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## Energy deposition simulations for a damage experiment with superconducting sample coils

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An experiment to study damage caused by the impact of 440 GeV/c protons on sample superconducting race-track coils made from NbTi and Nb<sub>3</sub>Sn strands was recently carried out at CERN's HiRadMat facility. This paper reports on the detailed Monte Carlo simulations performed with FLUKA and Geant4 to evaluate the energy deposition of the 440 GeV/c proton beam on the sample coils positioned in the experimental setup, using the measured beam parameters during the experiment. The measured hotspot temperatures and temperature gradients reached in the sample coils are presented and compared with the simulations. In addition, comparisons between the simulation results from FLUKA and Geant4 are discussed in detail.

### Funding Agency

### Footnotes

### I have read and accept the Privacy Policy Statement

Yes

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