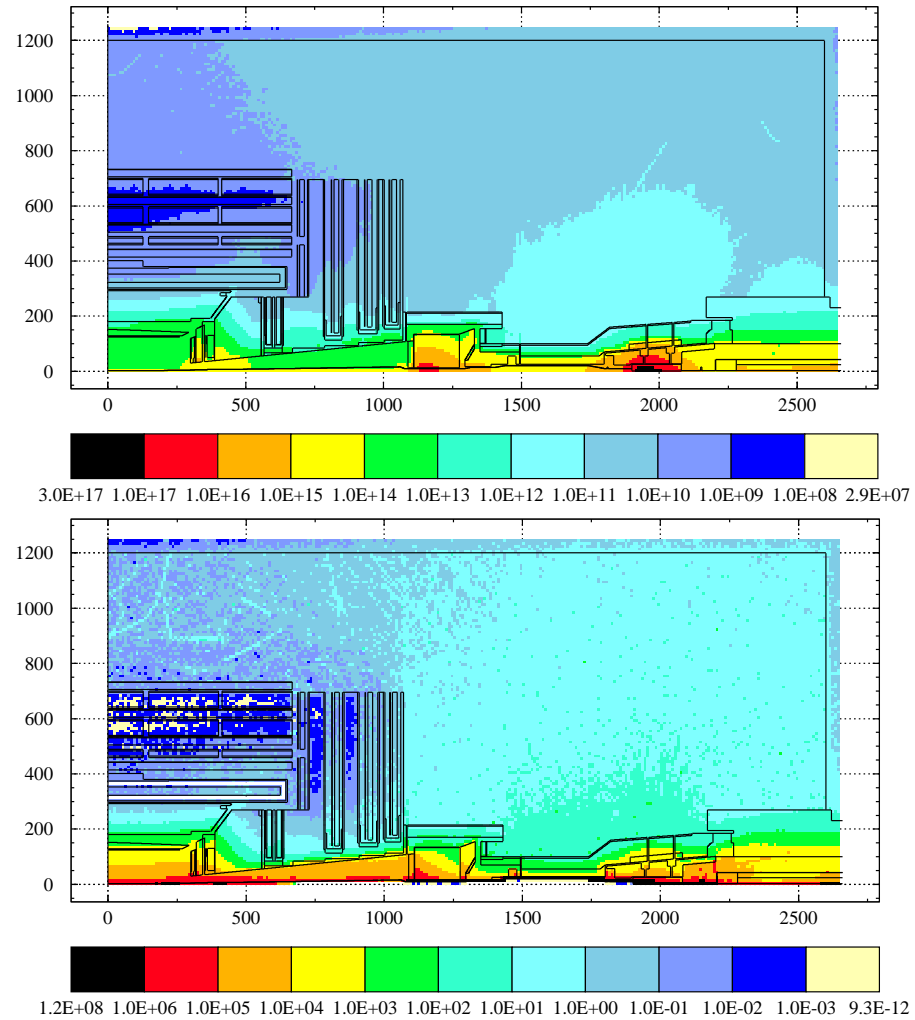
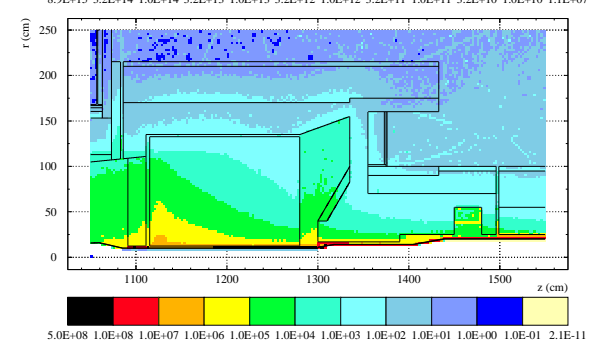
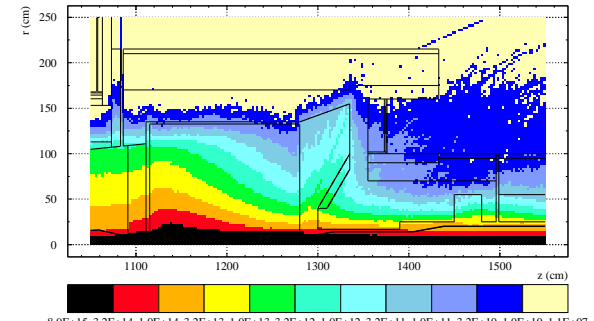
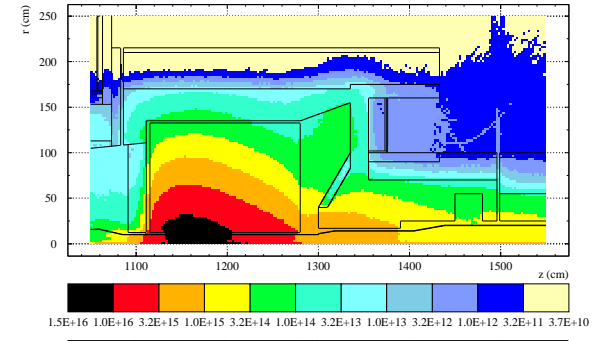
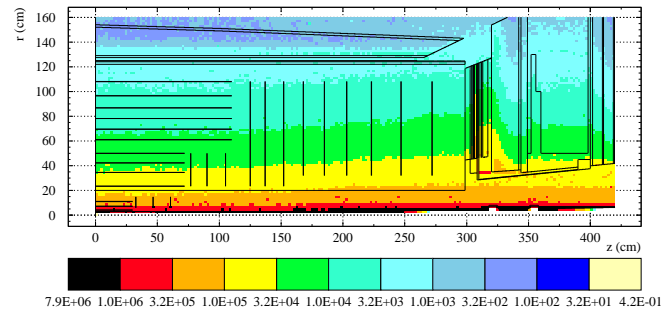
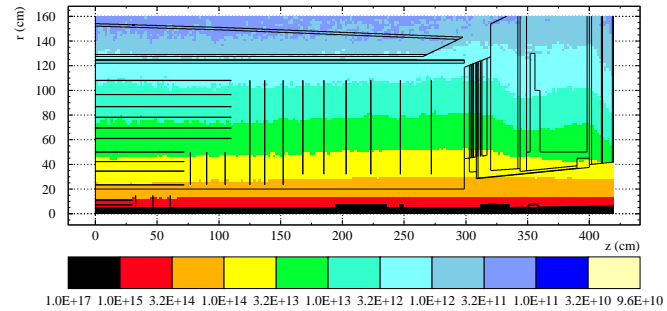
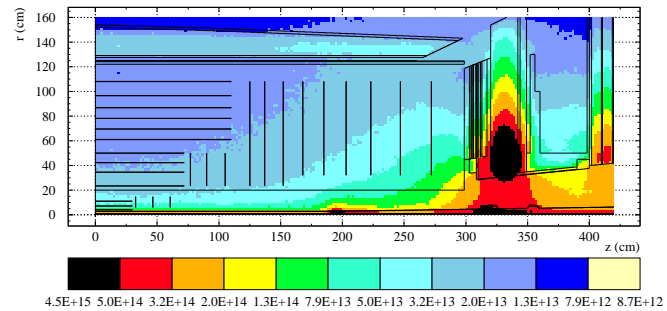


NEUTRON FLUENCE AND DOSE IN CMS AT 10^{34}



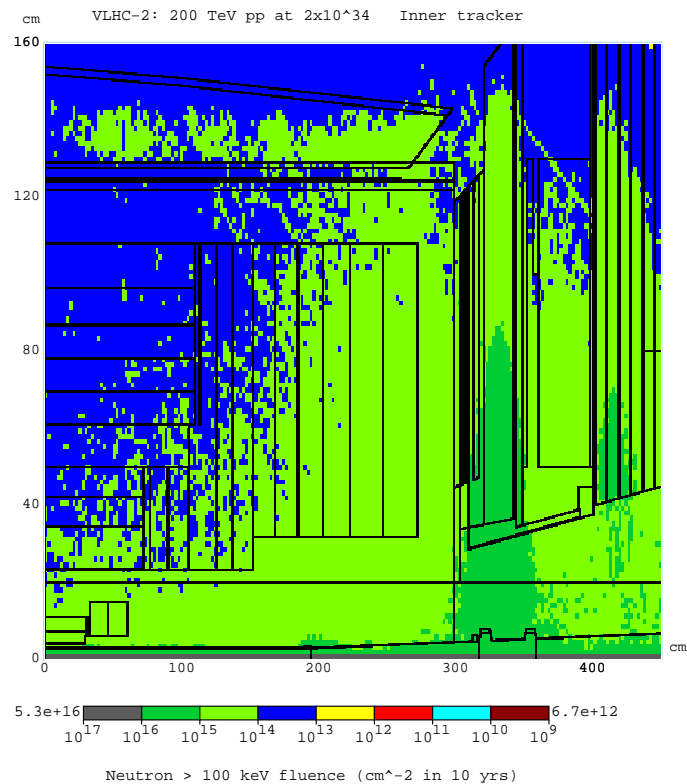
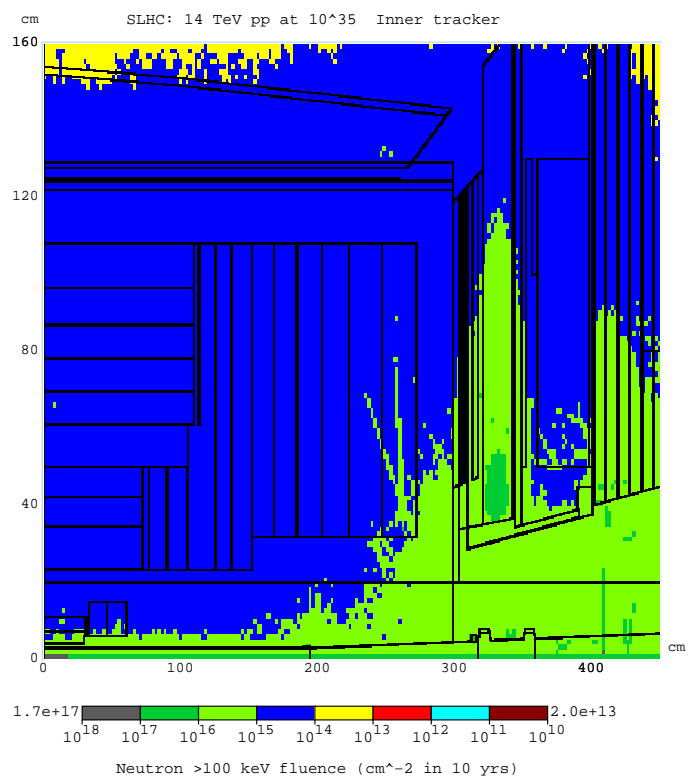
Courtesy M. Huhtinen

RADIATION LOADS IN CMS IT and HF AT 10^{34}

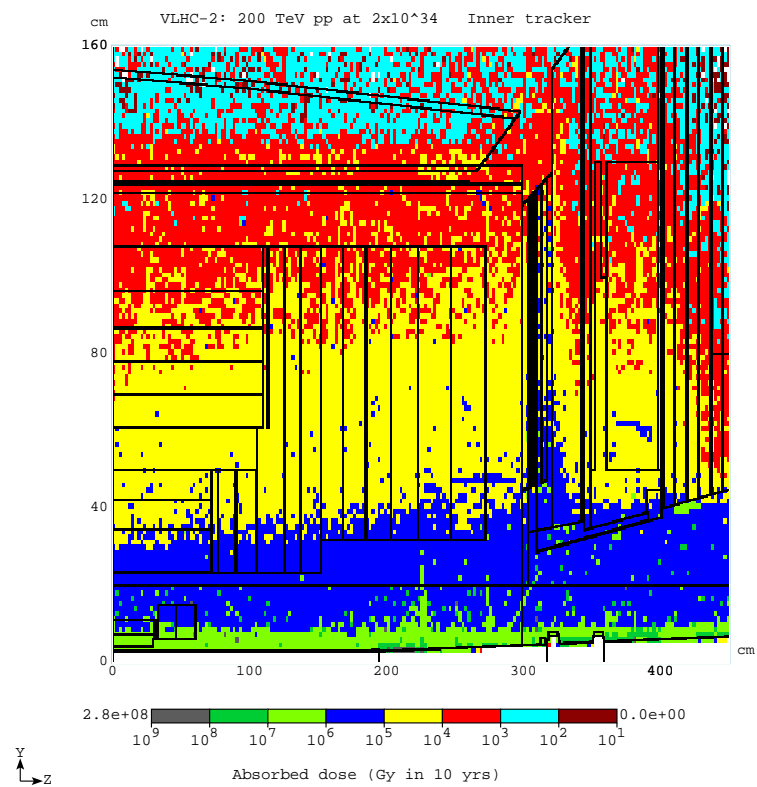
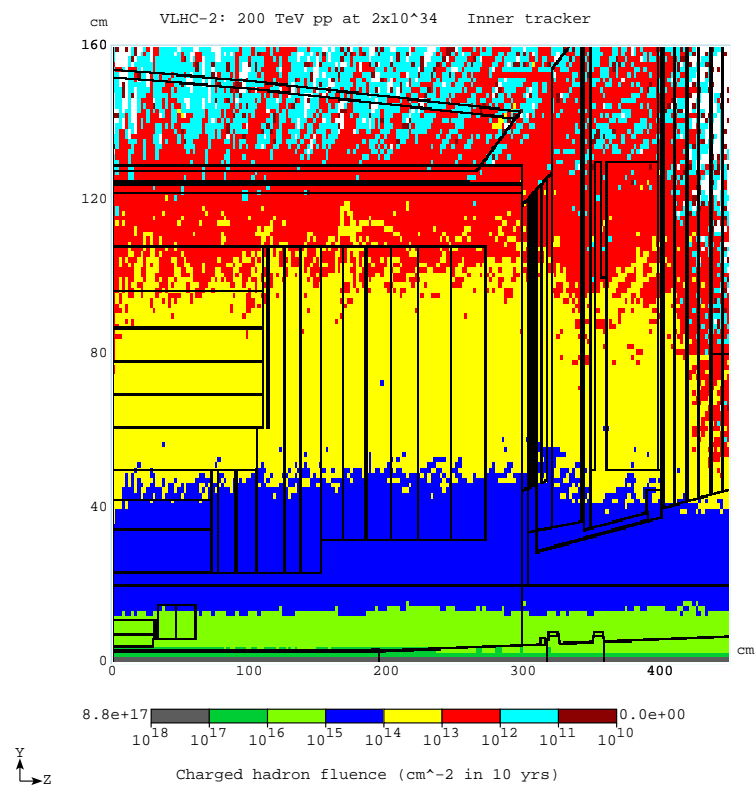


Courtesy M. Huhtinen

NEUTRON FLUENCE IN SLHC AND VLHC-2 TRACKERS



CH. HADRON FLUENCE AND DOSE IN VLHC-2 TRACKERS



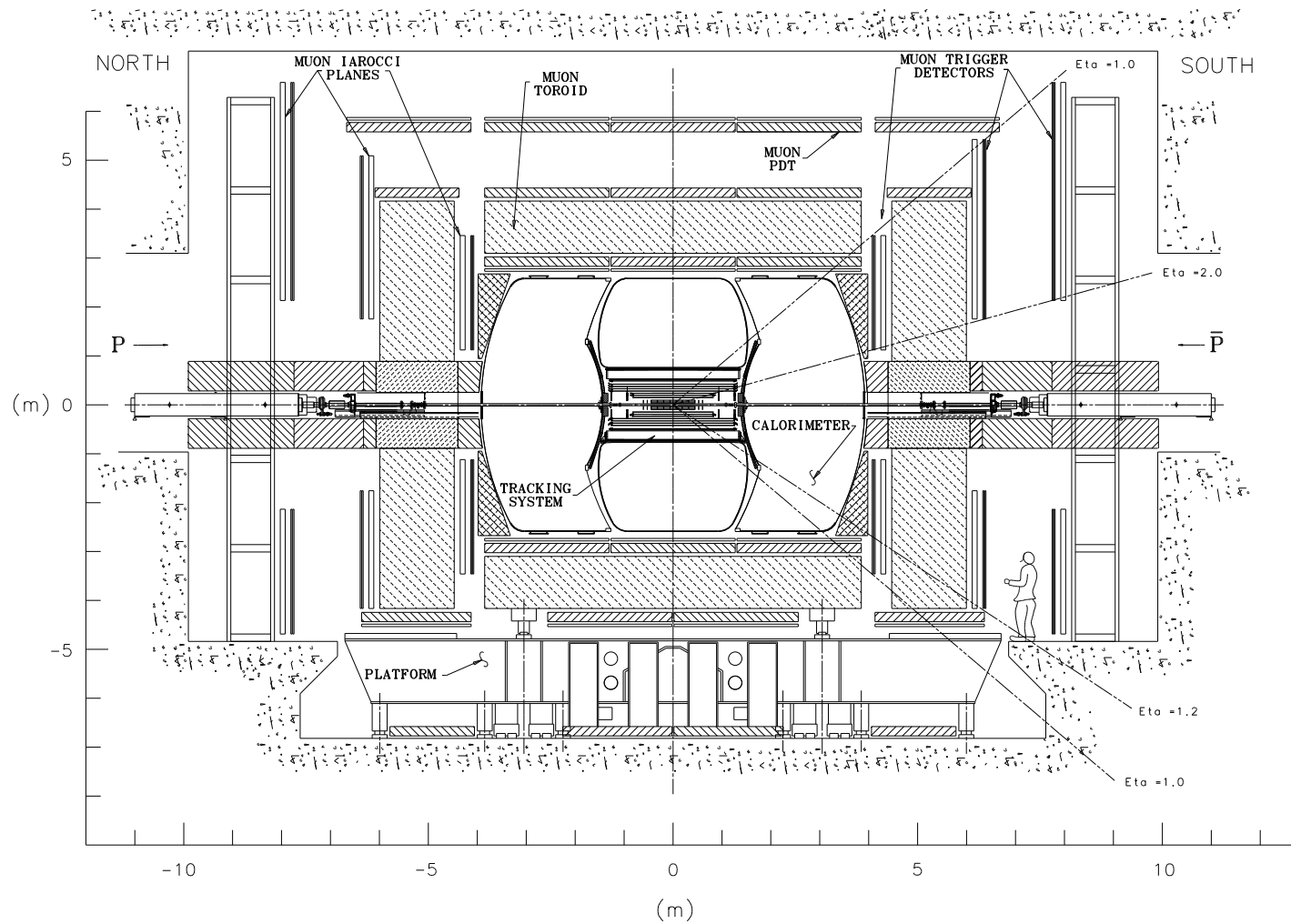
PEAK RADIATION LOADS IN DETECTOR

Peak 10-year fluence (cm^{-2}) and dose (Gy) in inner tracker
and HF calorimeter at 14, 40 and 200 TeV (preliminary)

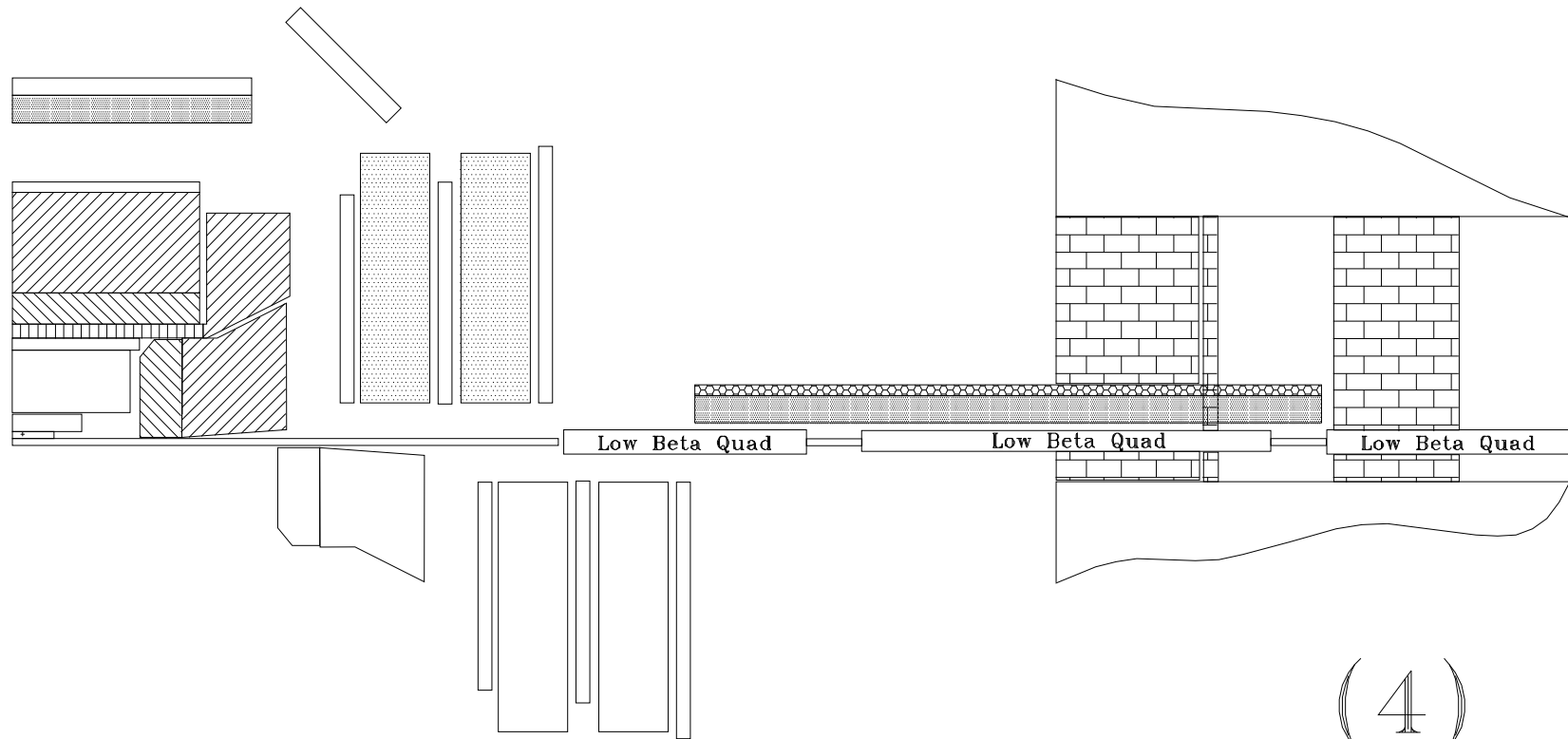
Detector	Value	SLHC	VLHC-1	VLHC-2
SVX	F_n	2×10^{15}	2×10^{14}	8×10^{14}
	F_{chh}	8×10^{16}	8×10^{15}	1×10^{16}
	D	1.5×10^7	1.5×10^6	3×10^6
Tracker	F_n	1.5×10^{15}	2×10^{14}	6×10^{14}
	F_{chh}	1.5×10^{15}	2.5×10^{14}	6×10^{14}
	D	8×10^5	8×10^4	2×10^5
Fin	F_n	1.8×10^{16}	2×10^{15}	4×10^{15}
	F_{chh}	8×10^{14}	1×10^{14}	2.5×10^{14}
	D	2×10^6	3×10^5	5×10^5
HF	F_n	1.5×10^{17}	2.1×10^{16}	4.8×10^{16}
	F_{chh}	7×10^{15}	1.2×10^{15}	2.5×10^{15}
	D	2.5×10^7	3.5×10^6	1×10^7

Residual dose rates at SLHC!!!

DØ SHIELDING



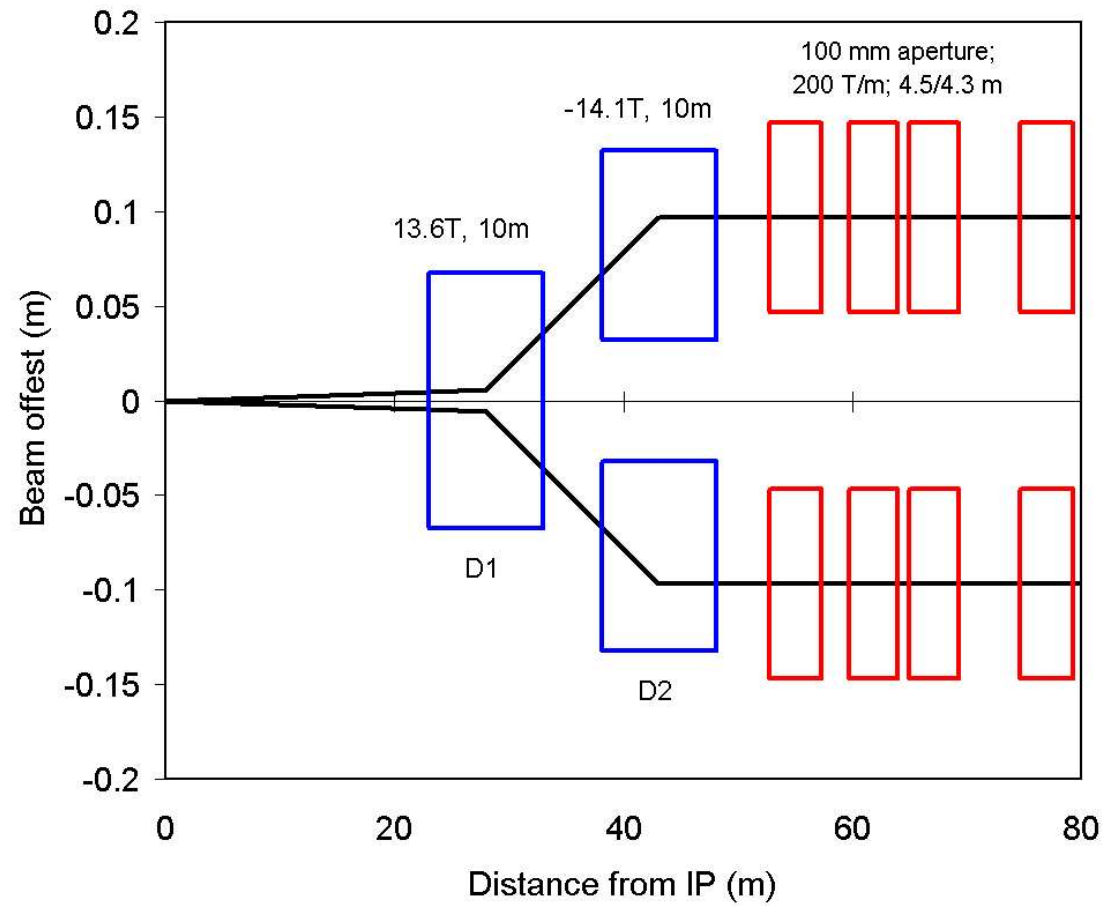
CDF PROPOSED SHIELDING



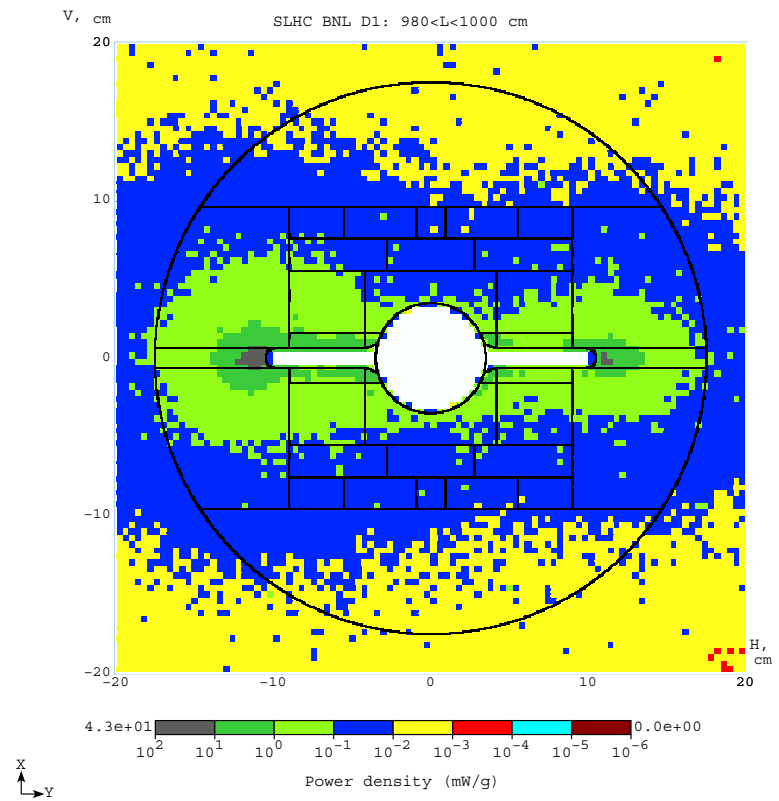
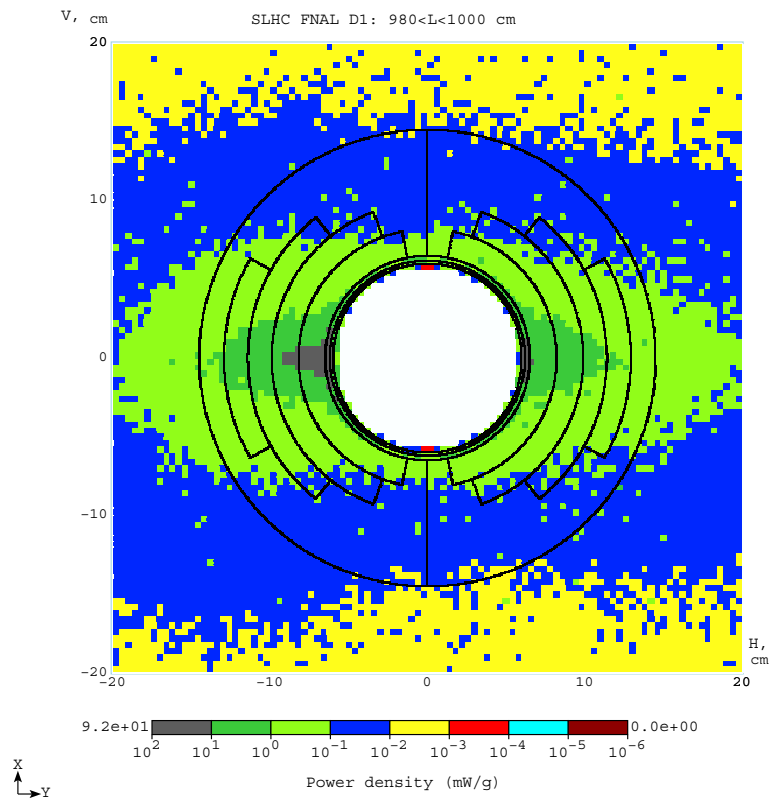
LHC IP1/5 PROTECTION SYSTEM

- The TAS front copper absorber at $L=19.45$ m (1.8 m long, 34-mm ID, 500-mm OD).
- A 7-mm thick stainless steel (SS) liner in Q1.
- The SS absorber TASB at $L=45.05$ m (1.2-m long, $r=33.3-60$ mm).
- A ~ 3 -mm thick SS liner in the Q2A through Q3.
- 40-cm long SS masks at $L=23.45$ m, $r=250-325$ mm to protect the Q1 slide bearings.
- The neutral particle 3.5-m copper absorber TAN at 140 m.
- The 1-m long TCL SS collimator at 191 m from IP.

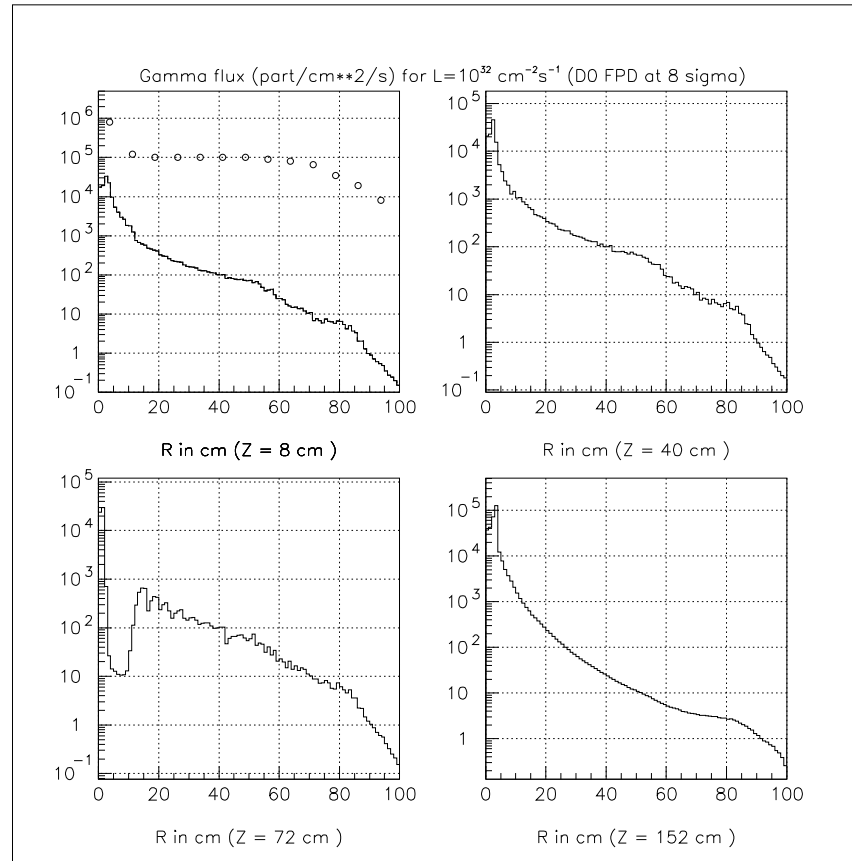
SLHS: DIPOLE-FIRST IR LAYOUT



SLHS: DIPOLE-FIRST ENERGY DEPOSITION

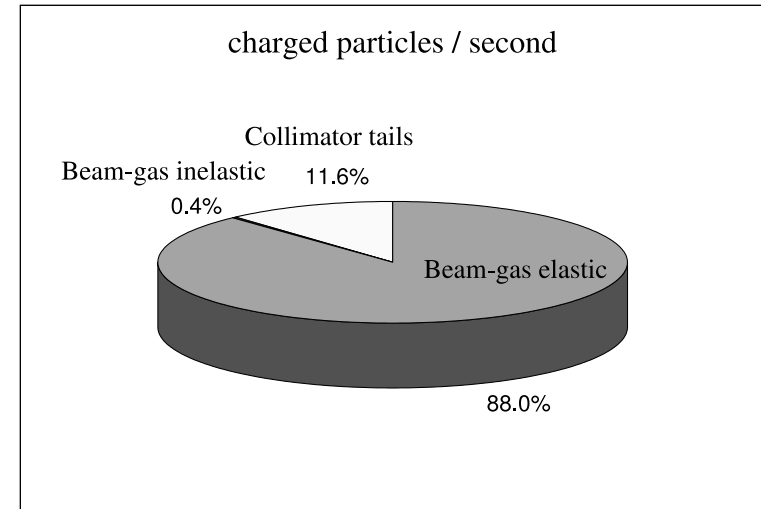
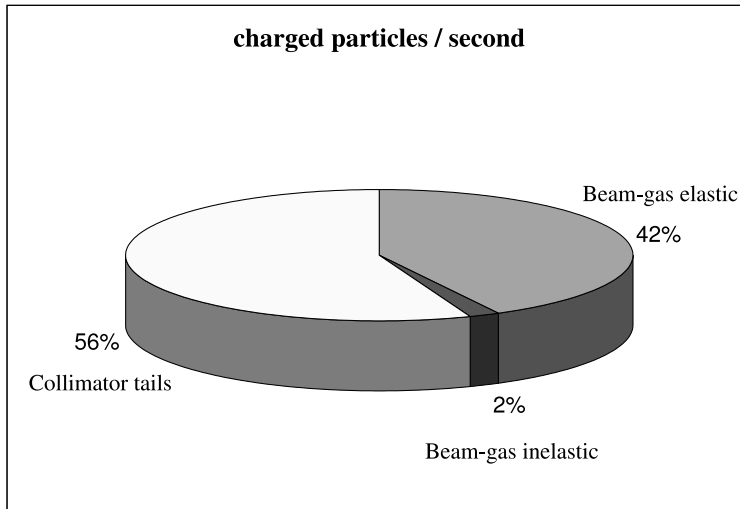


LUMINOSITY vs BEAM LOSS



Beam-loss induced radial distributions of photon flux in the DØ central detector at four distances from IP with FPD detector at 8σ in comparison to that due to $p\bar{p}$ collisions (symbols).

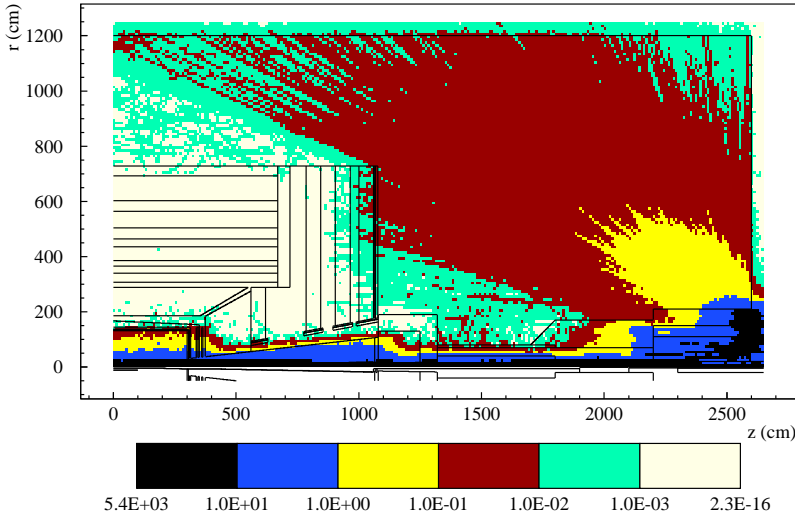
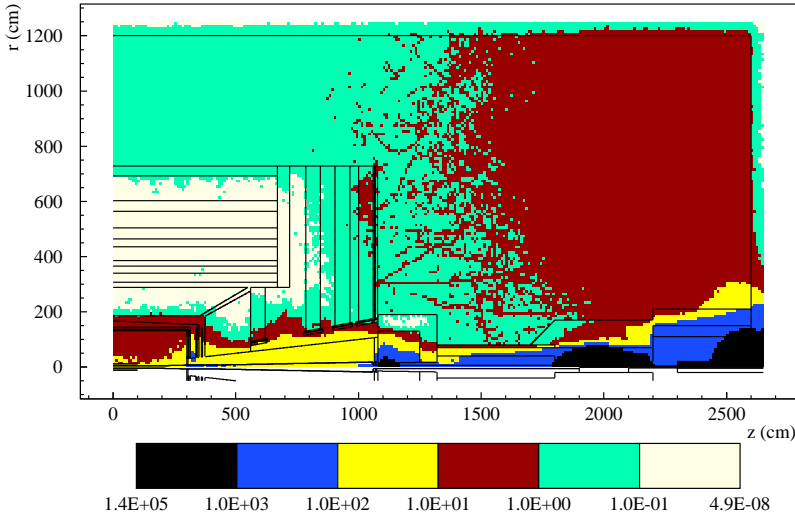
CDF BACKGROUNDS



Partial backgrounds at the CDF West Beam Halo Monitors at average pressure in Tevatron of 10^{-10} (left) and 10^{-9} (right) torr.

Beam loss in BØ due to beam-gas elastic scattering exceeds that from tails from the main collimators at $\langle P \rangle \geq 2 \times 10^{-10}$ torr.

BEAM LOSS INDUCED BACKGROUNDS



FORWARD DETECTORS

Table 1: Total particle fluxes ($10^6 \text{cm}^{-2} \text{s}^{-1}$) averaged over TOTEM's silicon, and peak and average absorbed doses (10^5Gy/yr) at 10^{34} .

Item	RP1	RP2	RP3	RP4	RP5
Charged hadrons	7.5	2.9	1.0	0.58	6.7
Neutrons	3.7	1.3	0.61	0.37	1.4
Electrons	115	28	23	12	18
Photons	1410	279	187	81	147
D_{max}	12	10	20	1.9	55
D_{av}	3.4	1.1	0.69	0.37	1.2

RADIATION LOADS IN DETECTOR AT BEAM ACCIDENT

