

A7 absorber: before or after
the chicane?
UJ76: no shielding - new plots

Katerina Tsoulou

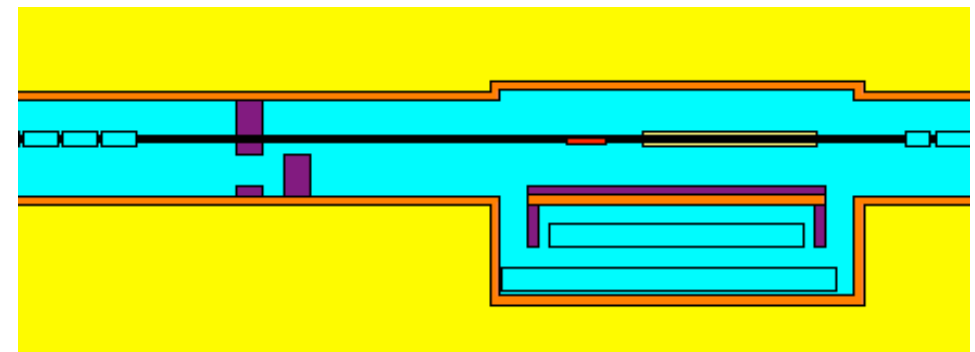
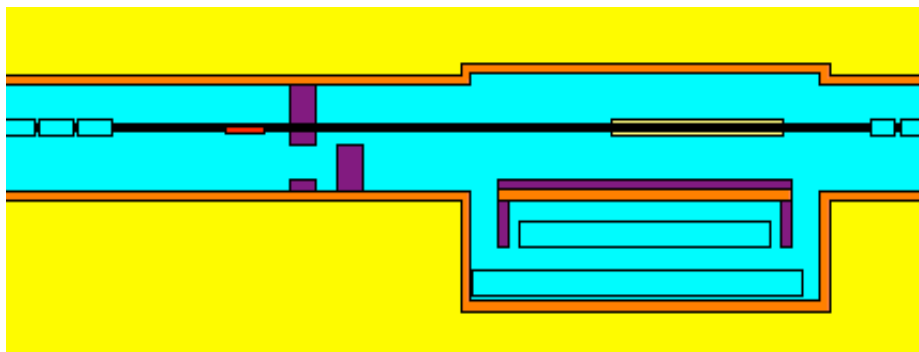
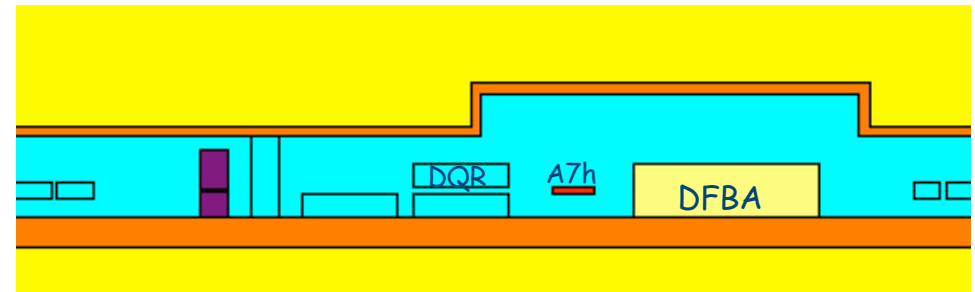
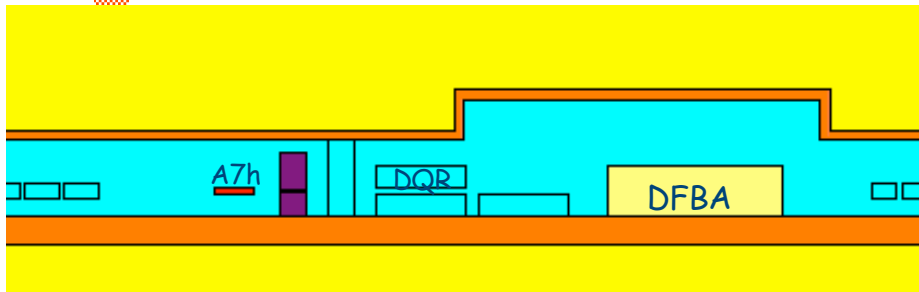
Alfredo Ferrari, Vasilis Vlachoudis

51st Collimation Working Group Meeting

Possible Positions of A7 absorber

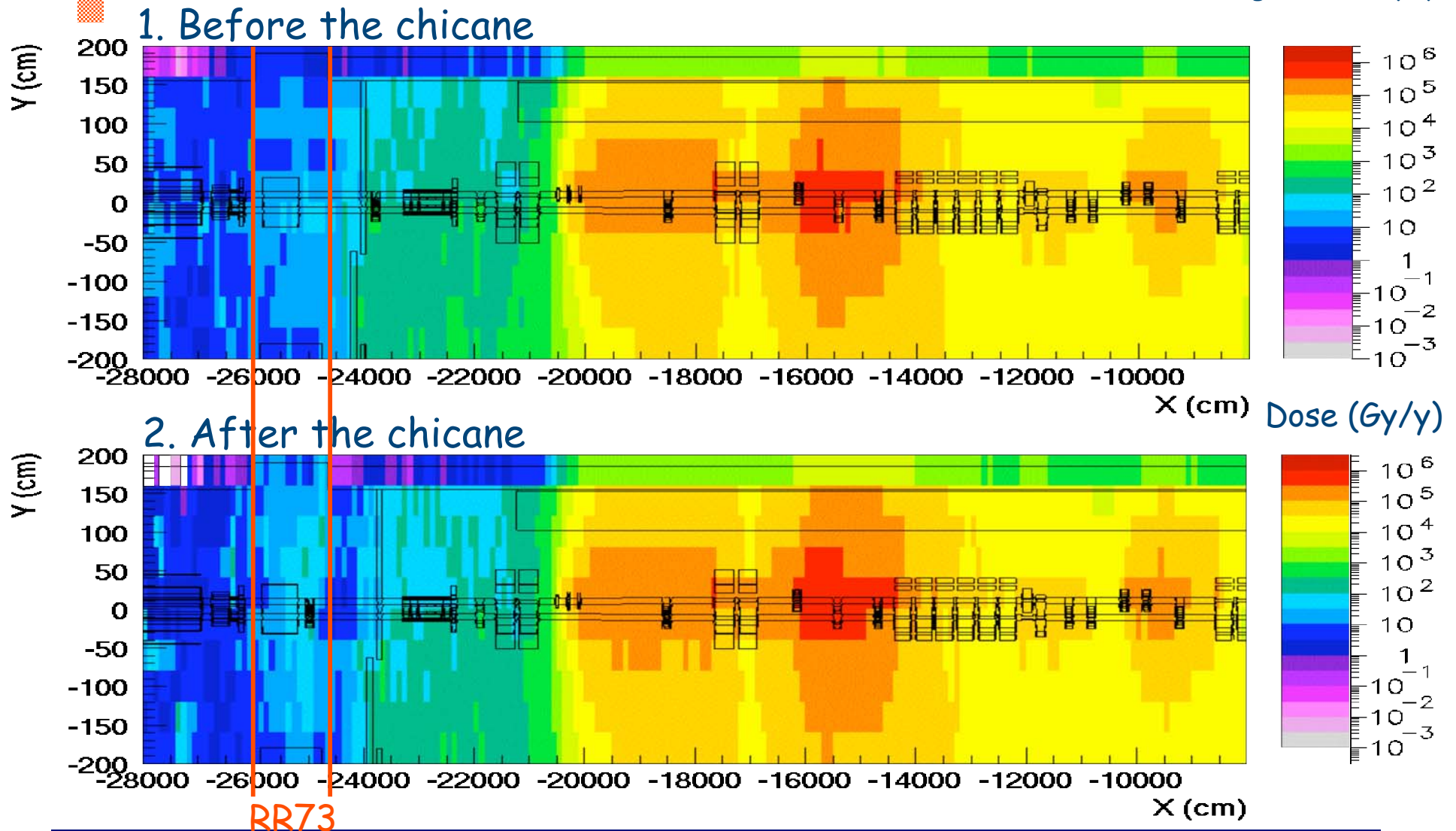
1. Before the chicane

2. After the chicane



Dose along the tunnel (left side)

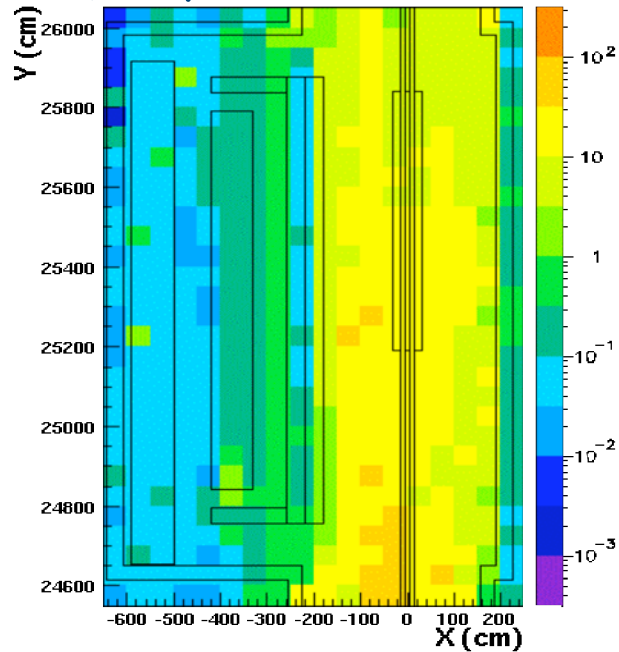
Scaling: $4.1 \cdot 10^{16}$ p/y



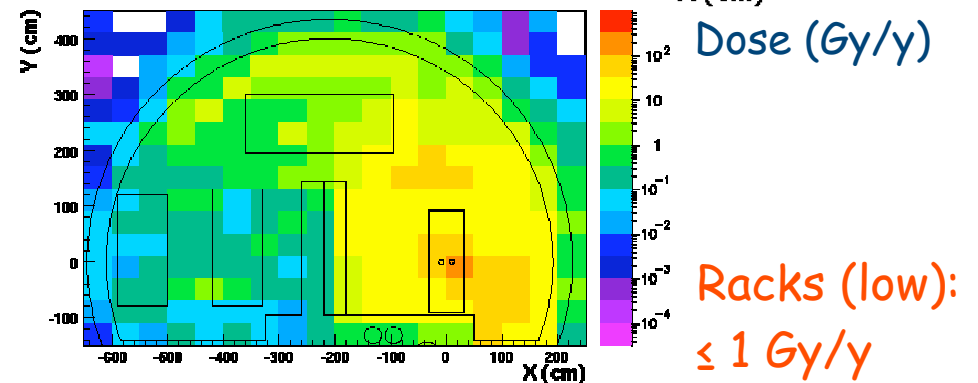
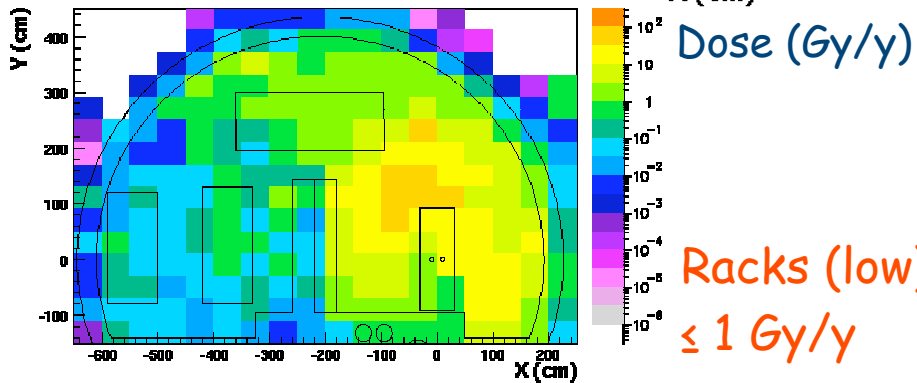
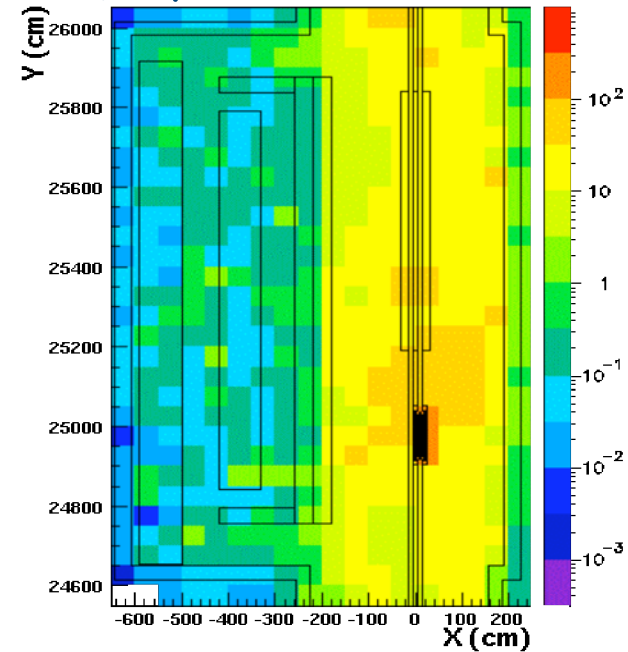
Dose in RR77

Scaling: $4.1 \cdot 10^{16}$ p/y

1. Before the chicane



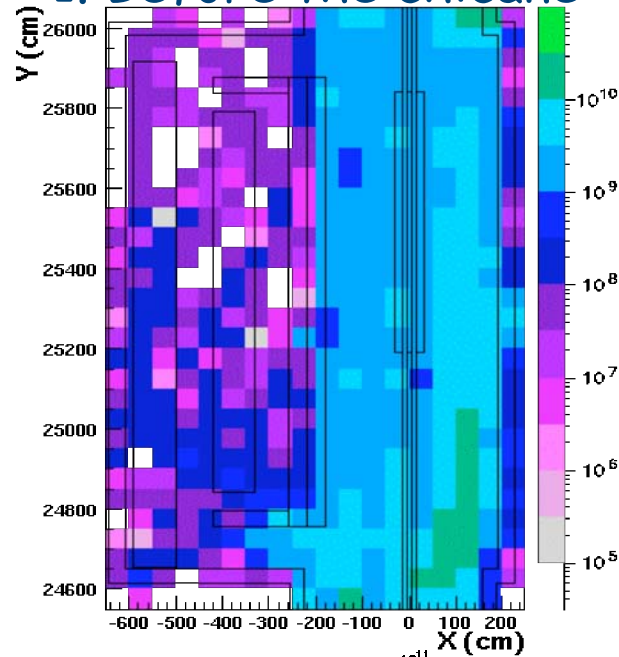
2. After the chicane



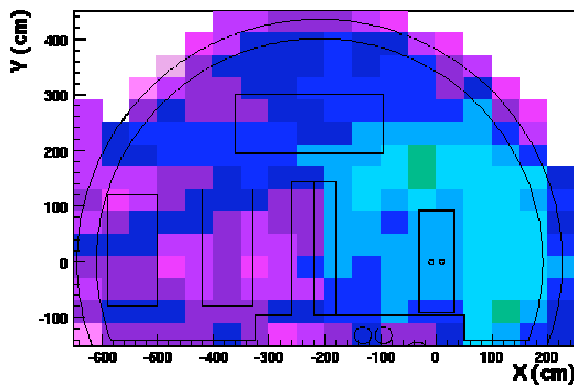
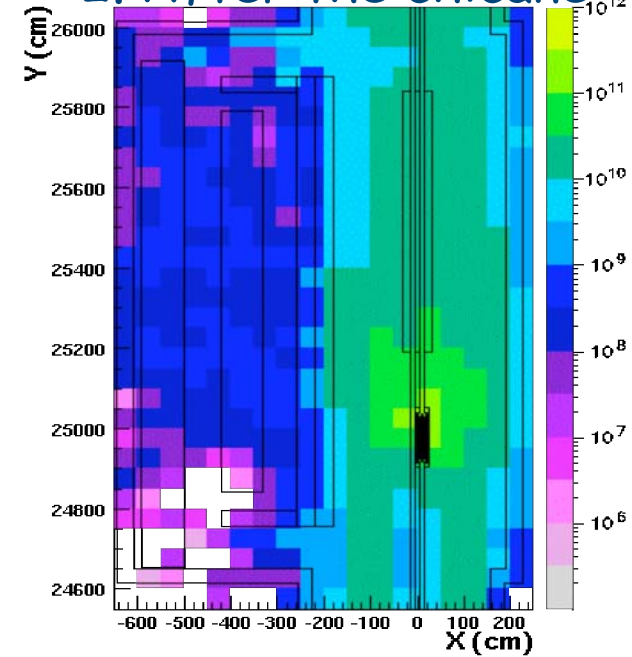
Hadrons >20MeV in RR77

Scaling: $4.1 \cdot 10^{16}$ p/y

1. Before the chicane

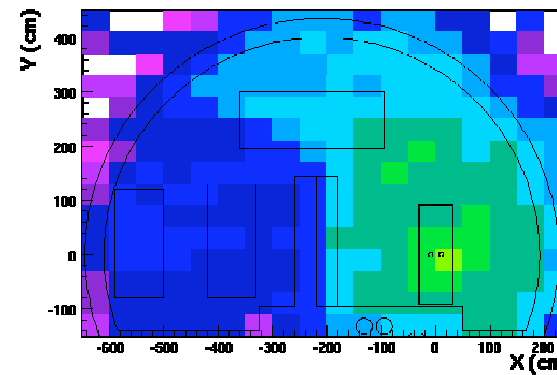


2. After the chicane



Hadrons >20MeV
(cm^{-2}/y)

Racks (low):
 $\sim 7 \cdot 10^7 \text{ cm}^{-2}/\text{y}$



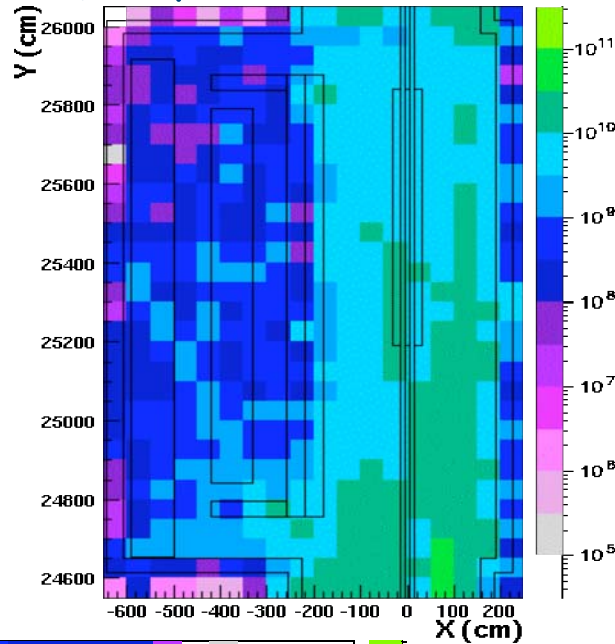
Hadrons >20MeV
(cm^{-2}/y)

Racks (low):
 $\sim 2 \cdot 10^8 \text{ cm}^{-2}/\text{y}$

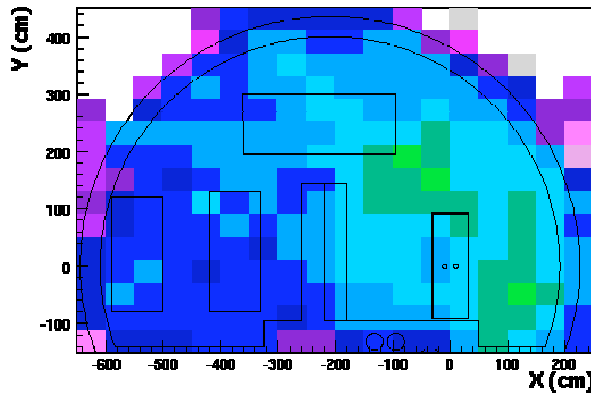
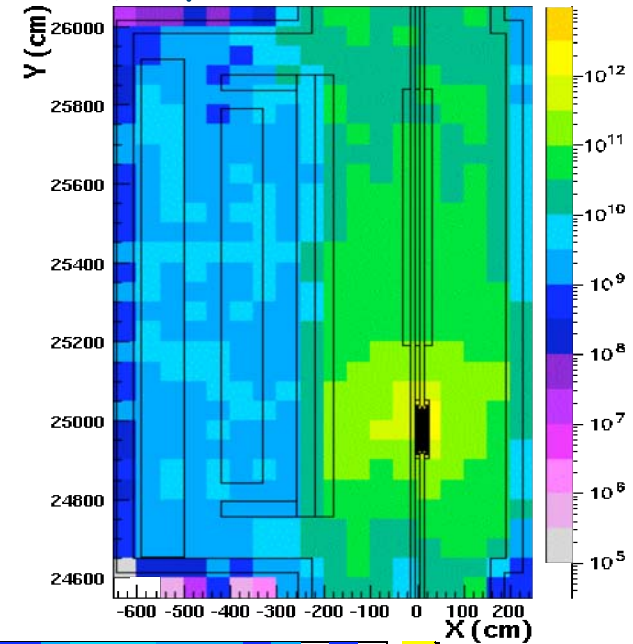
1MeVeq fluence in RR77

Scaling: $4.1 \cdot 10^{16}$ p/y

1. Before the chicane

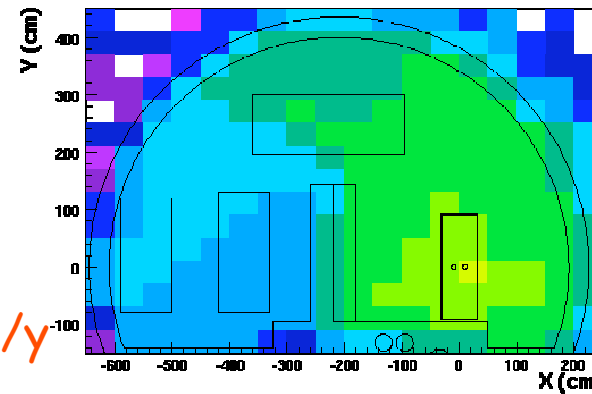


2. After the chicane



1MeVeq flux
(cm^{-2}/y)

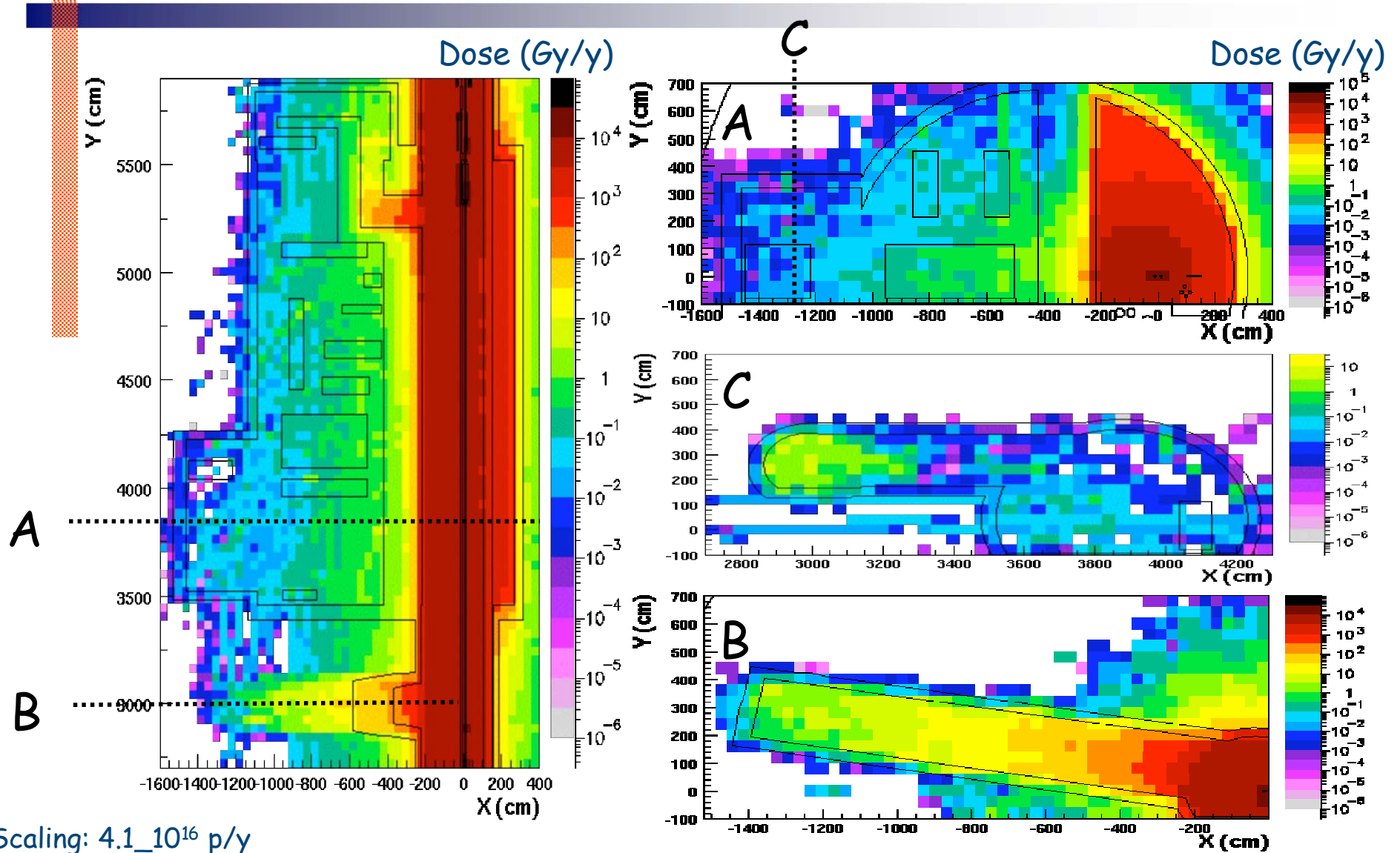
Racks (low):
 $\sim 5 \cdot 10^8 \text{ cm}^{-2}/\text{y}$



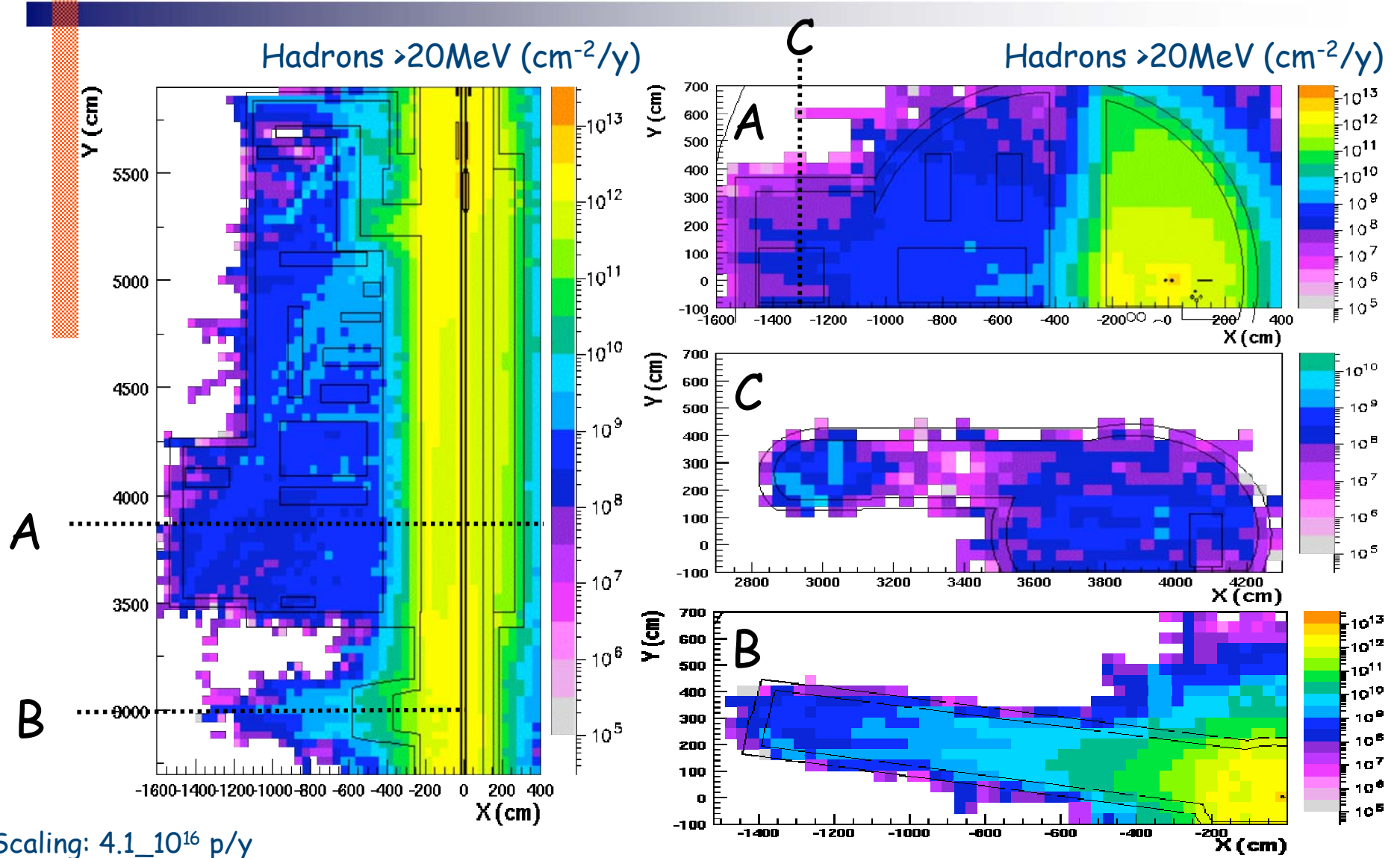
1MeVeq flux
(cm^{-2}/y)

Racks (low):
 $\sim 3 \cdot 10^9 \text{ cm}^{-2}/\text{y}$

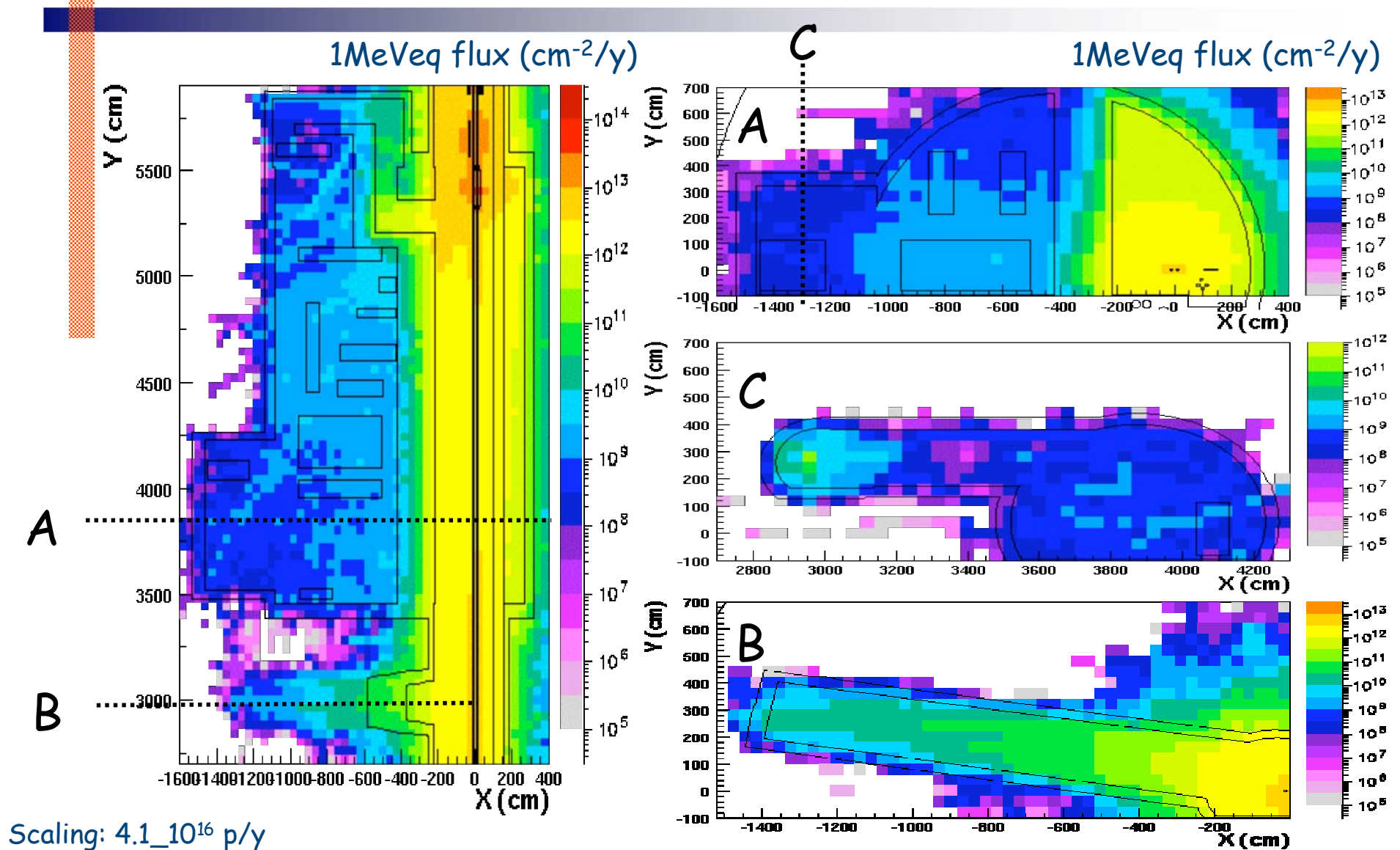
Dose in UJ76



Hadrons >20MeV in UJ76



1MeVeq fluence in UJ76



Conclusions

- Not a great difference in dose between Before and After chicane case for the position of A7 absorber ("Before" seems though a better case).
- Before chicane case gains a factor of ~ 3 for hadron fluxes.
- ➔ Suggestion: Install A7 before the iron shielding !
- Dose in UJ76 can reach a few Gy/y (near the wall).
- Take care of positions close to the TU76 ventilation gallery.
- TZ76 gallery is not in the geometry, but seems a "quiet" area.