## **Final Conference CS3**



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## Laser-acceleration of energetic ions

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Beam optimization of laser-accelerated protons is a crucial point for the development of applications in various areas. Several directions need to be pursued, namely (i) optimization of the high-energy end of the spectrum e.g. for dense plasma radiography, (ii) optimization of the low-energy end of the spectrum e.g. for isochoric heating of matter, (iii) enhancement of laser-to-protons conversion efficiency and reduction of divergence e.g. for medical applications or ion irradiation. We will present recent experimental results and simulations on these topics. New diagnostic capabilities open the way to precise time and space-resolved measurement of laser-acceleration of protons. We will show that high-energy protons in the can be enhanced using low-density plasmas or special targets, and discuss applications taking advantage of the unique characteristics of those beams.

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