



Contribution ID: 72

Type: **Early Career Scientist**

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

Thursday, 4 May 2023 15:35 (5 minutes)

Beam-driven plasma wakefield accelerators provide accelerating gradient several orders of magnitude higher than currently available RF technology. When considering staging of multiple plasma accelerator modules to reach TeV energies, inter-plasma components and distances rapidly become one of the biggest contributors to the total accelerator length and therefore may reduce the average gradient. We would like to suggest and discuss a staging design, that combines gating of the accelerator via a femtosecond ionization lasers with driver-coupling in the temporal domain. Results show that GV/m average gradients are achievable.

Primary authors: KNETSCH, Alexander (SLAC); Dr ANDRIYASH , Igor (LOA); Dr GILLJOHANN , Max (LOA); Dr KONONENKO, Olena (LOA); Mr MATHERON, Aime (LOA); Ms MANKOVSKA, Yuliia (LOA); Dr SAN MIGUEL CLAVERIA, Pablo (Instituto Superior Tecnico); Ms ZAKHAROVA, Viktoriia (Laboratoire d'Optique Appliquée); Prof. ADLI, Erik (Department of physics, University of Oslo); CORDE, Sebastien (LOA)

Presenter: KNETSCH, Alexander (SLAC)

Session Classification: Contributed Remarks