the injection point of the storage ring and discusses the status of beams optics calculations.

Summary

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