First Results from IR7 simulation

Radiation levels in the regions UJ76/RR73/RR77

Case study: No Absorbers

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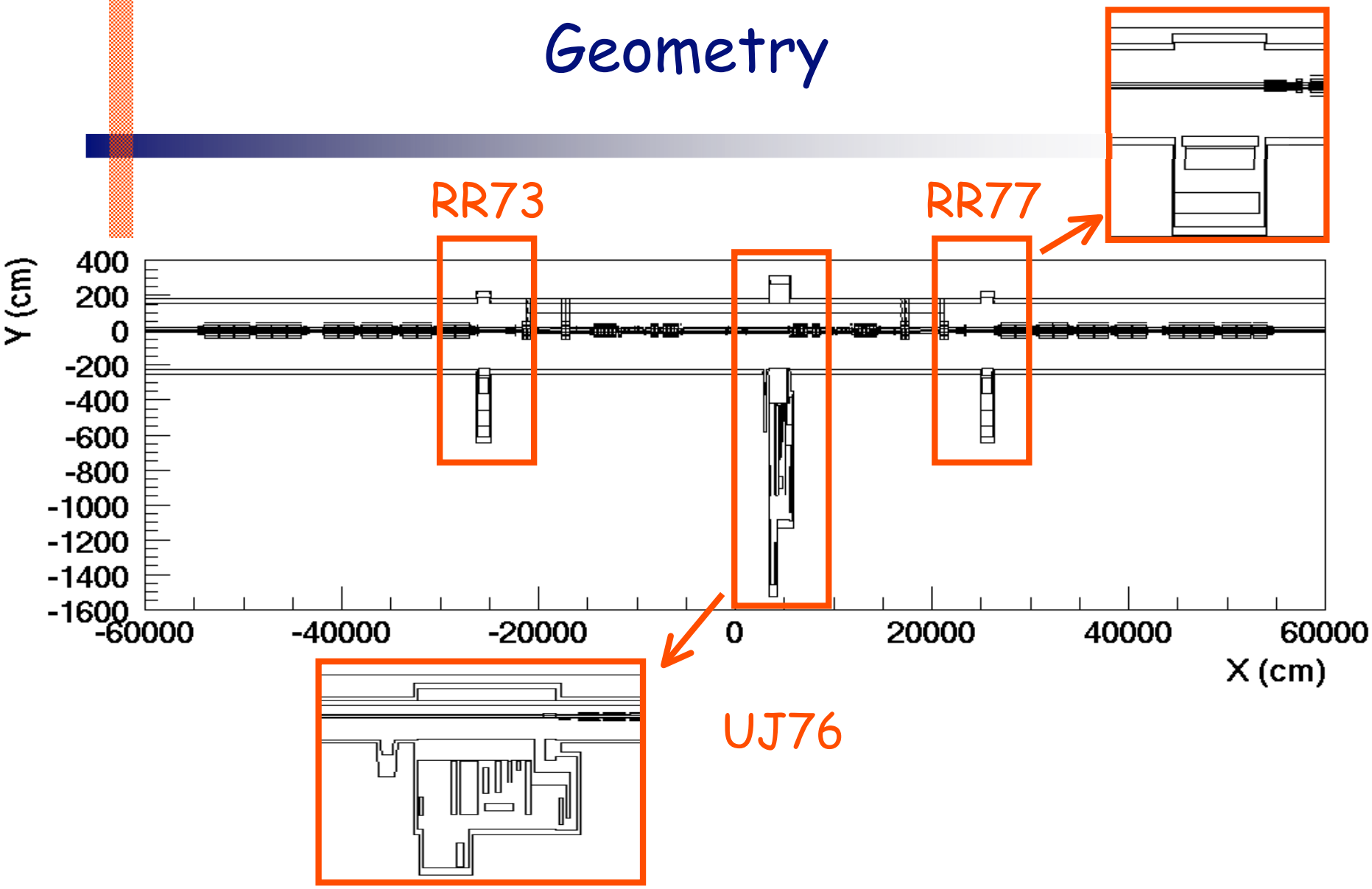
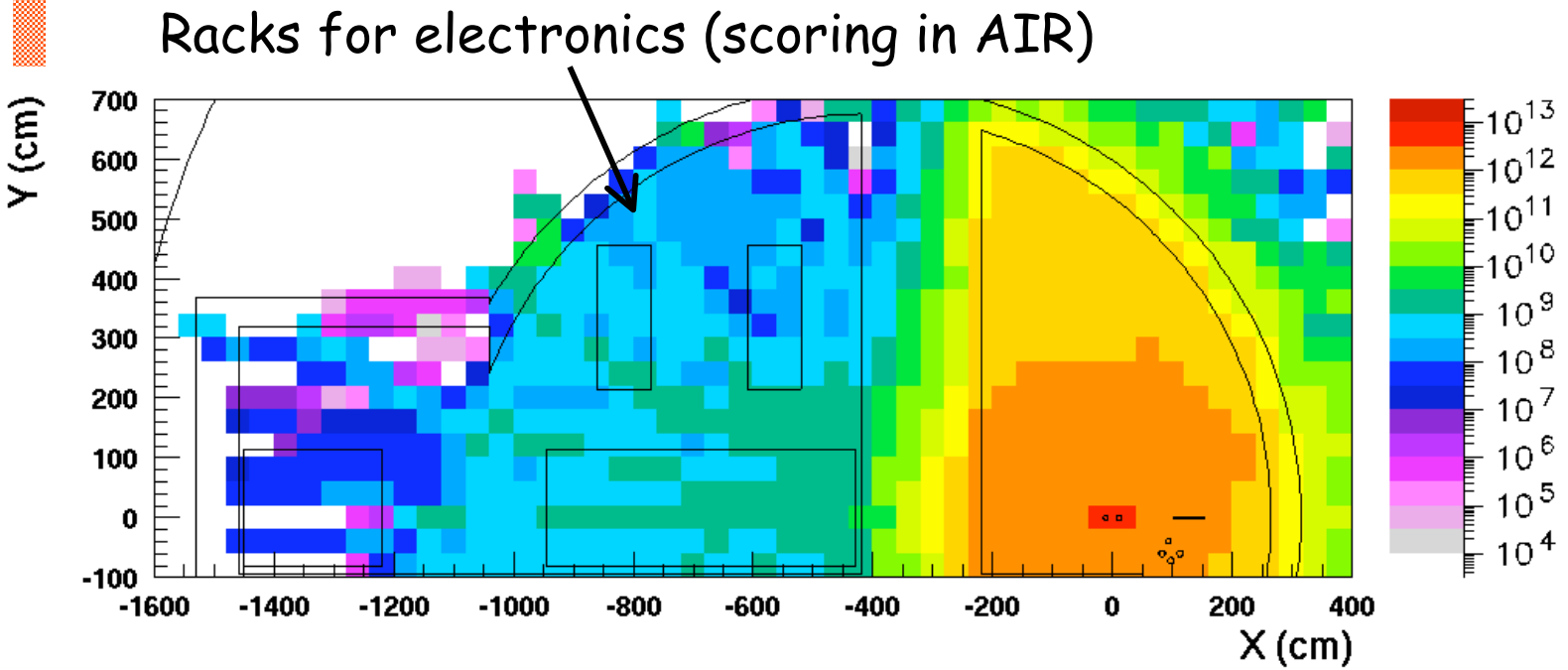
Geometry


RR73
RR77
UJ76
Y (cm)
X (cm)
400
200
0
-200
-400
-600
-800
-1000
-1200
-1400
-1600
-60000
-40000
-20000
0
20000
40000
60000

UJ76 – 1 MeV neutron eq. flux (cm^{-2}/y)



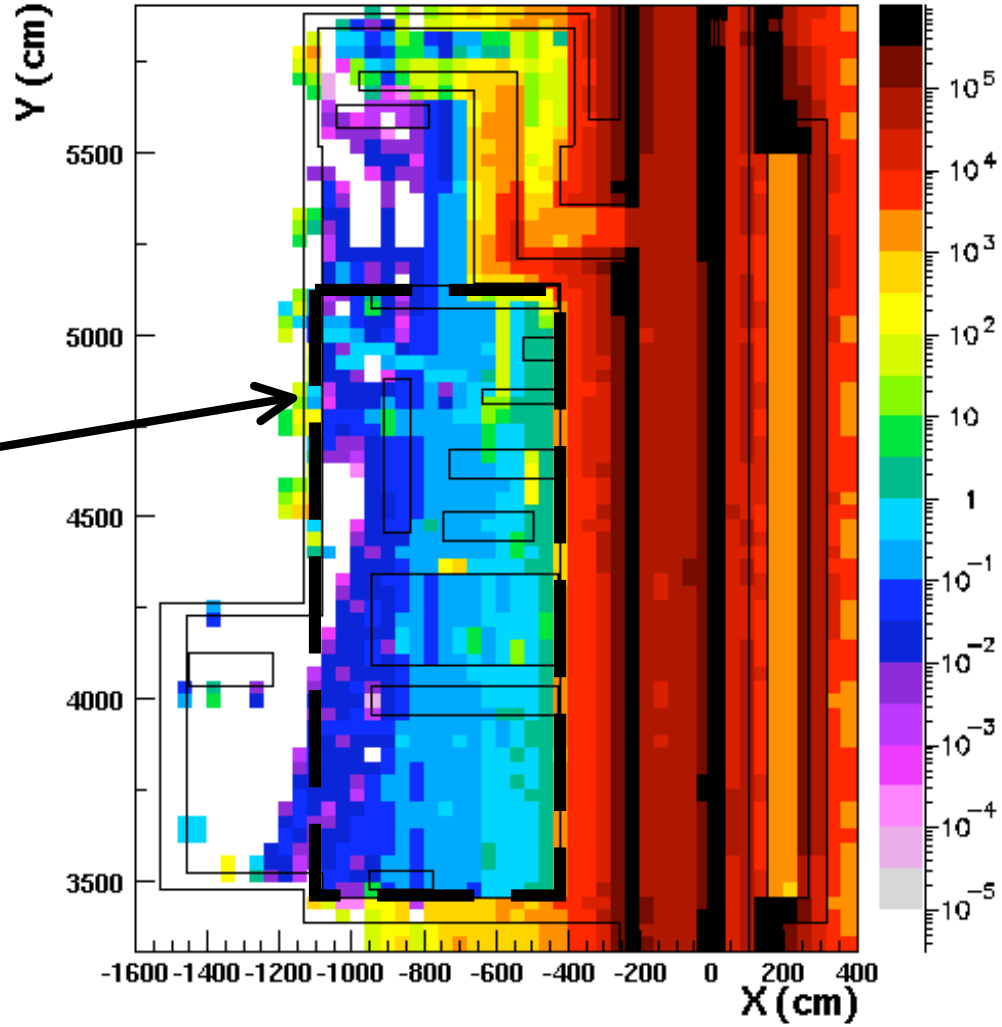
Not enough statistics to derive concrete conclusions for the exact radiation levels!

→ Good estimation for the order of magnitude of the fluxes expected at the place of LHC electronics.

UJ76 - Dose (Gy/y)

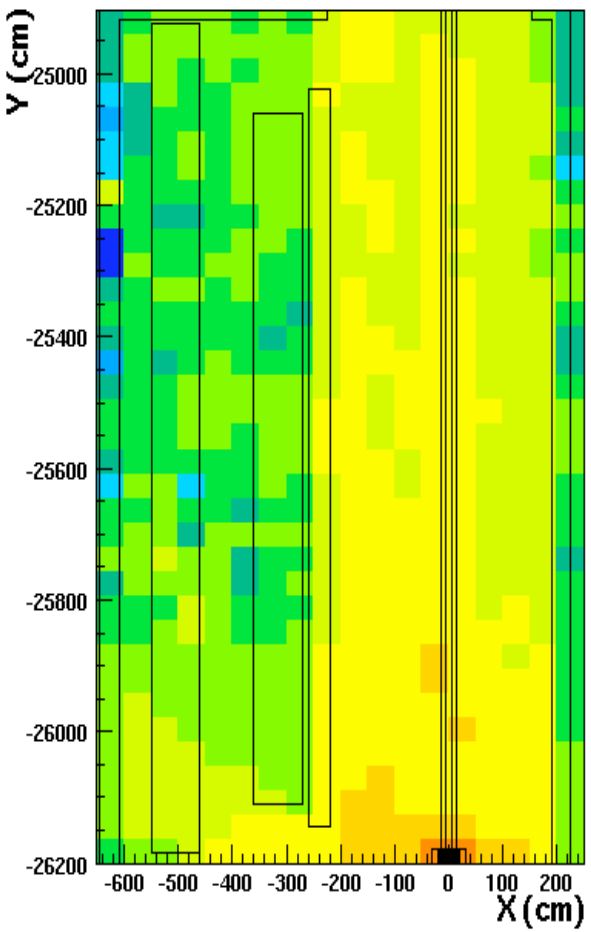
estimation for the AIR regions only !!!

LOOK ONLY HERE

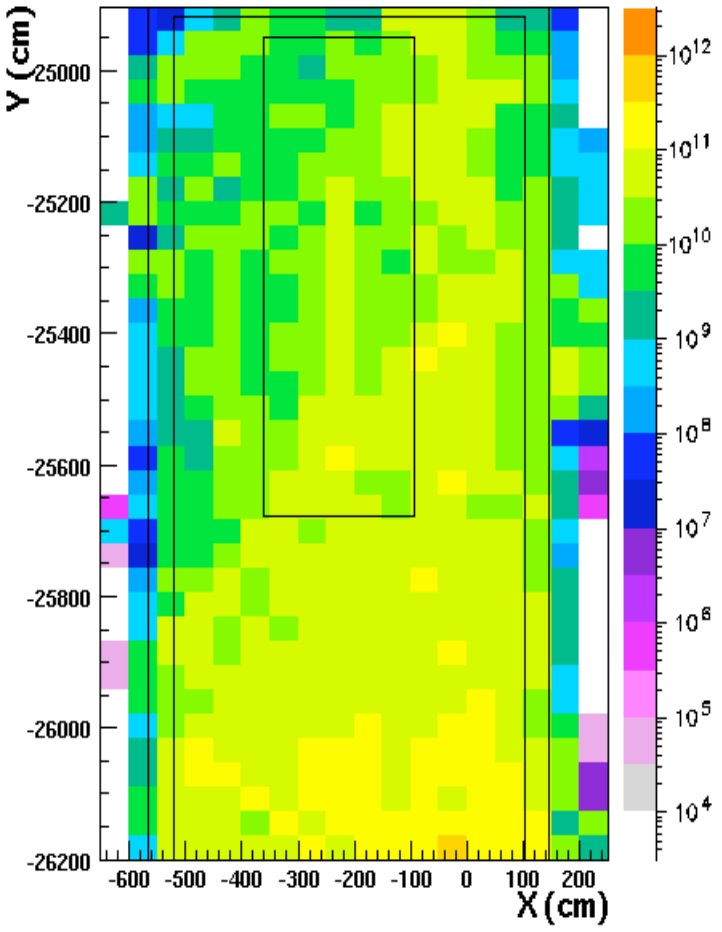


RR73 – 1 MeV neutron eq. flux (cm^{-2}/y)

BEAMLINE (LEVEL 0)



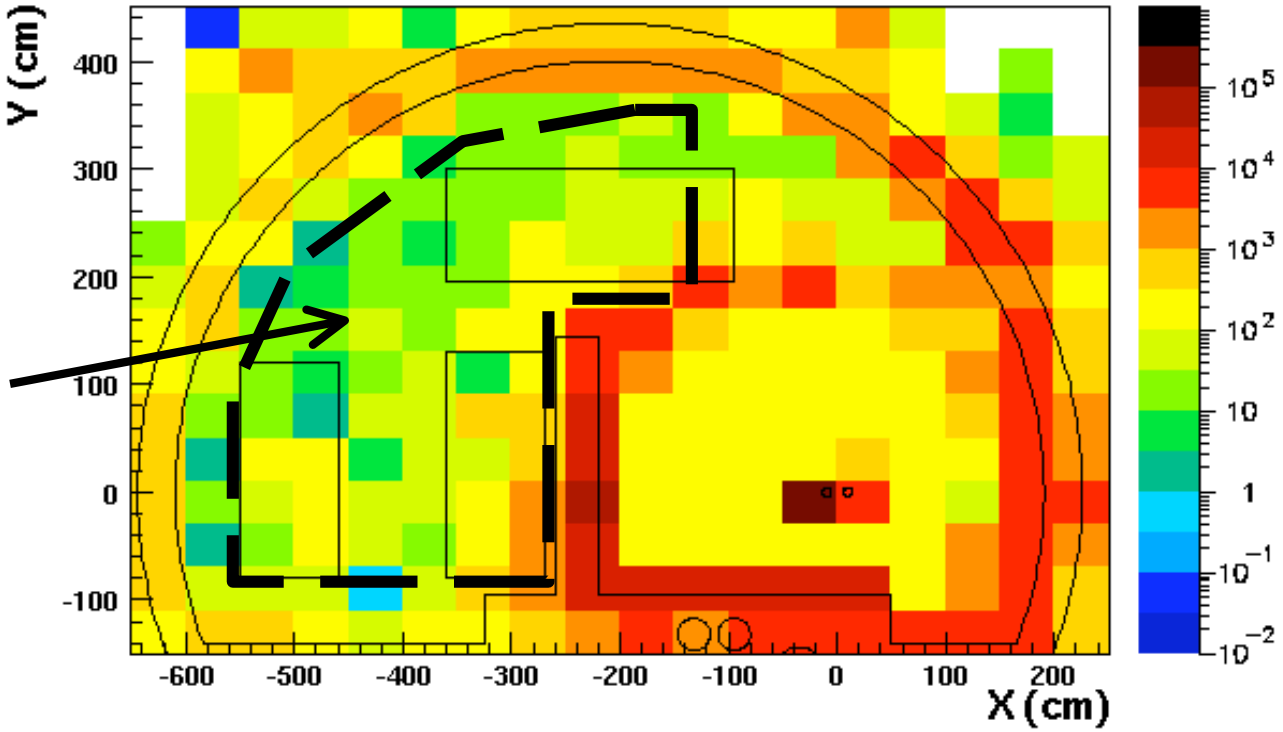
LOFT (LEVEL 1)



RR73 – Dose (Gy/y)

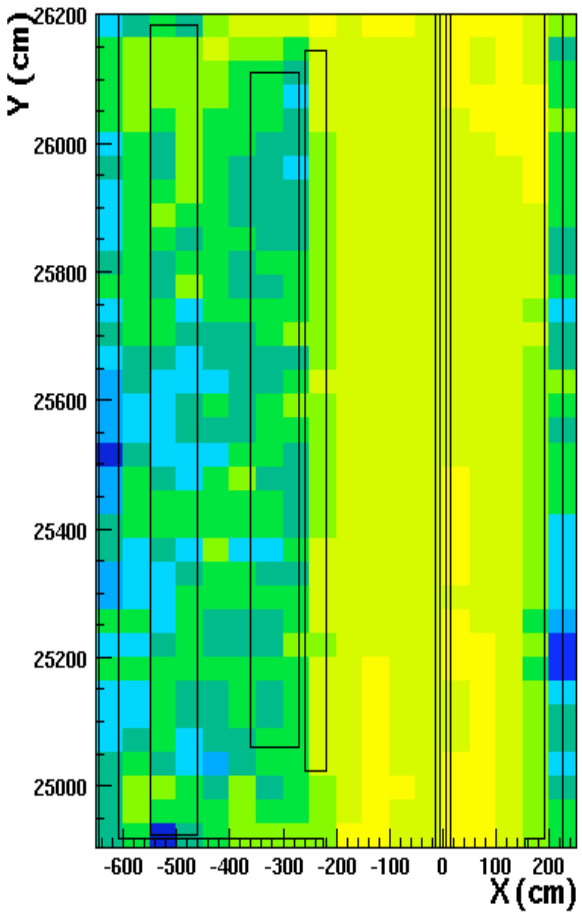
estimation for the AIR regions only !!!

LOOK
ONLY
HERE

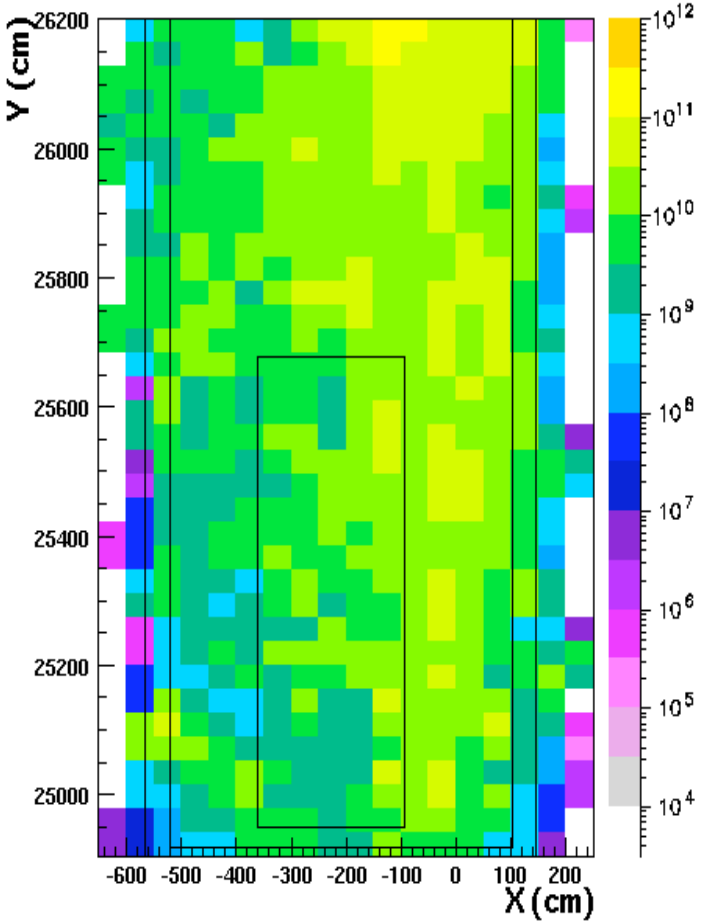


RR77 - 1MeVeq flux (cm^{-2}/y)

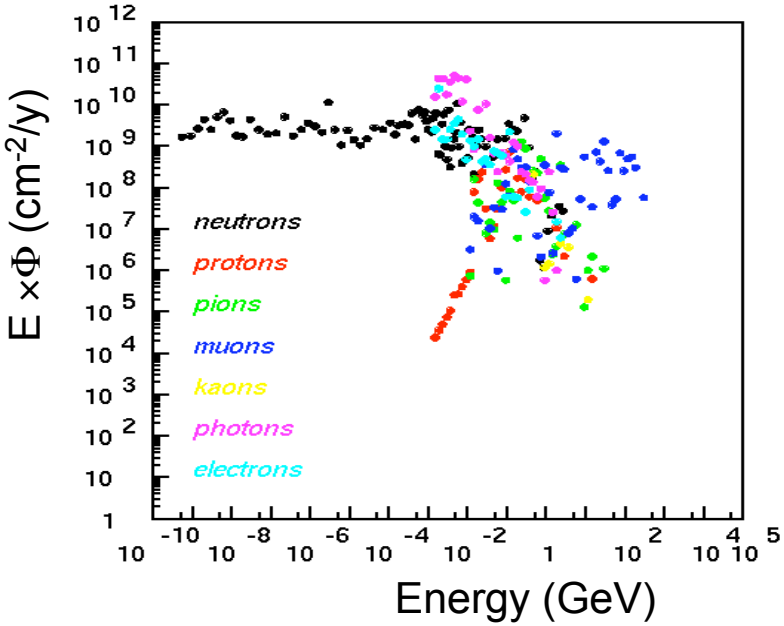
BEAMLINE (LEVEL 0)



LOFT (LEVEL 1)



RR73/77 – Particle Spectra & Mean Particle Flux



	Mean values at both levels (cm^{-2}/y)	
	1MeVeq.	Hadrons >20MeV
UJ76	1.8 E+09	9.4 E+08
RR73/77	1.7 E+10	6.6 E+09

Conclusions

- RR73/77 appear to be an order of magnitude hotter regions than UJ76
- We seem to have ~100 times more hadrons >20 MeV than the RRs in Point 1/5 (after special shielding!)

  [I. Baishev, Radiation levels in RR areas LHC Point 1/5, http://lhc-radwg.web.cern.ch/lhc-radwg/LHC_Radiation_Studies/RR_IB1404.pdf]
- Waiting for the 'WithAbsorbers' results…
- …and better statistics!