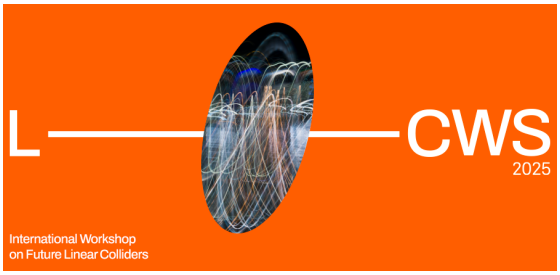

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Beam-Driven Plasma Wakefield Accelerator for a 10 TeV Wakefield Collider

Tuesday 21 October 2025 19:40 (1 hour)

The 10 TeV Wakefield Collider Design Study [1] aims to produce a self-consistent, start-to-end design of a 10 TeV-center-of-mass linear collider based on wakefields technology. One of the considered options for driving the main linac is beam-driven plasma wakefield acceleration (PWFA). The goal of the PWFA-Linac Working Group is to identify the main challenges and showstoppers, and to define a set of global metrics to optimize the proposed solutions.
We summarize the recent discussions and present some basic considerations on the PWFA Linac design, such as the energy loss due to synchrotron radiation in the chicanes between each plasma stage.

[1] S. Gessner et al., arXiv:2503.20214 (2025)

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