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On the commissioning of the ELIMAIA plasma accelerator and the future medical application using the ELIMED beamline

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In this contribution we report on the commissioning of the ELIMAIA beamline laser-plasma Ion Accelerator carried out with the high repetition-rate, high peak-power L3-HAPLS (>10J in 30 fs) laser available at the ELI Beamlines user facility. The optimization process to achieve a stable energy cutoff exceeding 30MeV with high proton fluxes will be described providing an overview of the available technology for user experiments. These results demonstrate the robustness of the developed technology available for users at the ELIMAIA beamline, thus paving the way towards the future use of the ELIMED beamline for the application of controlled and stable high dose rate ion beams in a wide range of research, in particular biomedical ones. We will present some beam optics and Monte Carlo simulation results obtained using the experimental evidence of the accelerated ion beam characterization and showing the capability of the ELIMED beamline.

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Footnotes

I have read and accept the Privacy Policy Statement

Yes

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