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Experiment for energy deposition in a target

Material damage levels for LHC intensities and energies are in general derived from computer simulations calculating static energy deposition. A dedicated experiment was carried out to cross-check the validity of this approach: With a 450GeV proton beam extracted from the SPS in TT40, material was deliberately damaged in a controlled way. A simple geometry was chosen for the high-Z target comprising several typical materials that are used in the LHC, such as stainless steel and copper. Results of the simulations are presented and compared with the experiment.
General requirements to predict beam induced damage levels with computer simulations are discussed.

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