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Beam diagnostics requirements for a LPA injector

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Recently, Laser Plasma Accelerators (LPA) have been proposed as injectors for storage rings (e.g. an “alternative” or “back-up” injector for PETRA IV at DESY and an injector in the “short pulse storage ring” cSTART at KIT, Karlsruhe). Apart from LPA beam parameter and stability improvements, which will be included in such future machines, a full suite of beam instrumentation will be required for setting up the LPAs (as injectors) and transferring the beams in a reproducible way to / into the storage rings. Beam-based feedbacks may also be required to stabilize the LPA beams and make them reliable injectors in the future.

An overview of the diagnostics requirements for such LPA-based injectors might be interesting and motivating to foster the exchange between the LPA and the traditional accelerator (beam instrumentation) communities.

Footnotes

Funding Agency

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Yes

Primary author: SCHLOTT, Volker (Paul Scherrer Institut)

Presenter: SCHLOTT, Volker (Paul Scherrer Institut)

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