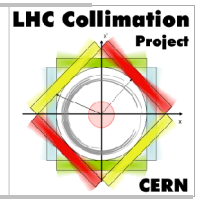
Status of energy deposition studies at IR7

Collimation Meeting
26-11-2004



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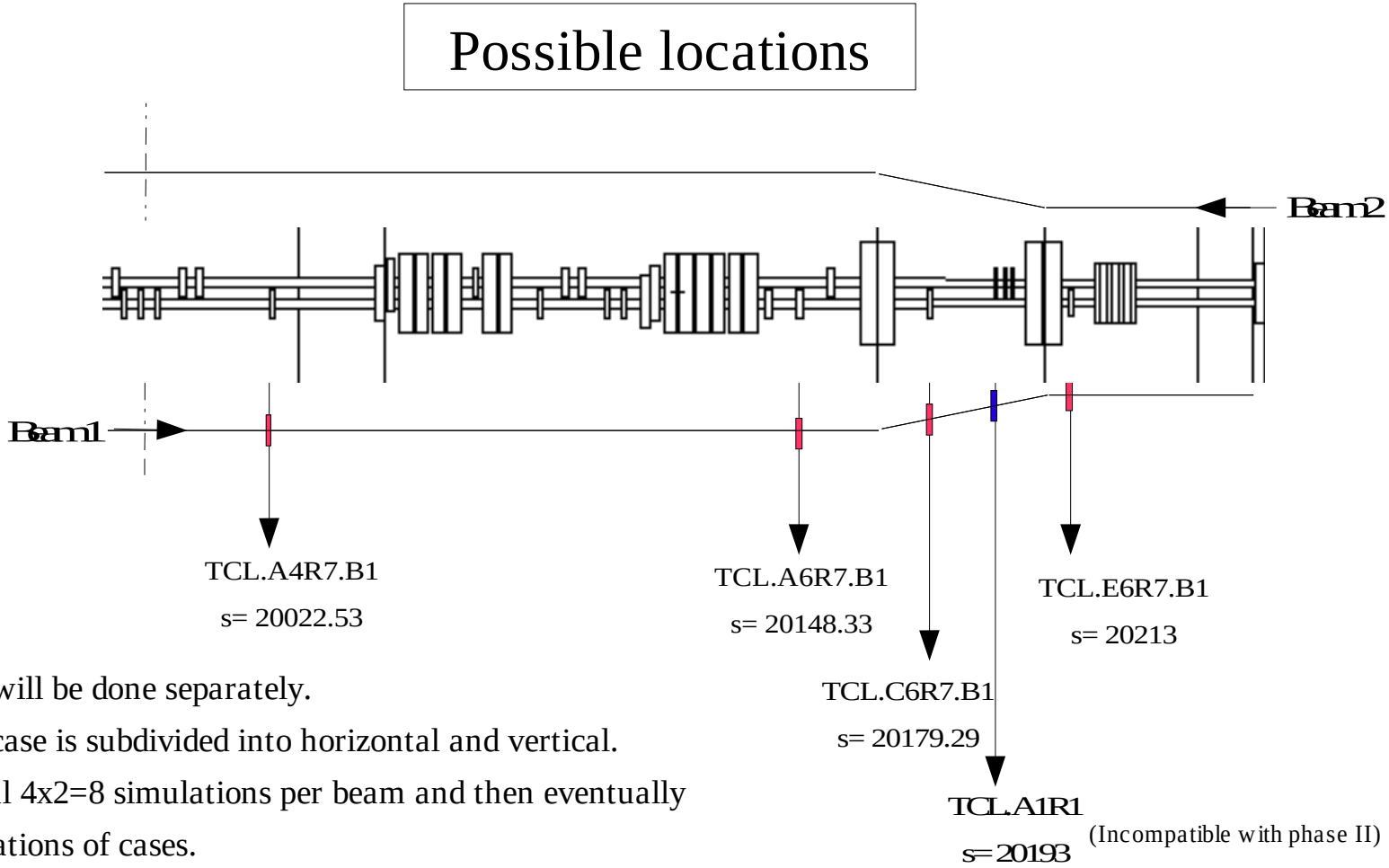
Status of energy deposition studies at IR7

- Geometry of IR7 curved section.
  - IR7 Geometry implementation (review of geometry and methodology).
  - Dipoles.
- Preliminary results in the curved section.
  - Heat in the dipoles.
  - Heat in the MQs.
- Heat on the TCS and MQW flanges.
  - Heat on the TCS flanges.
  - Heat on the MQW flanges.
- Next steps.

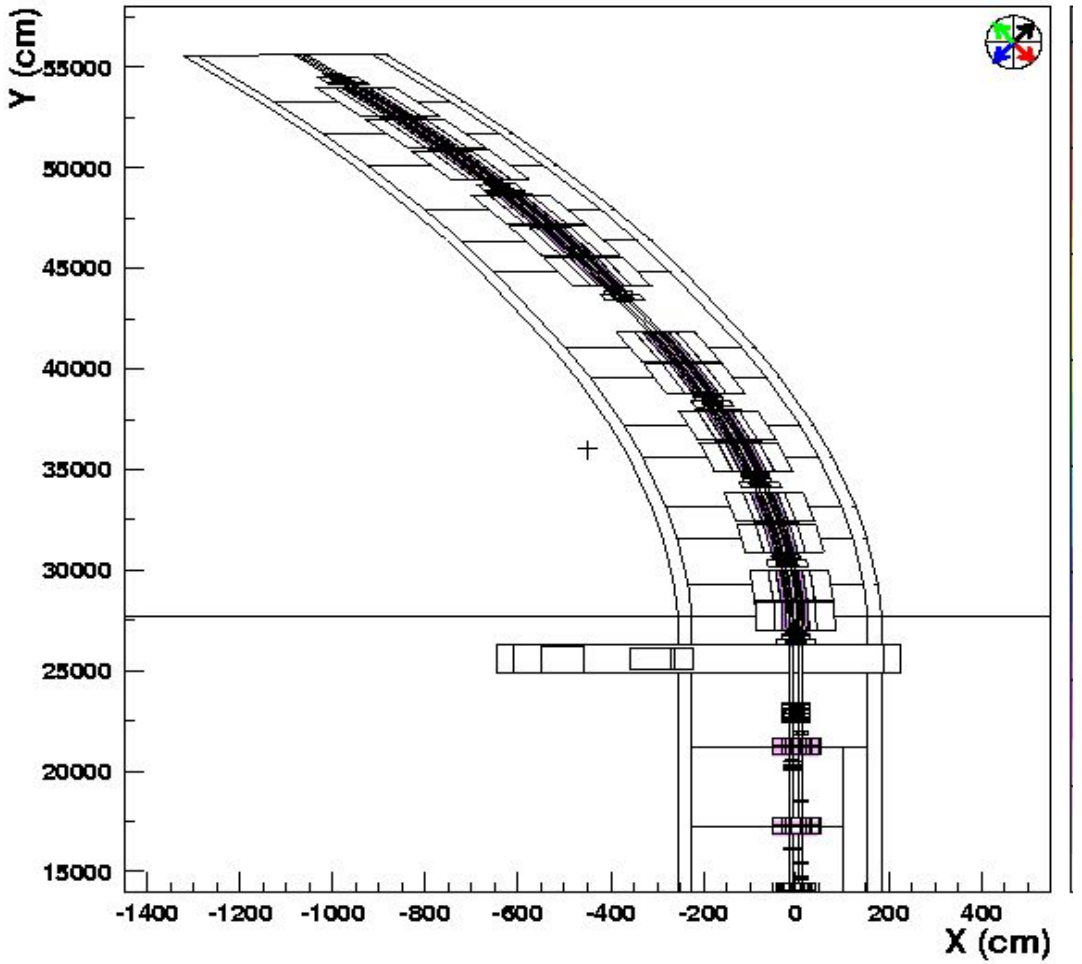
Implementation of vertical and horizontal absorbers.



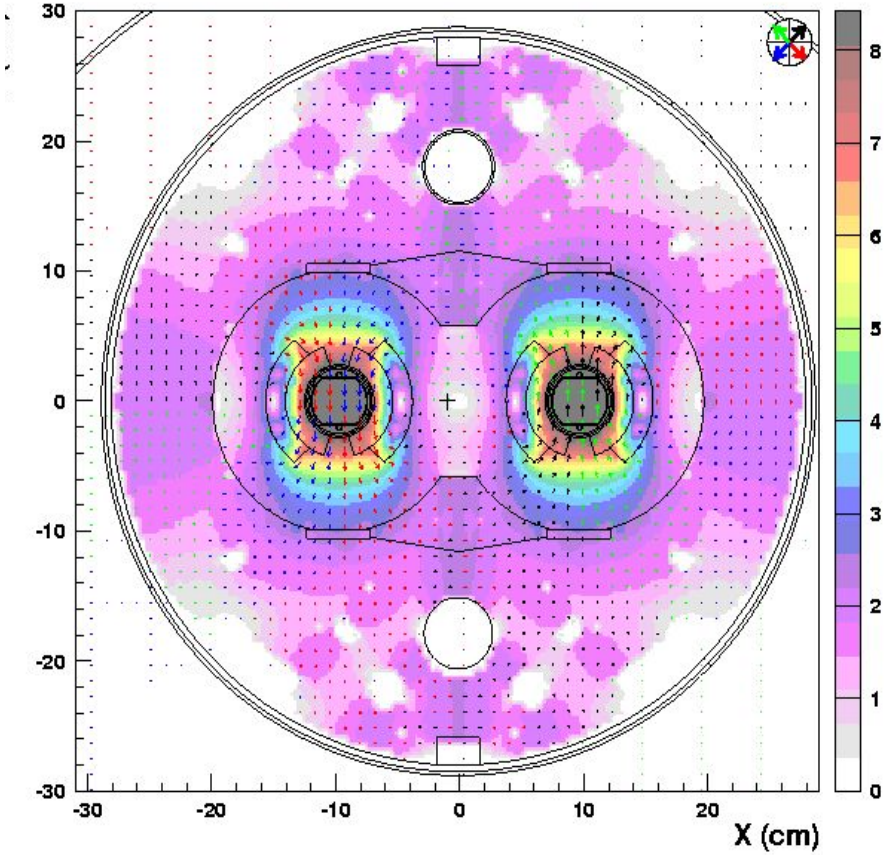
- Tests will be done separately.
- Each case is subdivided into horizontal and vertical.
- In total 4x2=8 simulations per beam and then eventually combinations of cases.

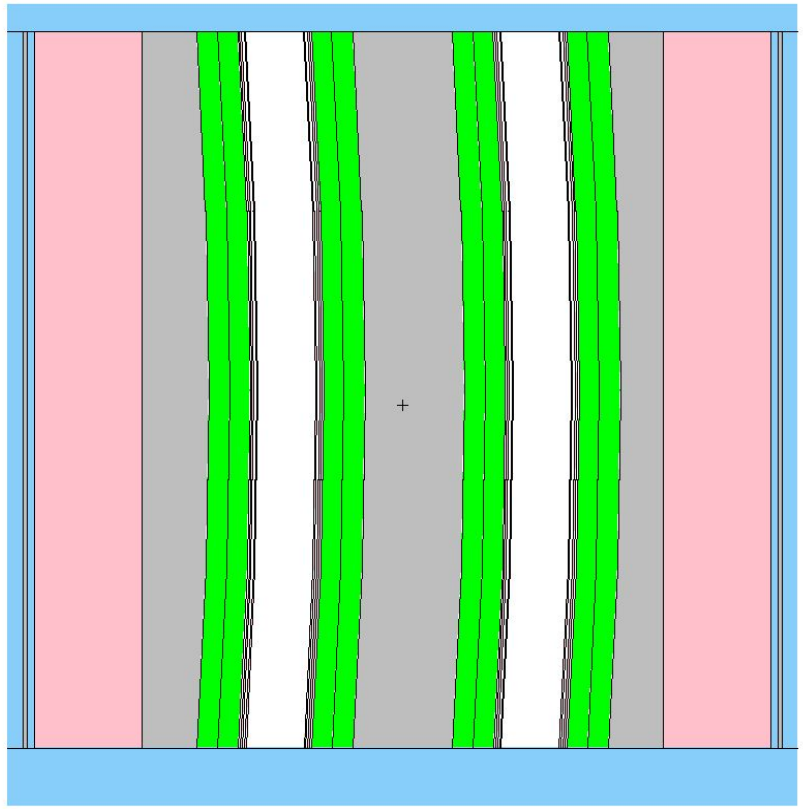
IR7 curved region.

- Tunnel, pipes, etc have been chopped, rotated and merged.
- Prototypes are allocated with the according rotation.
- The dipole is made of four straight sections, to accommodate the trajectory.

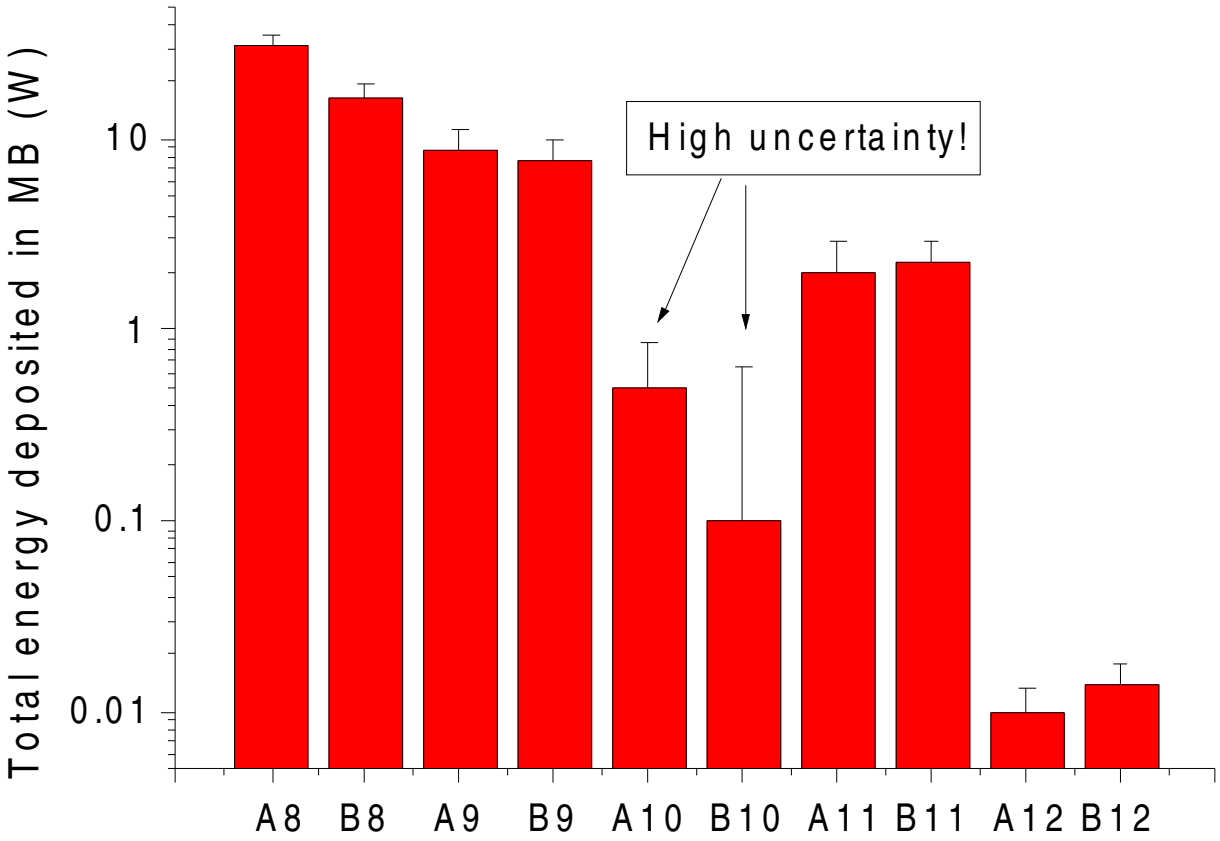


Dipoles.





Energy deposition in the cold dipoles.

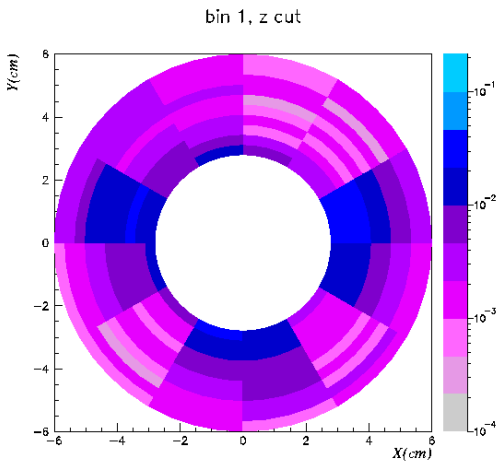


Average energy density in the coils:

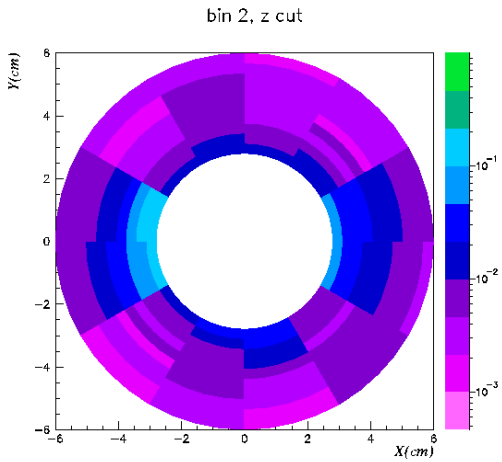
MB.A8:
0.3 mW/cm3 +- 20%

MB.B8:
0.15 mW/cm3 +- 46%

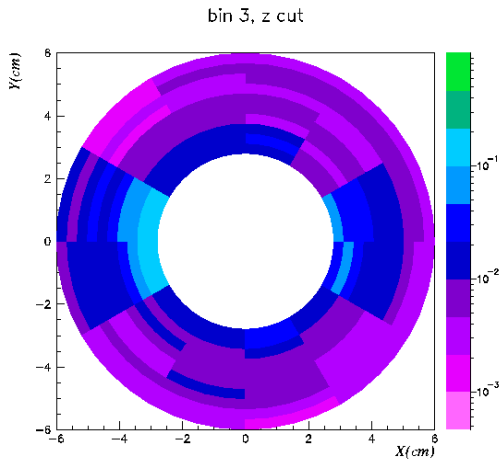
Radiation on the MQ's



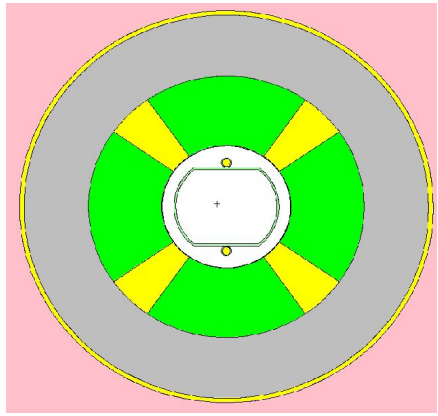
1W +- 0.5 W



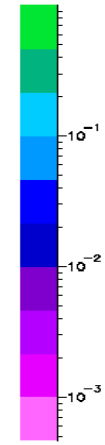
1W +- 0.5 W



0.01W +- 0.01 W

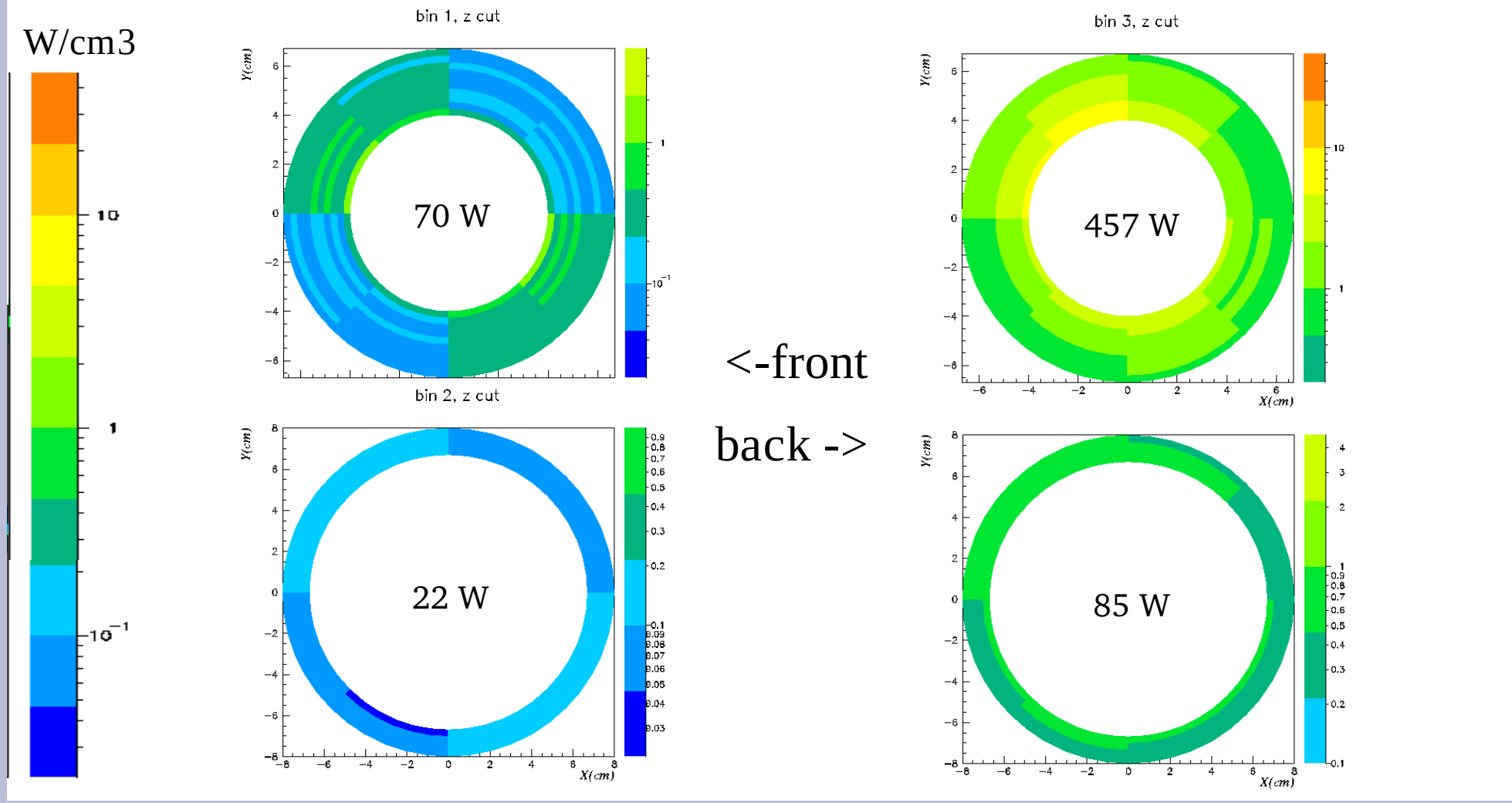


mW/cm3



Energy deposition in the TCS flanges.

TCSGA6L1



Energy deposition in the MQW flanges.

MQWAE5L