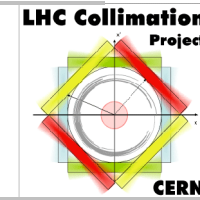

Status of energy deposition studies at IR7



Collimation Meeting

09-05-2005



A. Ferrari, M. Magistris, M. Santana, V. Vlachoudis

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:

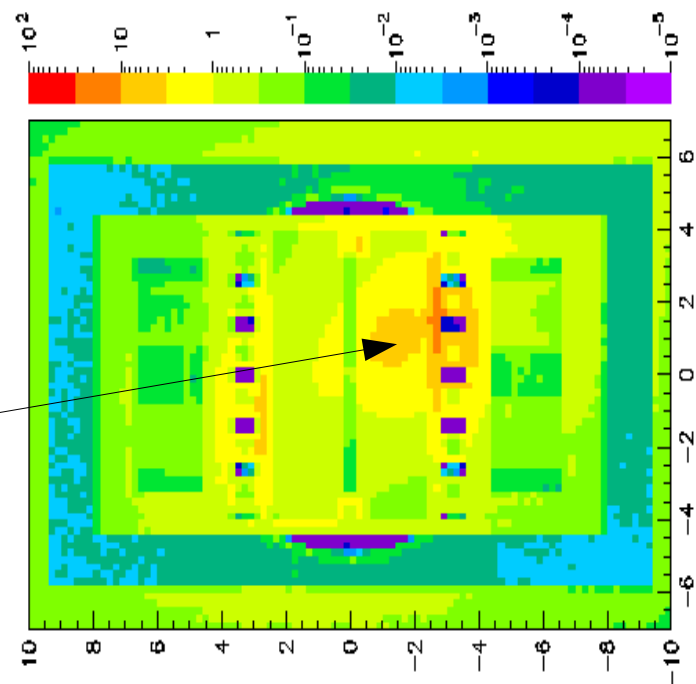
Total energy: 20 kW

(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

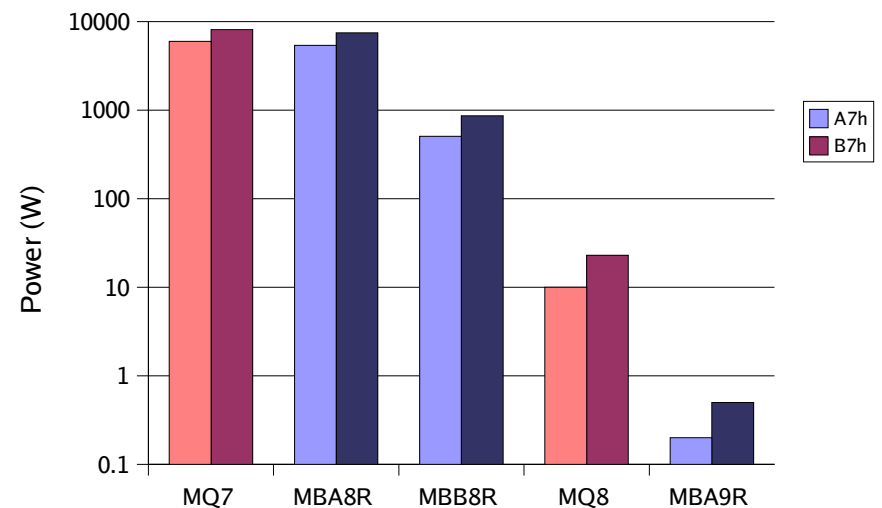
The contribution from B7h will be 15% higher than A7h, but still at an acceptable level.

Peak values in MQ7:

A7h => 0.22 mW/cmc (*)

B7h => 0.26 mW/cmc (*)

Energy deposition in coils (W), total beam lost in the last absorber



(*) 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.

