MATTER AND TECHNOLOGIES

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ADVANCES IN HIGH-QUALITY, HIGH-REPETITION-RATE PLASMA ACCELERATION AT FLASHFORWARD

Plasma-wakefield accelerators represent an exciting pathway to gigavolt-per-metre accelerating gradients that could significantly decrease the size and cost of the high-energy electron accelerators required for future particle-collider and photon-science facilities. FLASHForward (DESY) uses electron bunches from the FLASH linac with the aim of demonstrating reproducible, high-repetition-rate plasma acceleration of FEL-quality beams, all with a high energy-transfer efficiency. This contribution reports on progress made towards several aspects of this goal, including reaching milestones in trailing-bunch emittance preservation and driver energy depletion, as well as developments in plasma-cell design and advanced control techniques for plasma accelerators.

Speed talk:

Normal speed talk selection

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