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Laser-driven ion acceleration with ultra-thin targets

Laser-driven plasma accelerators can potentially produce proton and ion beams of very high quality, which could be utilised in a wide range of applications including proton radiography and hadron therapy.

Important aspects of the interaction of petawatt lasers with ultrathin foils that affect the ion acceleration process will be reviewed and some preliminary results from experimental campaigns in the ASTRA-Gemini and VULCAN laser systems of the Central Laser Facility (Didcot, UK) will be presented.

Furthermore estimations for the capabilities of the future VEGA laser system of the CLPU (Salamanca, Spain) will be given.

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