

High average gradient in a laser-gated multistage plasma wakefield accelerator

Thursday, 21 September 2023 17:25 (20 minutes)

Inter-stage distances and components in multistage PWFA concepts are among the biggest potential contributors to the total accelerator length and may strongly reduce the average gradient of a plasma based accelerator. Here, we discuss a concept to optimize inter-plasma distances by drive-beam coupling in the temporal domain and gating the accelerator via a femtosecond ionization laser.

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Session Classification: WG1: Plasma-based accelerators and ancillary components

Track Classification: WG1: Plasma-based accelerators and ancillary components