

Radiation protection of a proton beamline at ELI Beamlines

Wednesday, 7 September 2016 18:00 (20 minutes)

ELI Beamlines is a new EU funded laser facility, located near Prague, Czech Republic. It will use laser-driven plasma sources to accelerate particles. It will host a dedicated proton beamline designed to reach energies up to 250 MeV. This beamline could be exploited to study possible future medical application of laser-driven beams.

The first part of this paper introduces the beamline and the corresponding source terms. The complete set-up including the commissioned beam transport is briefly described.

The second part of the paper details the evaluation of the ambient dose equivalent inside the experimental halls and the approaches to protect people (shielding, beam dump). The estimated ambient dose equivalent and technical aspects of radiation shielding that are particular to laser facilities are discussed further in the paper.

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Session Classification: New generation Ion Acceleration Beamlines