Status of energy deposition studies at IR7

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Status of energy deposition studies at IR7

- Preliminary results for the straight section with the corrected beam.
- W vs. Cu jaws, study of the low-energy photons.
- Comparison between A7h and B7h
  - Primary halo
  - Tertiary halo (preliminary)
Preliminary results for the straight section with the corrected beam.

Total energy deposited in the MBWB6L:
Corrected beam: 28.4 kW
(Uncorrected beam: 37 kW)

Energy deposited in the TCSGA6L1:
Total energy: 20 kW
(Uncorrected beam: 22.6 kW)
Energy in both jaws: 5.1 kW
(Uncorrected beam: 1.02 kW)

Hot spot with no physical meaning, due to the beam error
Comparison between A7h and B7h

Tertiary halo

Part of the beam halo will interact with the absorbers and generate a hadronic shower => energy deposition in the cold magnets

The contribution from B7h will be 15% higher than A7h, but still at an acceptable level.

Peak values in MQ7:

A7h => 0.22 mW/cm^2 (*)
B7h => 0.26 mW/cm^2 (*)

(*) values refer to 1 proton interacting out of 10,000 lost in TCP. Error is below 6%.
Comparison between A7h and B7h.

- Simulations were run with corrected beam.
- The accuracy of the magnetic field in the MB was improved.
- Low energy photons were fully simulated.