M.D.I.

Eugenio

for the MDI group

Hit positions of all generated Bhabha primaries
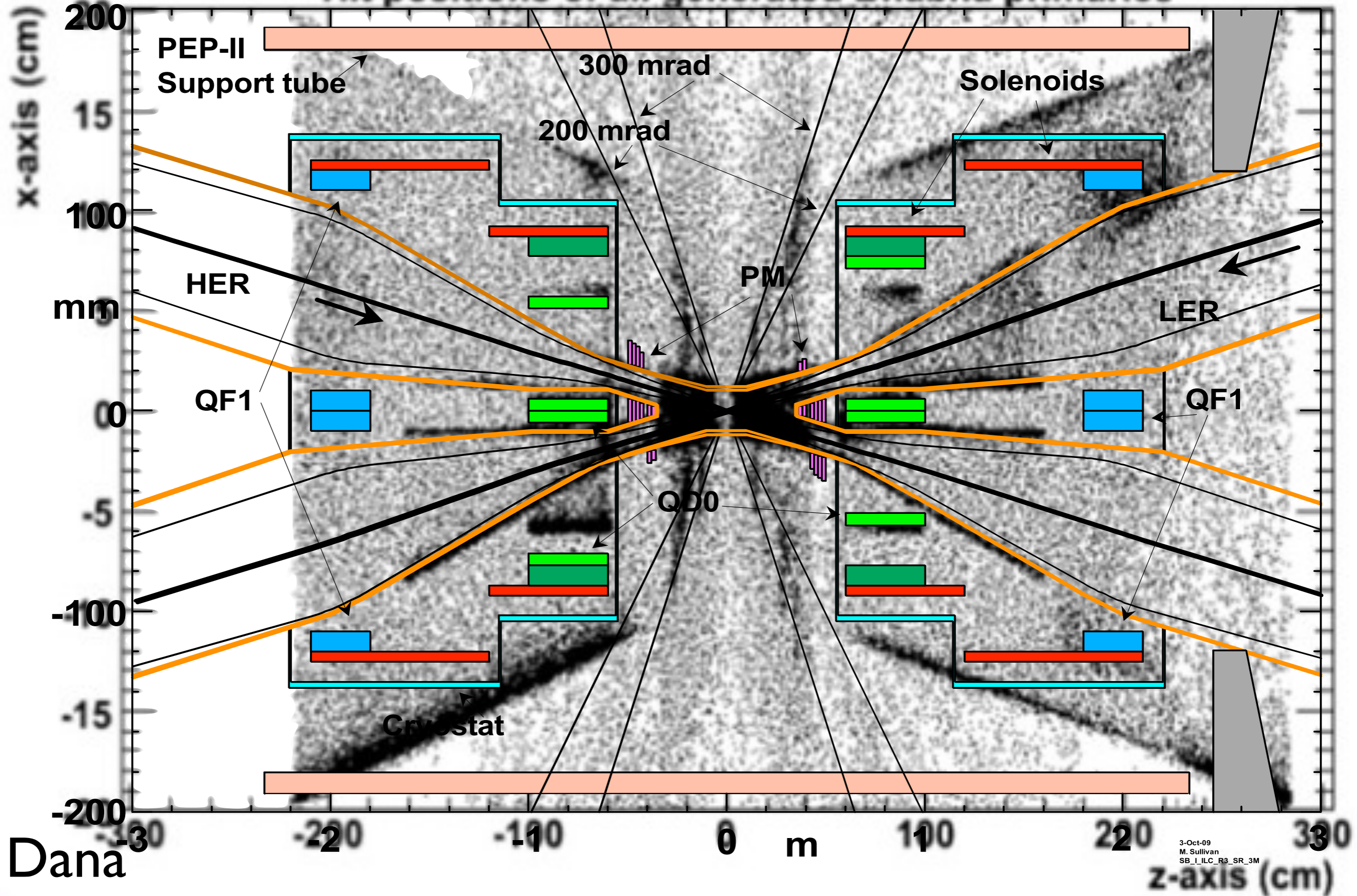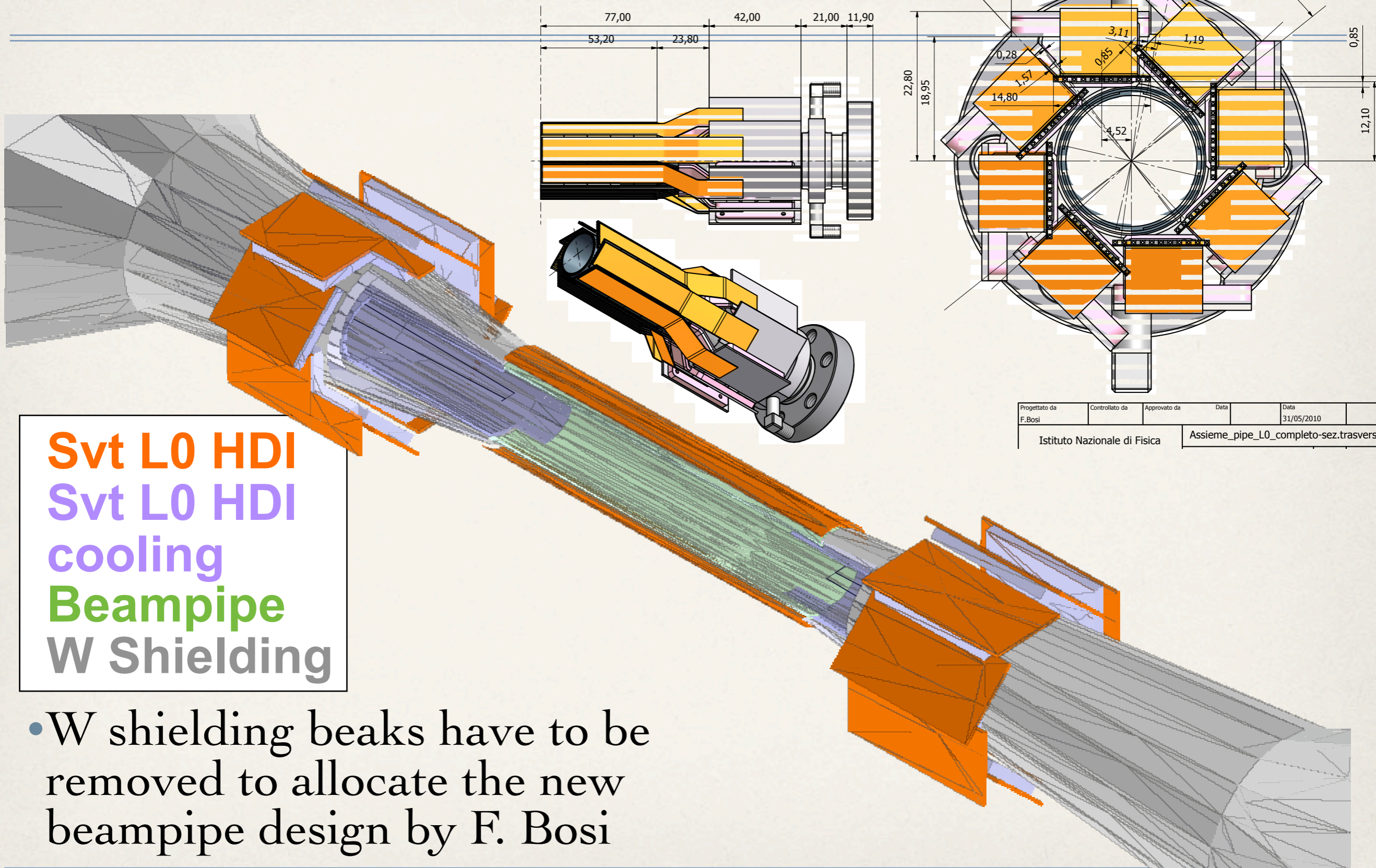
L0 electronics

Svt L0 HDI
Svt L0 HDI cooling
Beampipe
W Shielding

- W shielding beaks have to be removed to allocate the new beampipe design by F. Bosi

Friday, October 1, 2010

SVT electronics

Svt Atom Matching Cards
Svt HDI
Beampipe
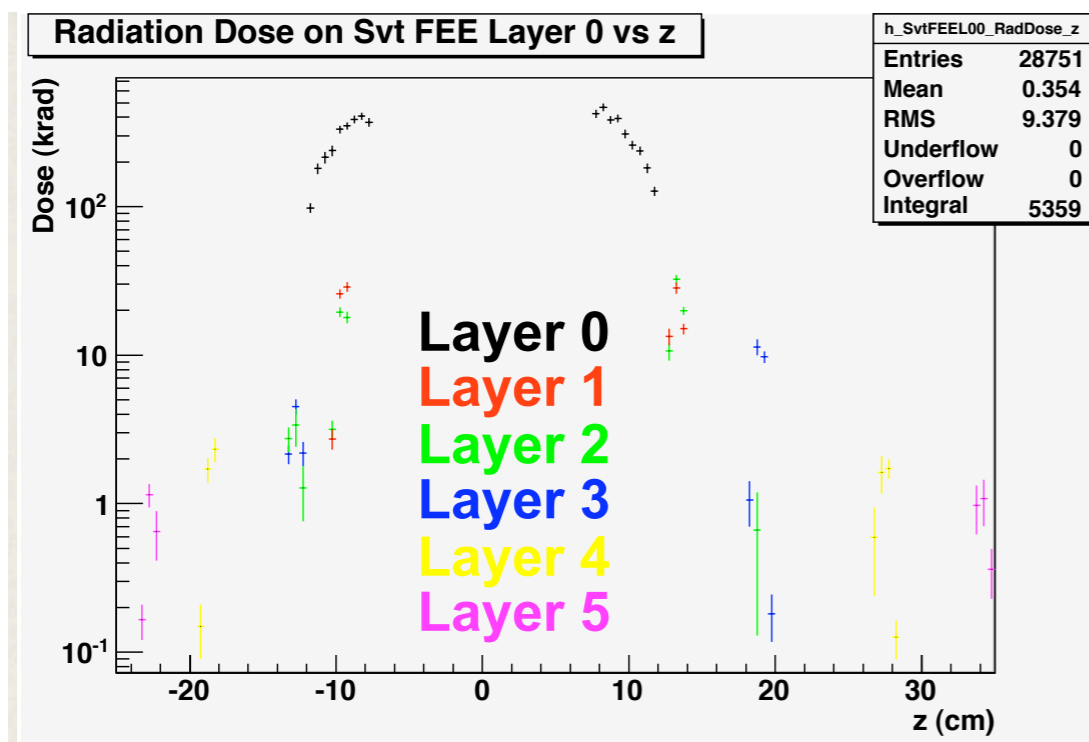**W Shielding**

Radiation on SVT HDI

L0 HDI

Av. Dose (l
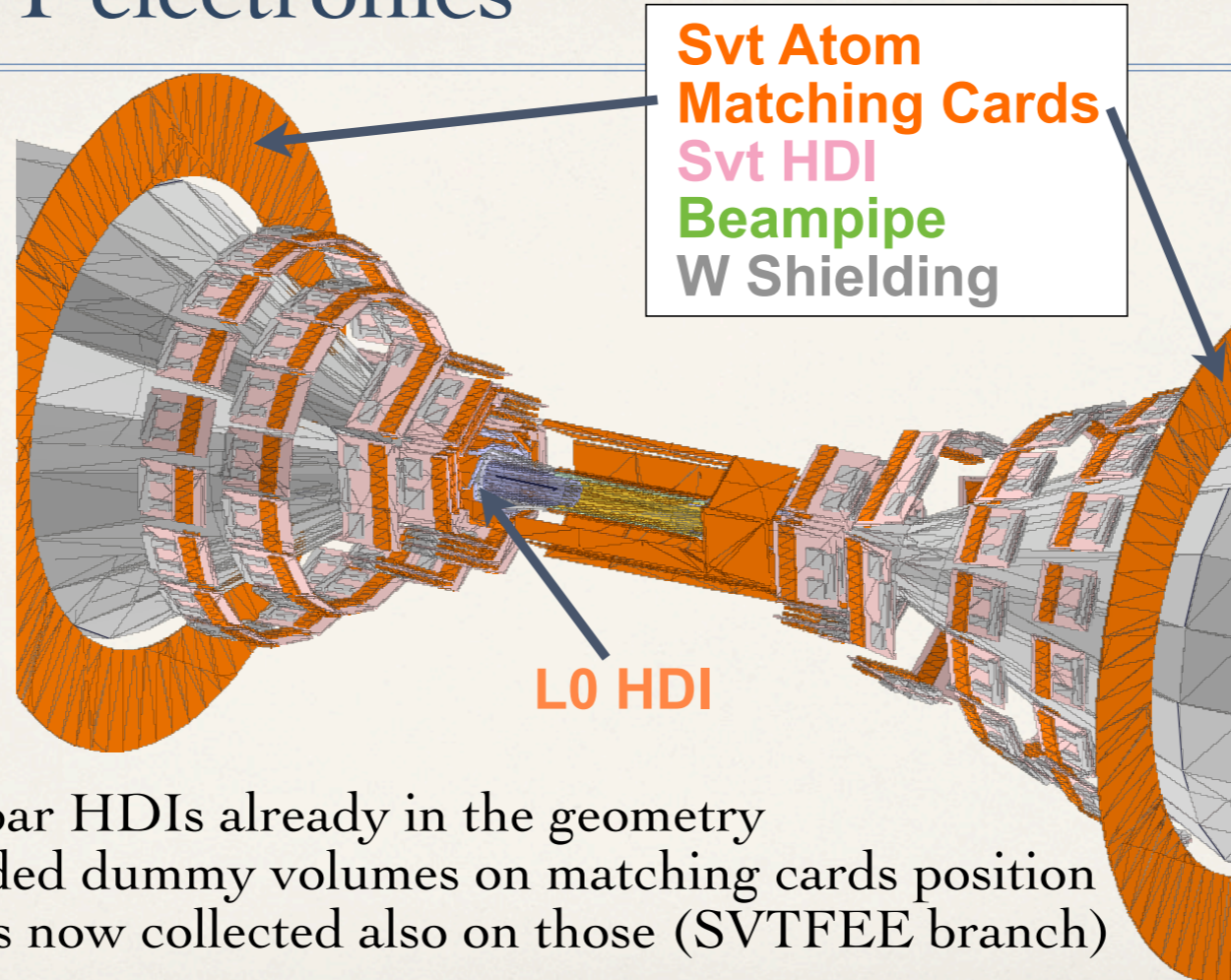
- Babar HDIs already in the geometry
- Added dummy volumes on matching cards position
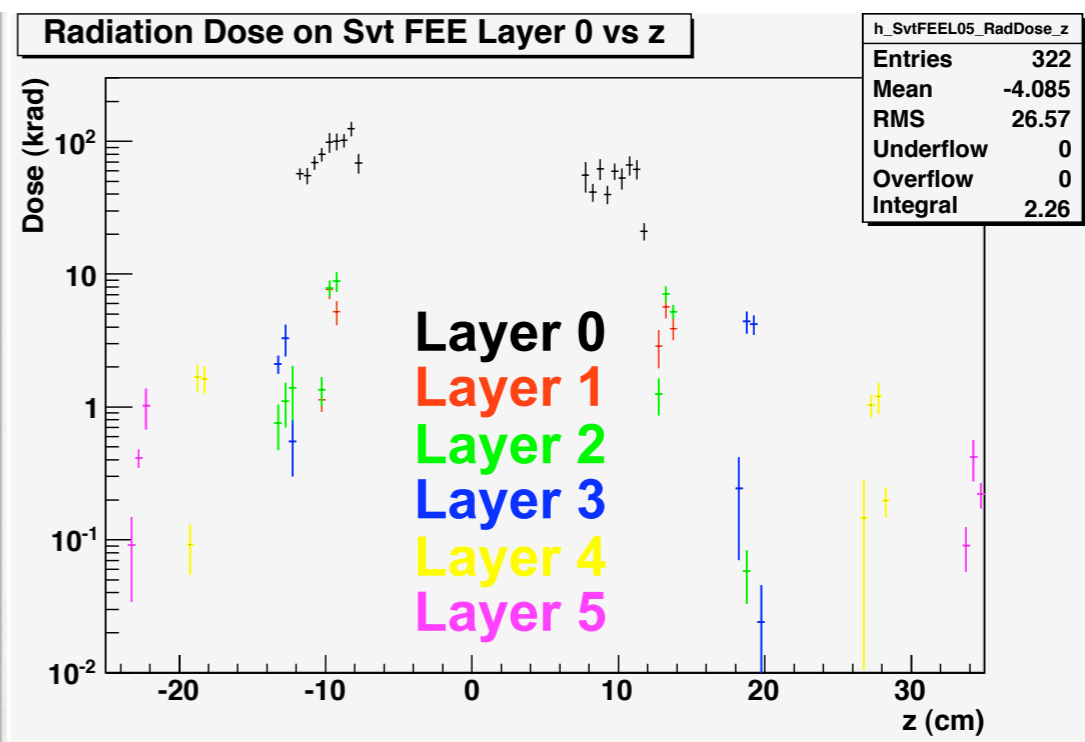- Hits now collected also on those (SVTFEE branch)

319	45	44	12	3	2

RadBhabha

72	10	14	6	2	1

Riccardo Cenci   6   *SuperB General Meeting, Oct 26, 2010*

Pairs

Rad Bhabha

Radiation Dose on Svt FEE Layer 0 vs z

h_SvtFEEL00_RadDose_z	
Entries	28751
Mean	0.354
RMS	9.379
Underflow	0
Overflow	0
Integral	5359

Dose (krad) vs z (cm)

Layer 0
Layer 1
Layer 2
Layer 3
Layer 4
Layer 5

Radiation Dose on Svt FEE Layer 0 vs z

h_SvtFEEL05_RadDose_z	
Entries	322
Mean	-4.085
RMS	26.57
Underflow	0
Overflow	0
Integral	2.26

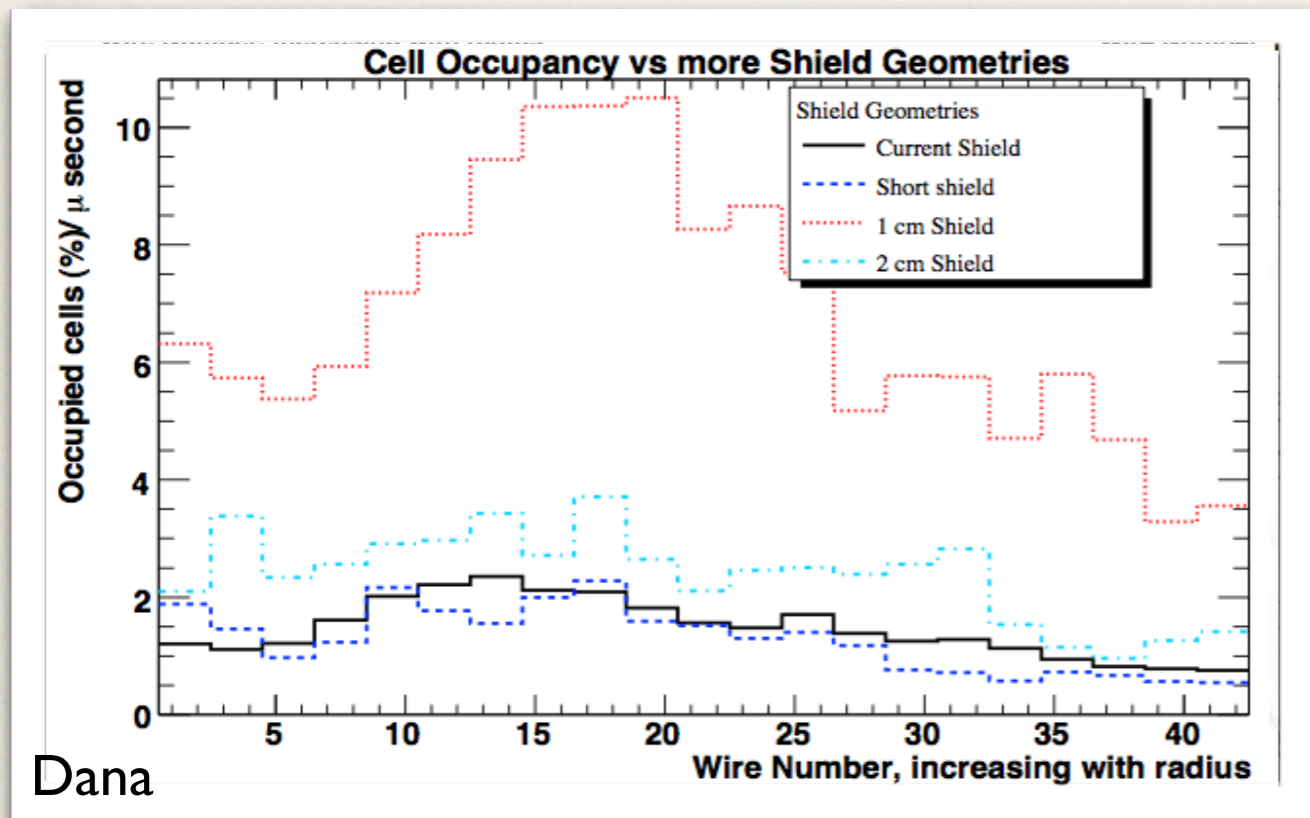Dose (krad) vs z (cm)

Layer 0
Layer 1
Layer 2
Layer 3
Layer 4
Layer 5

Occupancy vs max step length

same for the 3 step limit setting

ettings, different number of calls for

root file but hits are still different.
onfiguration is not simulating well low
multiple scattering in low density
)

y, consistent for Einc > 5MeV

Dana

	Old method	New Method	New method Einc > 1 MeV	New method Einc > 5 MeV
Occ (no step limit)	2.9%	4.7%	1.74%	0.50%
Occ (max step 5cm)	2.9%	3.3%	1.07%	0.43%
Occ (max step 1mm)	1.35%	1.36%	0.80%	0.46%

Friday, October 1, 2010
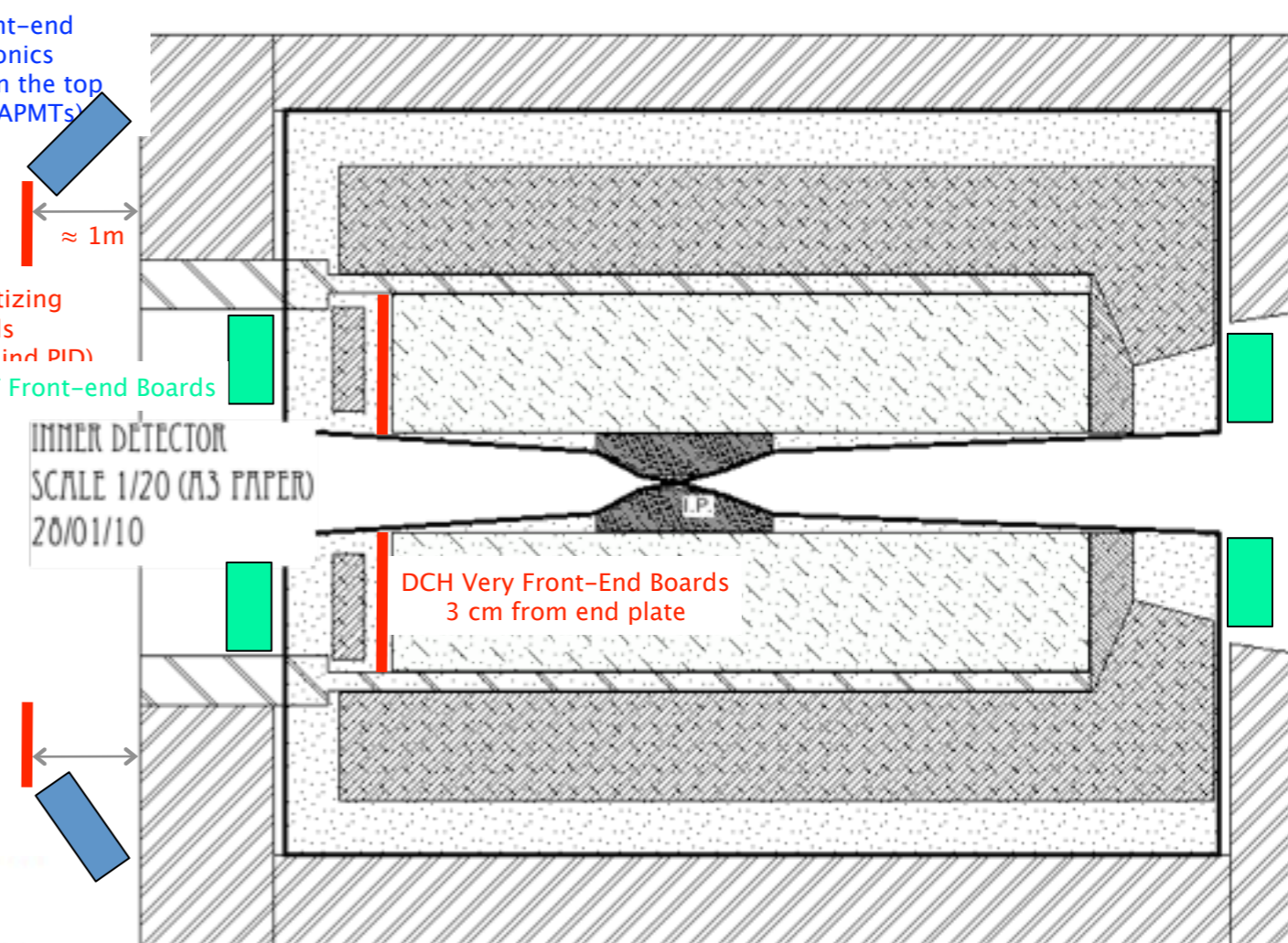
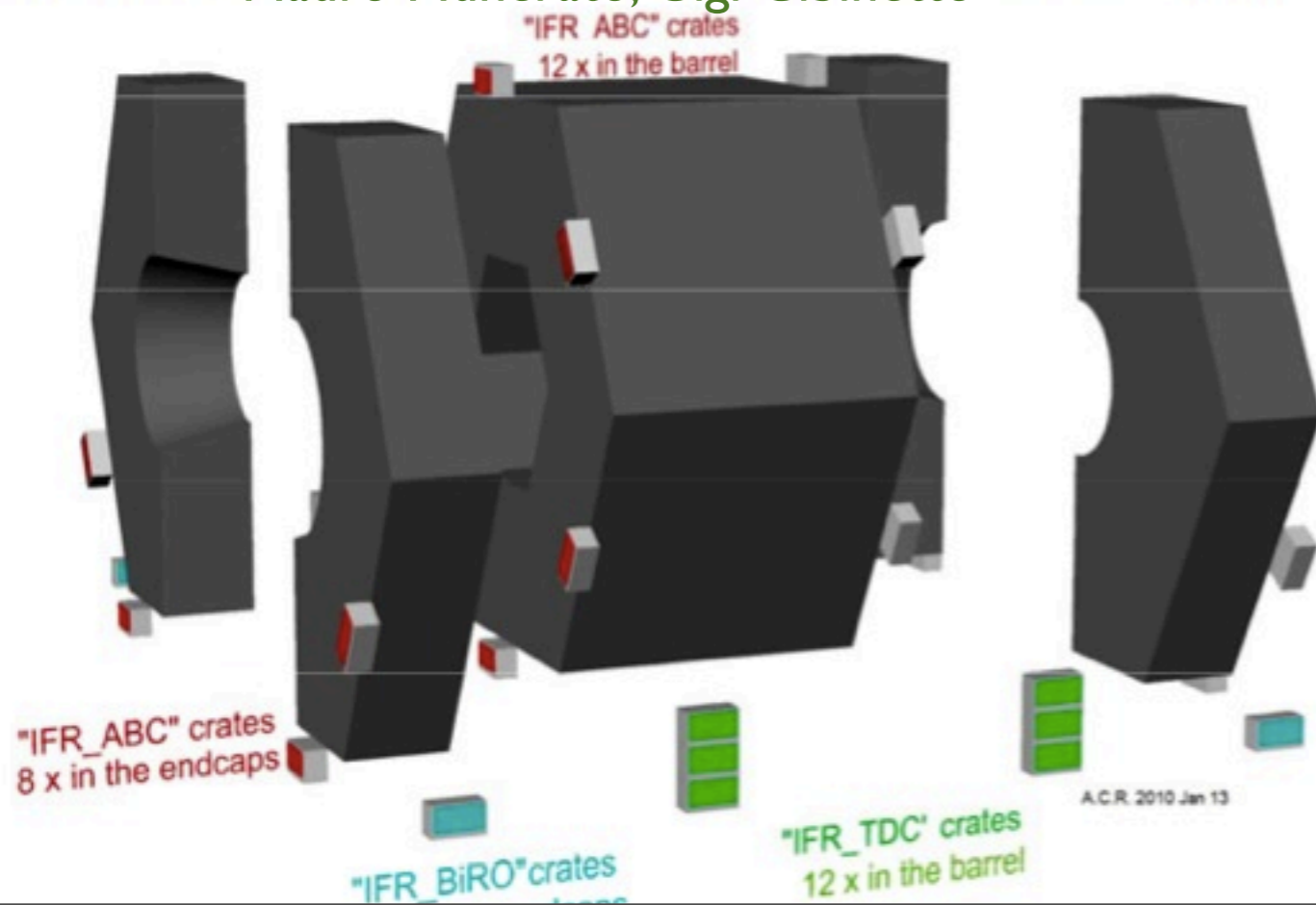# Detector hall electronics model
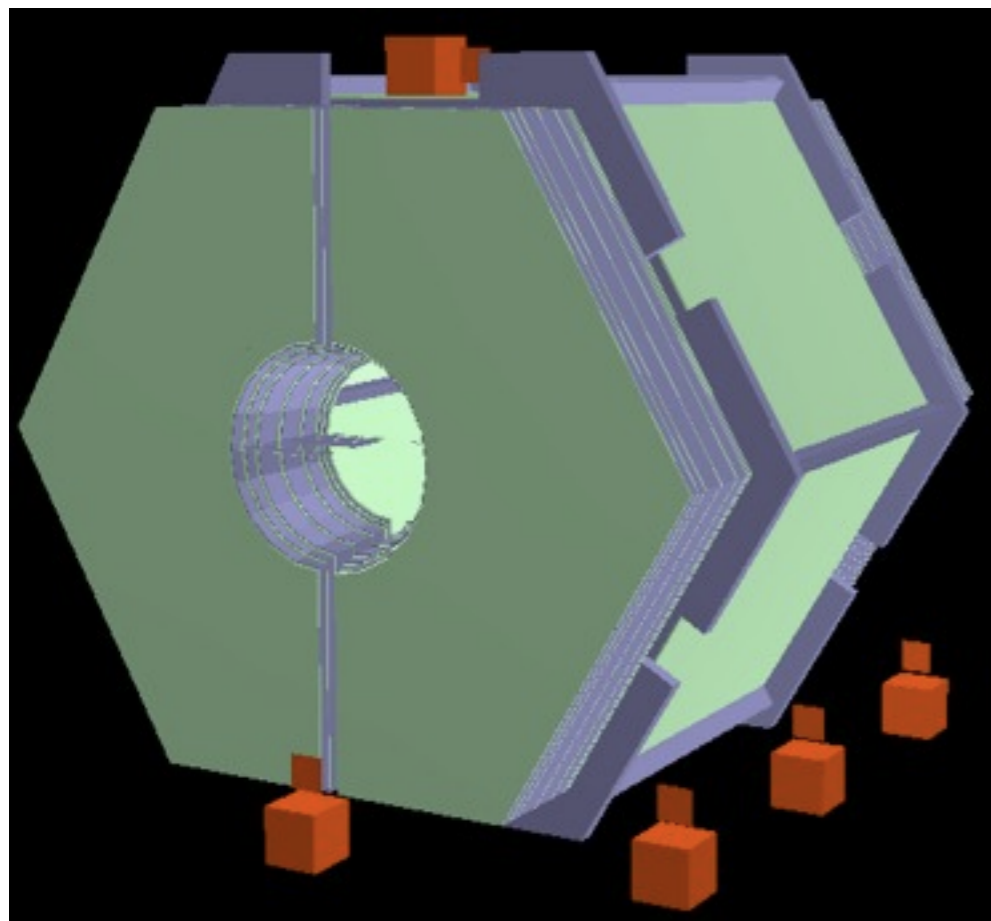
Mauro Munerato, Gigi Cibinetto

PID Front-end Electronics (located on the top of the MAPMTs)

≈ 1m

DCH Digitizing Boards (located behind PID)

SVT Front-end Boards

INNER DETECTOR SCALE 1/20 (A3 PAPER) 28/01/10

I.P.

DCH Very Front-End Boards 3 cm from end plate

Dominique Breton

"IFR ABC" crates 12 x in the barrel

"IFR_ABC" crates 8 x in the endcaps

"IFR_BiRO" crates

"IFR_TDC" crates 12 x in the barrel

A.C.R. 2010 Jan 13
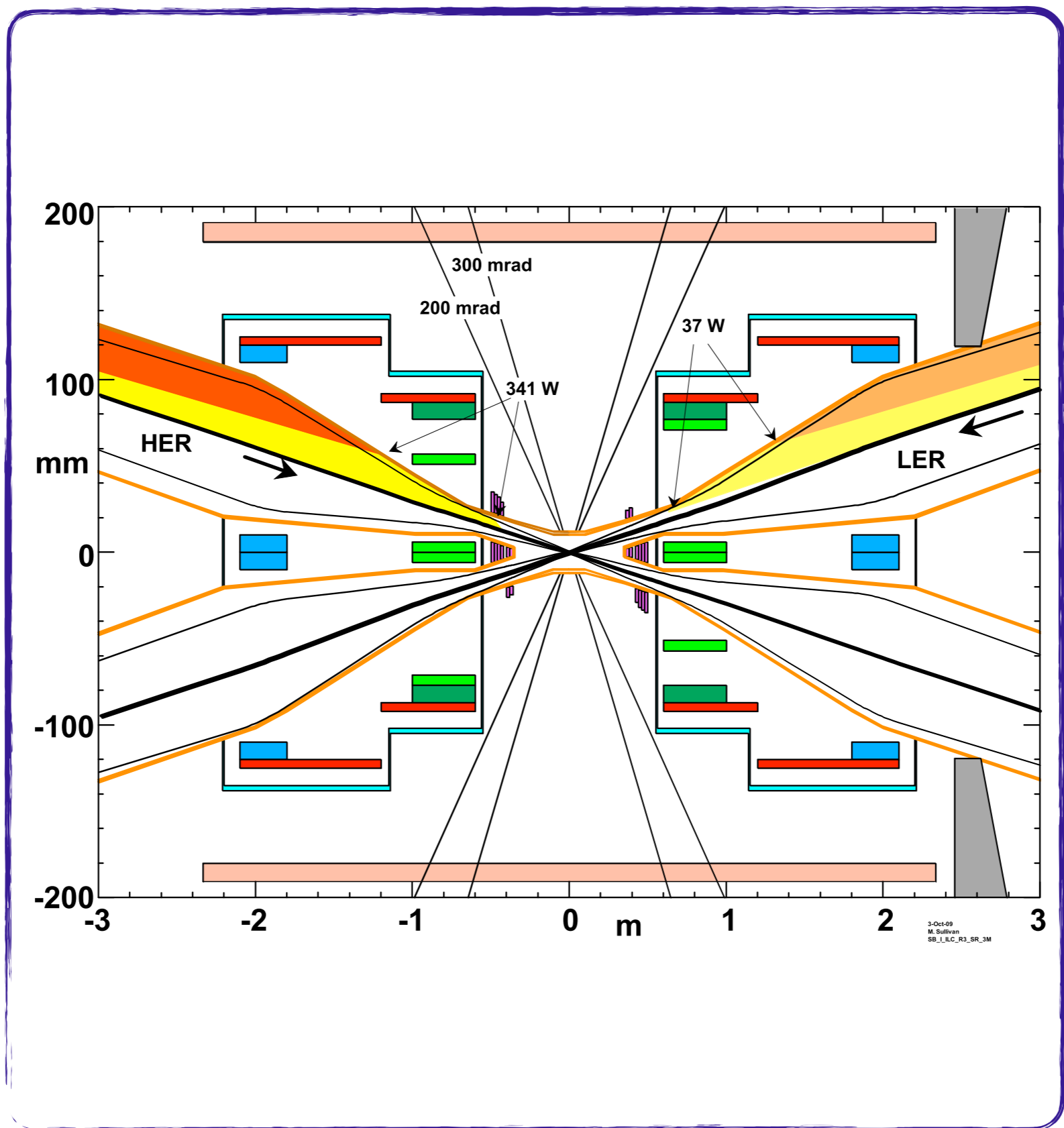
Next Production

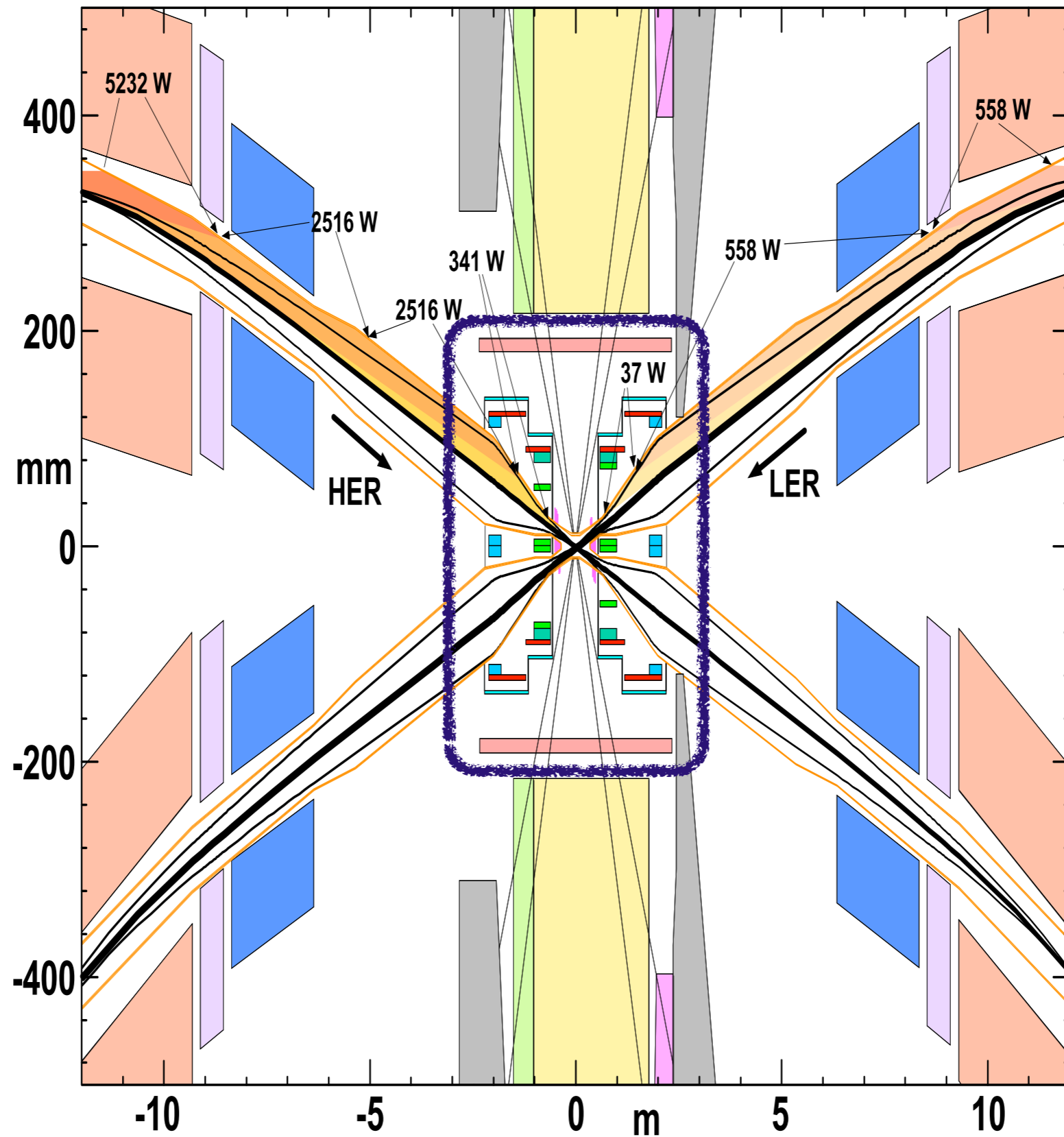# Next Production

Time line

- Model of the beam line (Perez) and of the electronics racks by end of october

- 10^6 events radiative Bhabha (request driven by IFR people)

- Touschek backgrounds 2×10^5 primaries

- Production should start just after halloween

- Production should be completed by end november

SuperB ~ SuperKEKB

	Cross section	Evt/bunch xing	Rate @ 10^{36} Hz/cm^2	Super KEKB
"Radiative" Bhabha e^+e^- to $e^+e^-\gamma$	~340 mbarn ($E\gamma/E_{beam} > 1\%$)	~850	0.3 THz	Work in progress
e^+e^- pair production	~7.3 mbarn	~18	7 GHz	Ok
e^+e^- pair (seen by L0 @ 1.5 cm)	~0.3 mbarn	~0.8	0.3 GHz	1/10 ??
Elastic Bhabha	O(10^{-4}) mbarn (Det. acceptance)	~250/Million	100 KHz	
Υ(4S)	O(10^{-6}) mbarn	~2.5/Million	1 KHz	
	Loss rate	Loss/bunch pass	Rate	
Touschek (LER)	4.1 kHz / bunch (+/- 2 m from IP)	~3/100	~5 MHz	Good agreement in total loss rate. SuperB have a better scraper system.

SuperB - SuperKEKB

- We agreed on a set of cross checks to do in the future

  - Generators level distributions
    - Diag 36 vs BDK
    - BBBrem
    - STAR (Touschek)

  - Beam line transport

  - Interactions with the beam line material

Future plans

- IR design is almost shaped up (see Mike talk)

- Time to dress the beam line.
  Sub system should begin to allocate space for their needs.

- Mechanical engineers needed to make real progresses (efficiently) at this stage

Touschek data-simulation comparison