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Diagnostic and dosimetry solutions for laser-driven ion beams: preliminary results

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The extreme and peculiar features of laser accelerated ion beams, (like the wide energy and angular distribution and the instability), make them actually not directly suitable for multidisciplinary applications. In this contest the ELIMED (ELI-beamlines MEDical and multidisciplinary applications), will be designed and realized by INFN-LNS and then installed in Prague within the 2017, in order to achieve stable laser-driven output beams for multidisciplinary applications. The beamline transport section will be composed of five permanent quadrupoles and an energy selector. The quadrupoles, located just few centimeters downstream the target, will be able to collect the particles with an energy from 3 MeV/u to 60 MeV/u, reduce the angular divergence of the beam and inject the particles in the energy selection system. The design is based on a standard trapezoidal Hallbach array allowing a more versatile focusing and an high transmission efficiency. ....

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