

Commissioning experiment on proton acceleration and characterization with the petawatt-femtosecond class Laser VEGA-3 at CLPU

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We report on the first proton acceleration experiment with the PW-class Laser at CLPU¹. The experiment has been carried out by focusing VEGA-3 laser onto solid foils with different thickness and peak intensities. Protons with a broadband energy spectrum have been accelerated via Target Normal Sheath Acceleration^{2,3} and its maximum energy has been optimized scanning the driving laser pulse duration. Several high-repetition-rate diagnostics have been used in parallel to measure and characterize the proton beams. The results are in consistence with the predictions reported by the theoretical models^{2,4,5}. This commissioning completes a further milestone of the development of European PW-class laser systems.

References

¹<https://www.clpu.es/en>

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